

MEDIEVAL FLOOR TILES OF NORTHERN ENGLAND

*Pattern and Purpose: production between the
13th and 16th centuries*

J. Stopford



OXBOW BOOKS

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Dedicated to Ken Beulah and Jim Lang

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Summary

This study of the design, manufacture and use of medieval floor tiles shows the long-lasting influence achieved in the north of England by the monasteries of the reformed movement, particularly the Cistercians. It serves to demonstrate how these monastic houses made use of the resources and contacts available to them. In the 13th century, monastic ownership of the organisation of manufacture (possibly also the actual process) suggested that access to floor tiles depended on an association with these religious communities. The symbolism of the magnificent pavements laid in Cistercian and Augustinian churches at that time suggested that an understanding of the layout of the floors depended on intellectual links with southern Europe. The study goes on to show how subsequent periods of change in the structure of the industry and the market for floor tiles were accompanied by changes in design and manufacture. Personalised designs, often with heraldry, became popular from *c.*1300 and again from the late 15th century, when those using floor tiles included members of the secular aristocracy and those making the tiles were operating relatively independently. An association between floor tiles and the reformed monasteries was, however, retained throughout the medieval period in the north, with this material being favoured by members of the aristocracy who were particularly opposed to the Dissolution of the monasteries in the earlier 16th century. Changes in attitudes, allowing the use of floor tiles in more domestic and secular contexts, may have been encouraged by the importation of plain-glazed tiles from the Netherlands from the 14th century onwards. These tiles, which were free of personal or institutional associations, were laid in pavements in a uniform chequered arrangement.

The study establishes the significance and value of the material as a resource for the future and generates narratives for use in displays of floor tiles. It shows the types of information that can be obtained through

studying these artefacts that may be of general interest to medieval studies. It also provides data needed to inform decisions about future conservation work on the re-set tiles as well as decisions about sampling, storage and archiving policies.

The area covers the whole of the north of England from the Humber estuary in the east and River Ribble in the west up to the Scottish border. The medieval floor tile assemblage in this region is one of the richest in the world. All provenanced material, in national and regional collections or re-set on the ground, was included in the study. Work was restricted to material for which there was some evidence of provenance in order that the distributions of the different industries could be established. The provenanced material amounted to assemblages from 118 different sites. The evidence for provenance, with other details of the assemblages, is listed in a site gazetteer. Tiles from outside the study area were included where they belonged to tile workshops that were centred in the north. This involved the inclusion of 13th-century material from Newbattle Abbey, near Edinburgh, and 14th-century tiles from as far apart as Reedham Church, Norfolk, and Dornoch Cathedral in north-east Scotland.

The products of individual workshops were identified from variations in the way the floor tiles were made. Thirty-five tile groups were identified. The material spanned the period from the 13th to the mid 16th century. Over 500 different designs and 60 mosaic arrangements that had been in use in the medieval period were identified from the extant assemblages and from searches of published literature and antiquarian records. Comparisons were made between different parts of the study area as well as with published assemblages from further afield. The study therefore examines changes in the design, manufacture, distribution and consumption of a particular artefact type in a large region over a long period of time.

Résumé

Cette étude de la conception de la fabrication et de l'utilisation des carrelages médiévaux témoigne de la longue influence qu'ont eue les monastères du mouvement de réforme dans le Nord de l'Angleterre, tout particulièrement les cisterciens. Elle servira à démontrer la manière dont ces maisons monastiques utilisaient les ressources et les contacts à leur disposition. Au 13^{ème} siècle, le fait que l'organisation de la fabrication (et peut-être aussi le procédé lui-même) relevait des monastères suggère que l'accès aux carrelages dépendait d'un lien avec ces communautés religieuses. Le symbolisme des magnifiques pavements posés à cette époque dans les églises cisterciennes et augustiniennes suggérait que les connaissances concernant l'agencement des sols dépendaient de liens intellectuels avec le Sud de l'Europe. Ensuite, l'étude montre comment les périodes suivantes de changement au niveau de la structure de l'industrie et du marché pour les carrelages de sols étaient accompagnées de changements au niveau de la conception et du dessin. Les dessins personnalisés, intégrant souvent des blasons, commencèrent à être recherchés à partir de 1300 environ et une fois de plus à partir de la fin du 15^{ème} siècle, époque à laquelle les membres de l'aristocratie séculaire utilisaient également les carrelages et les fabricants de carrelages étaient relativement indépendants. Dans le Nord, il resta néanmoins un lien entre les carrelages et les monastères réformés pendant toute la période médiévale, car les membres de l'aristocratie qui étaient tout particulièrement opposés à la dissolution des monastères au début du 16^{ème} siècle préféraient ces carrelages. Les changements d'attitude, permettant d'utiliser les carrelages dans des contextes plus domestiques et séculaires, ont peut-être été favorisés par l'importation de carrelages vernis de couleur unie des Pays-Bas à partir du 14^{ème} siècle. Ces carrelages, qui n'avaient aucun lien avec des personnes ou des institutions, étaient posés dans des pavements suivant un dessin uniforme de style damier.

L'étude établit le sens et la valeur de ce matériel en tant que ressource ultérieure et fournit un texte narratif pouvant être utilisé pour les expositions de carrelages de sol. Elle indique le type d'informations pouvant être obtenues à travers l'étude d'objets fabriqués susceptibles, en général, d'être utiles au niveau des études médiévales. Elle fournit également les données nécessaires pour prendre, en tout état de cause,

des décisions concernant des travaux de conservation éventuels sur les carrelages réinstallés au sol ainsi que des décisions concernant les principes généraux relatifs à l'échantillonnage, à l'entreposage et aux archives.

La zone en question englobe tout le Nord de l'Angleterre, de l'estuaire de la Humber à l'est et de la rivière Ribble à l'ouest jusqu'à la frontière écossaise. L'ensemble de carrelages de sol médiévaux dans cette région est l'un des plus riches du monde. Tout le matériel de provenance établie, que ce soit dans les collections nationales et régionales ou bien réinstallé au sol, a été inclus dans l'étude. Le travail a été limité au matériel pour lequel il existait des indices concernant la provenance, afin de pouvoir établir la répartition des différentes industries. Des ensembles provenant de 118 sites différents faisaient partie du matériel de provenance établie. La liste des indices de provenance, ainsi que d'autres détails concernant les ensembles, se trouve dans l'index géographique des sites. Des carrelages provenant de zones extérieures à celles de l'étude ont été inclus lorsqu'ils appartenaient à des ateliers de carrelages centrés dans le Nord. Ont donc été inclus du matériel du 13^{ème} siècle de l'Abbaye de Newbattle, près d'Édimbourg, et des carrelages du 14^{ème} siècle provenant d'endroits parfois très éloignés les uns des autres, comme l'église de Reedham, Norfolk, et la cathédrale de Dornoch au nord-est de l'Écosse.

Les produits d'ateliers individuels ont été identifiés à partir de variations dans la fabrication des carrelages de sol. Trente-cinq groupes de carrelages ont été identifiés. Le matériel couvrait la période allant du 13^{ème} siècle au milieu du 16^{ème} siècle. Plus de 500 dessins différents et 60 agencements de mosaïque qui avaient été utilisés à l'époque médiévale ont été identifiés à partir des ensembles existant encore et à partir de recherches dans les publications et les archives d'antiquités. Des comparaisons ont été faites entre différentes parties de la zone sur laquelle portait l'étude ainsi qu'avec des ensembles publiés de lieux plus éloignés. L'étude examine donc les changements de dessin, de fabrication, de répartition et de consommation pour un type précis d'objet fabriqué, et ce dans une grande région pendant une longue durée.

Traduction: Charlette Sheil-Small

Zusammenfassung

Diese Studie über das Design, die Herstellung und die Benutzung von Bodenfliesen macht den langzeitigen Einfluss deutlich, welcher im Norden Englands von den Klöstern der Reformbewegung, speziell den Zisterziensern, in diesem Gebiet erreicht wurde. Die Untersuchung dient zur Verdeutlichung, wie sehr diese Klosterhäuser, von den Ihnen zur Verfügung stehenden Mitteln und Kontakten, Gebrauch machten. Klösterliches Besitztum der Herstellungsorganisation (möglicherweise auch der eigentliche Prozess) im 13. Jahrhundert deutet darauf hin, dass der Zugang zu Bodenfliesen nur über Verbindungen mit diesen religiösen Gemeinden möglich war. Die Symbolik der prachtvollen Böden, welche in den Zisterzienser- und Augustinerkirchen zu jener Zeit verlegt wurden, legt ein Verständnis von der Anordnung und Gestaltung von Böden durch ein intellektuelles Verbündnis mit Südeuropa nahe. Die Studie fährt mit der Erklärung fort, wie in den folgenden Zeiträumen die Veränderungen an der Struktur der Industrie sowie des Markets für Bodenfliesen, durch Veränderungen im Design begleitet wurden. Persönliche Designs, oftmals mit Wappen, wurden um ca. 1300 und nochmals zum Beginn des 15. Jahrhunderts populär, als zu der Käuferschaft die weltliche Aristokratie gehörte und die Hersteller von Bodenfliesen relativ unabhängig operierten. Die Verbindung zwischen Klöstern und der Herstellung von Bodenfliesen im Norden Englands wurde jedoch durch diesen gesamten Zeitraum aufrecht erhalten, wo die Bodenfliesen insbesondere von den Mitgliedern der Aristokratie bevorzugt wurde, welche gegen eine Auflösung der Klöster im frühen 16. Jahrhundert war. Erste Veränderungen zu bestehenden Einstellungen, welche die Benutzung von Bodenfliesen in einem domestischen und weltlichen Umfeld ermöglichten, wurden durch die Einfuhr von einfarbigen und glasierten Fliesen aus Holland seit dem 14. Jahrhundert beeinflusst. Diese Fliesen waren frei von persönlichen und institutionellen Verbindungen und wurden in einem durchwegs unifornen kariertem Format verlegt.

Die Untersuchung beweist die Bedeutung und den Wert dieses Materials als eine Ressource für die Zukunft und gibt Schilderungen für der Nutzung bei der Ausstellung von Bodenfliesen. Es zeigt die unterschiedlichen Arten von Informationen, welche durch das Studium dieser Artefakte gewonnen werden können und die wahrscheinlich von generellem Interesse für mittel-

terliche Studien sind. Es bietet ausserdem notwendige Daten für informierte Entscheidungen über zukünftige Konservierungsarbeiten and der Wiederverlegung von Bodenfliesen, sowie für Entscheidungen über Muster, Lagerung und Archivierungsrichtlinien.

Das untersuchte Gebiet breitet sich über den gesamten Norden Englands aus, von der Mündung des Humber im Osten und dem Fluss Ribble im Westen hoch bis zur Grenze Schottlands. Die Ansammlungen von mittelalterlichen Bodenfliesen in dieser Region sind eine der reichsten in der Welt. Alle ursprünglichen Materialien in nationalen sowie regionalen Kollektionen, oder wiederverlegt in Böden, wurden in diese Studie einbezogen. Die Arbeit beschränkte sich auf Material, bei dem Ursprungsnachweise zum Teil vorlagen, so dass die Verteilung der verschiedenen Industrien verdeutlicht werden kann. Alle ursprünglichen Materialien kamen von 118 verschiedenen Standorten. Die Beweise für die Herkunft der Materialien, zusammen mit anderen Details der Ansammlungen, werden in einem alphabetischen Verzeichnis der Standorte aufgeführt. Fliesen aus anderen Regionen wurden in diese Studie einbezogen, solange sie von einem Hersteller im Norden Englands kamen. Unter anderen waren darunter Materialien aus dem 13. Jahrhundert von Newbattle Abbey in der Nähe von Edinburgh, und Fliesen aus dem 14. Jahrhundert aus weit voneinander gelegenden Gebieten wie Reedham Church in Norfolk und Dornoch Cathedral im Nordosten Schottlands.

Die Produkte der verschiedenen Werkstätten wurden durch die Variationen in der Herstellung der Fliesen indentifiziert. 35 Fliesengruppen wurden dabei indentifiziert. Das gesamte Material spannte einen Zeitraum vom 13. bis zur Mitte des 16. Jahrhunderts. Über 500 verschiedene Designs und 60 Mosaikanordnungen, welche zu mittelalterlicher Zeit benutzt wurden, sind aus existierenden Ansammlungen und durch Nachforschungen in publizierter Literatur und antiquarischen Aufzeichnungen indentifiziert. Vergleiche wurden innerhalb der untersuchten Region und mit publizierten Ansammlungen aus weiter entfernt gelegenen Gebieten gemacht. Die Studie befasst sich daher mit Veränderungen in dem Design, in der Herstellung, in der Verteilung und in dem Verbrauch dieses bestimmten Artefakts in einem grossen Gebiet und über einen langen Zeitraum.

Übersetzung: Norman Behrend

1 Introduction

Antiquarian collectors of the 19th century were fascinated by the variety and novelty of medieval floor tile designs and they founded many of the surviving collections of these objects. Collectors in the north of England included figures such as John Walbran, John Ward and James Cook. The Marquess of Granby, later Duke of Rutland, amassed a national collection in the earlier 20th century that included much material from northern sites (for details of the collectors and collections, see Chapter 26). In the 1920s and 1930s, the stock of medieval ceramic tiles in the public domain was substantially enlarged when monastic sites that had lain as ruins since the Dissolution of the monasteries in 1536–40 were taken into state care. Excavations carried out at these sites by the Ministry of Works (a predecessor of English Heritage) were essentially programmes of clearance and consolidation intended to make them accessible to the public. Ceramic paving tiles were uncovered at sites all over the country as a result of this work. Survival was found to be particularly good at the less accessible sites in the north of England where, in some cases, spectacular expanses of pavements remained intact. Tiles found discarded in the overburden were taken into storage while those found *in situ* were lifted, the ground levelled, and the tiles re-set for public display. Thus the magnificent mosaic pavements at Byland Abbey and the patterned tiles at Rievaulx Abbey were first exposed to public view 70 or 80 years ago.

The antiquarians were mainly interested in collecting floor tiles and publishing perfected drawings of their designs. They were also interested in identifying the families represented by heraldic designs. The sources for stories or legends illustrated on the tiles were researched, most famously the romances of Tristram and Isolde and Richard Coeur de Lion, depicted on tiles from Chertsey Abbey (Shurlock 1885; Loomis 1916). Other work noted continental parallels and broad regional differences in floor tile design and decorative techniques (see for example, Ward-Perkins 1938). The occasional discovery of a medieval kiln site increased interest in the manufacture of the tiles, but little accurate information was recorded following these discoveries. Consequently, it was often difficult to link the kilns with sites using the tiles (for example, Ward 1892, 119–40).

A major change in floor tile studies was marked by publication of a series of articles in the late 1950s and 1960s detailing the elaborate pavements found intact in the 1930s in the royal apartments of Clarendon Palace (Eames 1958; 1960; 1963; 1965). Not only had surviving documentary sources allowed the tiles to be dated to *c.*1250 but the kiln in which the tiles were made had also been found at Clarendon. The tiled

floors were therefore established as part of a decorative scheme created for Henry III and his French queen, Eleanor of Provence, whom he married in 1236. The connection with France was thought to be strong in terms of both inspiration and workmanship, but the kiln site clearly showed that the tiles had been made in England and were not imported from France. The Clarendon finds raised awareness of the contribution that floor tiles could make to medieval studies when viewed within a contextual framework.

Interest in the manufacture of floor tiles was boosted by excavations of some other kiln sites published in the 1950s and early 1960s, in particular that found at Chertsey (Gardner and Eames 1954) and that excavated first by G.K. (Ken) Beulah and then by Elizabeth Eames at Meaux Abbey, East Yorkshire (Eames 1961). There was a growing realisation, however, that excavations needed to be carried out on a larger scale and with higher standards of recording if discoveries were to be fully understood. During the 1960s and 1970s better archaeological fieldwork techniques were adopted and excavations became increasingly professional operations. Publication of a typology of medieval kiln sites suggested that there might be regional and temporal differences in manufacturing practices and raised questions about the organisation of manufacture of different types of ceramics (Musty 1974). Some important tile kiln sites were excavated, yielding the kind of detailed information that had previously been lacking, in particular at Danbury, Essex (Drury and Pratt 1975), at Lyveden, Northamptonshire (Bryant and Steane 1971; Steane and Bryant 1975) and at Nash Hill, Wiltshire (McCarthy 1976). Experimental work, particularly the reconstruction of a tile kiln found at Norton Priory, Runcorn, Cheshire, helped to explain some archaeological features and to quantify some aspects of production (Greene and Johnson 1978). However, the pressures of rescue excavation carried out in advance of commercial development in the 1970s also meant the loss of a great deal of important information, particularly from larger scale production centres (for example at Chilvers Coton, Nuneaton; Mayes and Scott 1984).

Individual studies of floor tile assemblages led to increasing expertise among a growing band of specialists. These studies established that a wide variety of techniques were used in floor tile manufacture and decoration. The distribution of tiles decorated using a particular technique was acknowledged as a possible indicator of directions of regional interaction (for example, a note on the distribution of tiles with line impressed decoration showed that these were concentrated in the midlands of England and in Wales; Eames and Keen 1972). The potential for broader surveys of

floor tiles was also demonstrated by Elizabeth Eames' presentation of evidence suggesting that floor tiles were rarely used in secular buildings until late in the medieval period (1975).

The value of historical records documenting the use of floor tiles, such as notes in fabric rolls and other building accounts, became more widely recognised with Christopher Norton's study of the floor tiles and associated documentation at Winchester College (Norton 1976). This remains one of the few instances in which extant plain-glazed tiles can be identified as medieval imports from the Netherlands. References in late medieval wills to donations of floor tiles suggested that tile studies might also clarify aspects of medieval patronage (Keen 1972). Interest in the study of floor tiles in the 1970s culminated in seminars held at Cambridge and York in 1978 and 1979, with the proceedings edited by Paul Drury and circulated in 1979 and 1980. As part of these seminars, the Census of Medieval Tiles was set up with the aim of publishing all extant material in the UK in a series of regional studies.

A great deal of what had been learned about medieval floor tiles over the previous hundred or more years was brought into the public domain in 1980, with the publication of the British Museum collection by Elizabeth Eames. This two-volume work not only published a catalogue of all the tile designs and mosaic shapes in the collection, but also gave information about the characteristics of individual tiles, listing their dimensions, some details of the glaze and of any keys cut into the tile bases. In addition, the catalogue assigned many of the tiles to a school or place of manufacture and gave them a date. The text set out the details of different decorative techniques and established a terminology for them. It identified and discussed the characteristics of floor tiles from different parts of the country, creating a typology based partly on changes in technology and partly on stylistic influences. Publication of these volumes was an enormous achievement and they will remain the standard reference work for tile studies for the foreseeable future.

Like most museum collections, that in the British Museum is an eclectic mixture of material from a variety of sources. Its size and scope means that most major schools of tile manufacture are represented to some degree. Inevitably, however, the collection is uneven and study of it cannot result in a comprehensive view for any particular region. For example, the emphasis in the published catalogue was on the decorated floor tiles with minimal coverage of plain-glazed material. This does not reflect the extensive use of plain-glazed tiles in many parts of the country. In addition, the methodological approach to the study was not specifically set out and in some cases the basis upon which the conclusions were reached was unclear. There were difficulties in distinguishing between instances where groupings of tiles were based on the stylistic similarities of their designs and those where the groupings were based on specific details of their

manufacture. The inferences that may be drawn from these two lines of evidence are very different. Stylistic similarities may be generated in a multitude of ways, through people moving about and seeing or hearing about new styles and fashions and by making notes and drawings. However, where use of the same manufacturing methods can be demonstrated, it might be inferred that tiles from different sites were made by the same tiler or the same workshop. If close definition of the products of a workshop were possible, it would be feasible to establish the area over which different workshops operated, how they were organised, what mode of working they adopted and the extent of competition between workshops.

The possibility that floor tiles could be characterised sufficiently closely to identify the products of specific tilers or workshops depends upon variations in the ways in which the tiles were made. Particularly helpful to archaeologists is the method most commonly used in their decoration. Most patterned floor tiles were decorated by means of a wooden block with a design cut out on its surface, which was pushed down on a clay quarry to leave an impression of the design in the clay. If, as was usual, the design on the wooden block was cut out in relief, it would make a depression of that design in reverse on the quarry. Where the outline of the stamp remains clear on archaeological material, the stamp impression can be compared from one tile to another. One design stamp was used to make many tiles, and these might be distributed to a range of sites. Consequently, as long as the design stamp remained the property of a single tiler or workshop, the area or range of sites over which a particular workshop or tiler was operating could be established.

Elizabeth Eames showed that even closer definition could be achieved in some cases. Design stamps were usually made of wood (shown by the impression of the wood grain or chisel marks on some unworn tiles). Sometimes cracks developed across the stamp and these would be replicated on the tile quarry (for an illustration of this, see Stopford 1990b, pl 9). Where cracks developed and grew bigger during the use of the stamp, the sequence of production of the quarries could be ascertained. It was demonstrated that tiles in the priory church at Malvern were made at the same time as those in Gloucester Cathedral, because tiles made with the same stamps were found with and without cracks at both sites (Eames 1980, 1, 238).

If the products of medieval workshops could be identified, there was the potential for tile studies to yield high quality information applicable to broad-based studies of the Middle Ages. An idea of what might be achieved was suggested by a collection of papers published in 1981 on the manufacture of a range of medieval materials (Crossley 1981). Floor tiles were discussed alongside brick and roof tile, as ceramic building materials, rather than in terms of their decorative qualities – the focus of attention for many earlier curators and collectors (Drury 1981).

Paul Drury's paper discussed regional differences in the methods used by medieval tilers and outlined some of the ways in which production and distribution were organised. The organisational models he suggested were: itinerant production in which tilers moved from site to site, settled production by major ecclesiastical or secular landowners or corporations, and settled production by commercial enterprises. Possible examples of the settled modes of production were given, with the distribution of tiles over a 20km radius along waterways in the vicinity of the kilns at Danbury, Essex, compared to the much wider distribution, over 60km or more, from Tyler Hill, Kent, and that over much of the south of England from Penn, Buckinghamshire (Drury 1981, 133–4). These examples showed that there were clear distinctions in the scale of production at different sites, although the comparison was complicated by the existence of some more distant outliers from Danbury (perhaps significantly on a royal site at Windsor Great Park) and by a lack of detailed information about production sites at Tyler Hill or at Penn. Itinerancy had previously been suggested for tilers supplying monastic houses in the north of England on the basis of a comparison of the shapes of the tiles at different sites (Eames and Beulah 1956; Beulah 1979). In another study, tilers working from a settled base in Bordeaux were thought to have become itinerant once demand in the Bordeaux area was filled (Norton 1990). The movement of the tilers was indicated by the replacement of old designs with new ones, at one site after another, along the Garonne valley.

Modes of working were discussed and refined by many scholars (for example Costin 1991) but the broad distinctions outlined by Drury were generally retained. Itinerant working raises the most problems, partly because it cross cuts other distinctions, for example those based on varying degrees of commercialisation. It has proved difficult to find a useful definition of the term. Itinerancy has often been used to describe the activities of master masons engaged on royal works that necessitated their movement around the country (Knoop and Jones 1933; Salzman 1952; Colvin 1963; Harvey 1975). While moving over long distances for their work, the implication is that these prominent figures had homes of their own to which they returned at intervals. As a result the term has connotations of a mode of working relevant to individuals of relatively high economic and social status. The implication is that this type of itinerancy was only likely to be applicable to a relatively small number of people. In contrast, someone who worked at one place for a few years before moving on to another workplace, taking their family with them, might be considered mobile rather than itinerant. The size and composition of orders for floor tiles would have influenced the level of mobility among such tilers, with the largest and most complex orders making it necessary or worthwhile for them to move to the site concerned. In other circumstances, floor tile production may have been carried out intermittently,

combined with other occupations such as farming (Stopford 1993). It would not have been possible to make tiles in very cold or wet weather, and other activities may have been carried out at those times. Tile making may have been dovetailed with activities such as harvesting, or have been integrated with coppicing cycles that necessitated some degree of mobility.

Mobility or itinerancy among tilers can be demonstrated where tiles from a number of sites were produced by the same workshop, using clay from different sources. The tiles would be made using the same manufacturing techniques and design stamps at all sites, but the composition of the clay fabric would vary from site to site. Clearly, the evidence would be strongest where several different kiln sites could be identified. However, advances in techniques for analysing the composition of ceramic fabrics has made it possible to suggest distinctions between clay sources even when kiln sites are not known. Scientific methods using petrological analysis, or the study of the structure of the fabric, were successfully used to identify clay sources for pottery and tiles from a geologically distinctive area of the west midlands (Vince 1977). Techniques focusing on the precise measurement of the chemical composition of ceramic (and other) materials became established during the 1970s (Aspinall 1977). The first of these to be used in floor tile studies was neutron activation analysis (Cherry 1986; Stopford *et al.* 1991). Application of this technique was limited by cost and the need for highly specialised equipment and it was quickly superseded by a cheaper and more viable process, known as Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES). The automation of the ICP process has enabled high numbers of samples to be generated at relatively low cost and this is now the standard scientific method used in analyses of ceramic fabrics.

The ICP technique produces what is, effectively, a fingerprint of the chemical composition of each sample. Statistical methods are then used to cluster the samples, showing how similar they are to one another. Tiles of closely similar composition might be interpreted as coming from the same clay source. Establishing the degree of variability in the composition of clay from a single source is the main difficulty faced when interpreting the results of ICP analyses. Interpretation will clearly be assisted when some of the samples come from a known kiln site. Careful sample selection is crucial. The tiles need to be assigned to workshops on the basis of their external characteristics before the sample for analysis is selected. This helps to ensure that there is a clear idea of what is being compared in the programme of fabric analysis. It is also important to have a reasonable number of samples of each type of material. It is vital to establish accurately the provenance of the material being sampled. Recently excavated finds are, for example, preferable to material from museum collections where provenance may be uncertain.

It can be seen from the above that identifying the products of individual tile workshops can generate much information about the organisation of the medieval tile industry. Where tile workshops can be dated, changes over the course of the medieval period become apparent. Where scientific fabric analysis is also carried out, the use of different clay sources can be identified. In order to be successful and to provide a solid basis for comparison and further interpretation, it is essential that a rigorous methodology is used for characterising the tiles and assigning them to groups. Any links in the manufacture of different tiles must be clearly established and not be confused with broader stylistic comparisons. Using a large assemblage of tiles from a series of floors in the medieval abbey church of Bordesley, Redditch, Worcestershire, comparisons were made between the characteristics of tiles of different dates to find out which attributes showed variability in manufacturing practices (Stopford 1990a; 1993). The methodology devised for this work incorporated the recording categories set out by the Census of Medieval Tiles (appendix to the proceedings of the Cambridge tile seminar of 1978; Drury 1979) and followed methods and terminology used in the study of the British Museum collection (Eames 1980). The outcome was a standardised recording methodology that would allow sufficiently close characterisation of floor tiles to group them, with some confidence, into the products of individual workshops (Stopford 1990b). An effort was made to devise recording methods that were as non-subjective as possible, for example using measurements and comparison charts. This was done in order that assemblages from different areas, studied by different specialists, might eventually be compared. It remains the case, however, that identifying design stamps usually depends upon direct comparisons. Published drawings, often made from a number of tiles, are not reliable for such comparisons.

The approach taken to the study of floor tiles in recent years has been largely archaeological, with more traditional art historical studies confined to establishing design typologies, often used to estimate the date of the material. Work on the tiles excavated at Bordesley Abbey, which had some independent dating evidence, indicated that sequences based on design typologies could offer a general guide to the date of the tiles (Watts and Hirst 1983). Much other work on tile designs has concentrated on heraldic examples, often in an effort to link the tiles with local families and to generate dating evidence. The multiple attributions made over the years for many heraldic designs suggest a need for greater rigour in relation to these identifications. There are several technical reasons that make the identification of heraldry on floor tiles difficult. Most importantly, the design stamp had to be cut to show the design in reverse if it was to be the right way round when impressed on to the tile quarry. Where heraldic designs were symmetrical this was not an issue. Where the design was not symmetrical, a design shown in reverse on the fin-

ished tile might refer to a quite different family than the one intended. The many inscriptions found the wrong way round on tile designs demonstrate that design stamps were quite often mistakenly cut out so that the tile showed the design in reverse. Consequently, asymmetrical heraldic designs cannot be assumed to be the right way round on floor tiles.

Other problems with identifying heraldic designs involve the colours, or tinctures, which are an integral part of coats of arms but which could not be accurately replicated on the tiles. Also, coats of arms were frequently simplified in order to fit them on to a design stamp, and rarely included marks of difference that distinguished between various members or branches of a family. Identifications are usually made by comparison with rolls of arms and representations of heraldry in other media, such as seals, stained glass and funerary monuments. These sources are incomplete as a record of medieval heraldry and not all coats of arms on tiles, even when correctly shown, will be identifiable. Recent publications, particularly the *Dictionary of British Arms* (Chesshyre and Woodcock 1992), have greatly helped with identifications but, perhaps more importantly for studies of floor tiles, they have also emphasised the wide range of possible attributions in almost every case.

The study of heraldic designs on floor tiles nonetheless provides a crucial link between this material and the major patrons or popular figures of the day. Comparisons are possible between periods when such designs were more or less fashionable. The later 13th century is widely acknowledged as the golden era of medieval heraldry, in which the cult of Edward and Eleanor was combined with Arthurian legend, romance, chivalry, pilgrimage and crusading (Wagner 1956, 50; Denholm-Young 1965, 45–54; Brault 1997a, 18–54). Knighthood and all it stood for was symbolised in heraldic arms. Coats of arms were invented for literary and mythical figures, especially those of Arthurian legend – a romance that was heavily promoted by royalty. Heraldry was used to flatter, with the heraldry of real people used in epic romances (Brault 1997a, 19–23; the depiction of Tristram on the Chertsey tiles and elsewhere are thought to have alluded to Henry II). From 1250, heraldry was also increasingly used as a mark of ownership (Marks and Payne 1978, 13).

Despite the undoubted methodological difficulties, and need for specialist input, it can be seen that there is a potentially rich combination of art historical and archaeological information available from studies of floor tiles. The value of results generated from such studies is greatly enhanced by larger scale projects, covering a substantial area or region. They allow the full distribution of the products of workshops, or the range of stylistic influences, to be established. The potential for more extensive studies of the material was demonstrated in 1986 by Christopher Norton. A survey of the dating evidence for the use of two-colour

tiles (tiles made using clays of contrasting colours, usually with a red clay for the quarry and a white clay for the decoration) established that this technique had in all likelihood had its origins in France in the late 12th century, arriving in southern England slightly later, perhaps in the second quarter of the 13th century (Norton 1986b).

A second study looked at the possibility that some floor tile designs were particularly associated with Cistercian monasteries (Norton 1986a). Tiles found at several Cistercian sites had simple linear designs with stylistic similarities to *grisaille* glass. It was suggested that this form of decoration was intended to comply with Cistercian strictures regarding the use of colour and decoration. The possibility that undecorated mosaic tiles (shaped tiles, without patterned decoration, laid in alternating colours) were also a specifically Cistercian form of paving was found to be not proven. This type of tiling is known from several Cistercian sites in northern Britain and a number of studies had suggested that it might be specific to that Order (Eames and Beulah 1956; Tester 1973; Cothren 1982, 228–55; Beulah 1993). Christopher Norton's countrywide survey suggested that, although mosaic tiles were popular with the Cistercians, their use was not confined to such monasteries. In addition, the decorative qualities of mosaic paving may not have complied with the rigorous aesthetic regulation of Cistercian life as decreed by St Bernard and regulated by the General Chapter.

Since publication of the British Museum collection and the formation of the Census of Medieval Tiles, several regional surveys of floor tiles have been achieved. They include some key assemblages from France (Norton 1984a; 1984b; 1992), material from Ireland (Eames and Fanning 1988), south and west Germany (Landgraf 1993), Scotland (Norton 1994) and most recently Wales (Lewis 1999). Several other studies are on-going, in particular in the north-west midlands of England and in East Anglia. The published surveys have succeeded in putting information about the tiles into the public domain, often publishing material whose destruction is threatened by development or through exposure to the elements. They represent an enormous amount of work, particularly in areas or regions that have substantial surviving assemblages. In these studies, and in line with the aims of the Census, the focus has been on producing a catalogue of the material, with less of an emphasis on interpretation and synthesis.

Study of medieval tiles in northern England

The aims of the study of floor tiles in northern England differed to some extent from the Census approach. Like previous surveys the project was intended to create a record of the surviving material. However, a major part of the brief was to demonstrate

what information of general interest to medieval studies could be obtained through studying these artefacts from both archaeological and art historical perspectives. The intention was to establish the significance and importance of the various northern assemblages. This would provide the information necessary for decisions about conservation work on the re-set tiles, and would generate narratives for use in displays of the loose collections.

The project was driven by the enormous collection of floor tiles held by English Heritage. The area covered by the study is shown in Figure 1.1, with the Scottish border as the northern boundary and a southern boundary formed approximately by the line of the Ribble river in the west, and the Humber estuary in the east. In this region, English Heritage hold more than 35,000 mosaic tiles and almost a thousand decorated tiles in storage. In addition there are many thousands more tiles re-set on sites open to the public. Where these tiles have been re-set in or near the positions where they were found, they preserve vital information about where and how floor tiles were used in the medieval period. Of particularly high value are the spectacular expanses of tiling in the church at Byland Abbey, North Yorkshire. This is the only instance where large areas of this type of medieval ceramic mosaic floor tiles can be seen in their original setting. These pavements provide some of the best evidence we have for the layout of this type of flooring. Some extremely rare tiles of later medieval date are also re-set in the cloister at Byland, with others in the church at nearby Rievaulx Abbey. The large numbers of tiles in the English Heritage assemblages made the identification and analysis of several tile workshops feasible.

In order to gain a comprehensive view of extant material from the region, work was not restricted to tiles held by English Heritage but included all extant, provenanced floor tiles from the study area. The most substantial of these assemblages are the tiles in the British Museum, London, and those in the care of the Yorkshire Museum, York. The latter includes material excavated by York Archaeological Trust between 1972 and 1990. Floor tiles are also held in a number of other regional museums and private collections and by several national bodies including Historic Scotland, the National Trust, the Royal Museum of Scotland, the Society of Antiquaries of London and the Victoria and Albert Museum.

Work was not restricted to the decorated and mosaic tile assemblages, but included all extant plain-glazed material. These tiles are often excluded, or only briefly noted, in floor tile surveys, although they represent an important change in both design and the sources of supply of medieval material. Apart from the tiles themselves, the study was based on a thorough search of published literature and antiquarian records. Records and drawings of important 18th- or 19th-century discoveries were found for several sites.



Fig 1.1: The main sites and areas mentioned in the text. The study area was defined by the border between England and Scotland and a line to the south of the rivers Humber and Ribble

Tiles from outside the study area were included where they belonged to workshops that were centred in the north, such as 13th-century material from Newbattle Abbey, near Edinburgh, and 14th-century tiles from as far apart as Reedham Church, Norfolk, and Dornoch Cathedral in north-east Scotland. Reference was made to material from other areas where it related directly to that in northern England, particularly that from the Netherlands, France, Germany and the north-east and north-west midlands of England. However, a detailed synthesis with other regions, involving comparison of results based on differing methodologies, was beyond the scope of the study.

The many thousands of tiles examined and recorded in the course of the project included 507 different designs and 470 different mosaic shapes. Material was provenanced to 116 different sites. In all but 29 cases, tiles were assigned to one of 35 production groups or workshops. In seven of these groups, the tiles were made by a workshop that had supplied several sites in the region, and in some cases outside it. In 27 groups the workshops were represented by smaller numbers of tiles found at only one or two sites. A final group of tiles was broader based, consisting of all the plain-glazed examples. As these tiles are without designs, they can not be characterised as closely as the decorated or mosaic material. Nonetheless, it proved possible to identify the products of several different workshops among these tiles.

Scientific fabric analysis (ICP-AES) of a sample of 153 tiles was carried out at the British Museum Department for Scientific Research by Michael Hughes, with some additional statistical work by Morvan Leese. The sample was selected from the three main 13th-century tile groups (the Plain Mosaic, Inlaid and Usefleet Groups) in order to compare material from known kiln sites with that from user sites. The results are discussed in the text in relation to the relevant tile groups, with the overall results given in Appendix 1. Analysis was restricted to the 13th-century tile groups in order to keep costs down. However, the results suggest that a further study, sampling the late medieval tile groups, would be of considerable value.

Once the tile groups were established and dated as far as was feasible (from the 13th century to the Dissolution of the monasteries in 1536–40), their distributions, design, manufacture and other characteristics were compared. Information was also sought on specific topics, including:

- the sources of supply and availability of floor tiles in different parts of the study area over the medieval period
- the organisation of manufacture and distribution, modes of working or working practices
- changes in technology, innovation in manufacture or design
- the duration of workshops and reasons for their demise

- indications of commercialisation in production, the adoption of strategies to produce more tiles at a reduced cost
- patterns of consumption, in particular the extent of use of tiles at secular and religious sites
- the use of design, heraldry and inscriptions to obtain or express patronage
- overall pavement design and symbolism
- links with other regions.

These themes are discussed in relation to the evidence for each of the tile groups in the chronological survey that forms Chapters 1–8 of this book. Changes suggesting commercialisation might include strategies that speed manufacture, increase capacity or ease transportation. They could also include avoidance of an unnecessary use of raw materials and standardisation, both of the product itself and of manufacturing processes. Changes among consumers' attitudes might be evidenced by the extent of floor tile use at different types of sites, for example in castles and houses, as opposed to monasteries or churches, and by use in ostensibly religious or secular locations within those sites. Any analysis on these lines has to take into account the likelihood of survival of material at the different types of site.

The structure of the book

The book is divided into three parts. The first part (Chapters 1–8), as noted above, is a chronological survey, looking at the topics outlined above over the course of the medieval period. The second part (Chapters 9–25) is prefaced with a brief explanation of the recording methodology and the main terms used and provides the basis for the interpretation in the first eight chapters, setting out the characteristics, analysis and dating of each of the tile groups. The final part (Chapters 26–27) discusses the history of the collections of floor tiles and contains an alphabetically arranged site gazetteer. It details the assemblages and other information from each site and sets out the evidence for the provenance of the tiles. The importance of establishing provenance cannot be over-stressed since, among other things, this is the foundation for establishing the distributions of different groups of tiles. Much in the rest of the study depends upon these distributions.

The drawings of the designs for each tile group are located with their other details in Chapters 9–25. The corpus of design drawings is not, therefore, all placed together but shown where relevant to each group. This was done in order to help define the tile groups, and to enable those looking for comparative material for a particular design to access other characteristics of the tile at the same time. The design drawings form a comprehensive record of material in the study area. Details of the drawing conventions are given in the introduction to Chapter 9.

In the case of two tile groups (the Nottinghamshire Group and the Dieppe/Sussex Group; tile group nos 15 and 20), the tiles in the north of England are outliers of distributions centred outside the study area. Design assemblages for these groups have been published elsewhere (Whitcomb 1956; Norton 1993a). Examples found in the study area have been recorded and are included here as for all the other groups. In the case of the Nottinghamshire Group, all Whitcomb's drawings have also been re-printed as her publication is no longer easily available. They have been enlarged to a scale of 1:3 in line with what is now the established convention for tile design drawings. The full corpus of designs for the Dieppe/Sussex Group has not been re-printed. Only the designs shown in the study area are reproduced.

Where tile groups include shaped tiles, the mosaic shapes are illustrated with the tile groups unless they have already been published by the British Museum (Eames 1980, 2, S.1–S.328). For ease of comparison with the design drawings, these shapes have been reproduced at a scale of 1:3.

Other illustrations located in Chapters 9–25 include antiquarian drawings that form an important record of the tiles, photographs of examples of each of the larger groups or specific aspects of manufacture and, where relevant, drawings of mosaic arrangements (i.e. the layouts of flooring made using shaped tiles).

Plans and figures showing the tiles that remain on sites in the study area are in Chapter 27, with the relevant site entry in the gazetteer. Additional antiquarian drawings are also included here. In the case of the most elaborate areas of Plain Mosaic paving at Byland, scaled photo-montages have been created using rectified photographs of the floor and line drawings of the stonework. These and some photographs indicating the extent and visual force of Plain Mosaic are located near the beginning of Chapter 2.

The various numbering systems used to record the tile designs, mosaic shapes and arrangements are outlined here but explained in more detail in the introduction to the recording methodology in Chapter 9. The 34 tile groups (plus plain-glazed) were identified by numbers, but names were also given and are used in the text, particularly for the largest groups. These are simply labels, used instead of the group numbers because they are more memorable. A summary of the names and dating of the main tile groups is given in Table 1.1. A table listing numbers, names and dates of all the tile groups is given in Chapter 9 (Table 9.1).

The designs of each tile group are numbered as extensions of the group number (i.e. 1.1 for design 1 of Group 1). In the case of the Nottinghamshire and Dieppe/Sussex Groups, the design numbers used in the original publications have been retained, prefixed with Wh/ for Whitcomb 1956 or N/ for Norton 1993a.

Other numbering series are mosaic shape numbers and mosaic arrangement numbers, both of which follow (and follow on from) that established by Elizabeth Eames for the British Museum collection (1980, 2). The shape numbers are prefixed with 'S'. The British Museum mosaic arrangements are identified by Roman numerals. For ease of use, these have been converted to Arabic and prefixed with 'M'.

The archive

The project archive is held by English Heritage in North Yorkshire, and consists of a database of tiles in the loose collection and a photographic record of the material re-set on site. Each of the decorated tiles in the English Heritage collection has a unique number. The tiles are marked with this number and stored in number order. This means that individual decorated tiles are retrievable and can be accessed for study or

Table 1.1: Dating summary for the largest tile groups

	1200	1250	1300	1350	1400	1450	1500	1550
Plain Mosaic	---	-----	----					
Inlaid		-----						
Usefleet		---	-----	---				
Decorated Mosaic		---	-----	----				
Nottinghamshire			---	-----	----			
Non-standard Plain-glazed			-----	-----	-----	-----	-----	-----
Standard Plain-glazed				-----	-----	-----	-----	-----
Transpennine						-----	-----	
Huby/Percy							-----	-----

display. The design and group numbers on the database were revised in the text at the publication stage. A concordance with the original number sequences (those on the database) is given in Appendix 2. However, it was not feasible, in the space available, to identify tiles individually in all sections of the published text.

Tiles in collections other than those held by English Heritage were recorded in so far as was possible, depending on whether the material was set in a display or not. Museum accession numbers are given in Chapter 27 (Gazetteer) where they were available.

The photographic record of tiles re-set on sites in the study area was created with English Heritage's Photogrammetric Survey team. The areas of tiling were cleaned of algae, grit and weeds, and any turf over the tiles was cut back. Rectified photography was used to create a scaled record (for details of the technique, see Andrews 1995). The tiles were dampened before being photographed and colour film was used in order to be able to distinguish between worn and dark coloured tiles. About one square metre of tiles was

recorded in each photograph. Most of this work was done in the first phase of the project (1987–1990) and this record was not digital. The negatives of this photographic record are stored in optimum conditions at the National Monuments Record, Swindon. A set of colour prints is included in the archive held in Yorkshire. In some cases, the prints were used to make up photo-montages of the areas of tiles and these have been mounted onto boards for display purposes. The rest of the prints are in ring binders, with a plan of each site marking the location of the tiles in each photograph. The archive also includes all the original plans and drawings used in the publication.

The results from the ICP-AES analysis form a large table which is not reproduced here. However, a full set of the results is deposited with the original records of the project, including correspondence and any remaining sample powder, in the British Museum, Department of Scientific Research and Conservation, file envelope no. 6019. A duplicate copy of the data relating to the analysis has also been deposited with English Heritage.

2 A view of the world.

Plain Mosaic floor tiles and the Cistercians, c.1220–1270

Plain Mosaic tiles were made in two contrasting colours, yellow and dark green or dark brown, with panels or blocks of abstract patterns formed through the arrangement of tiles of different shapes and colours in the floor (see, for example, Figs 2.1–2.4). A feature of Plain Mosaic was the insertion of the tiles into the vertical plane of steps (tiles used in this way are known as ‘risers’) and the original colours are often well preserved on such examples (Figs 2.5–2.6). The arrangements of Plain Mosaic tiles frequently involved the use of square tiles but more complex shapes were also made (see Chapter 10, Figs 10.1–10.3). One roundel arrangement – a circular pattern of shaped tiles, measuring c.2m in diameter – was found at all sites with good-sized assemblages (M.65; Fig 10.6; also shown in Figs 2.1, 2.2 and 2.4). Additional and more complex roundels were made at Meaux Abbey, where the whole assemblage was more varied and included the only figurative mosaic (M.90 of two birds or doves; Figs 10.4, 10.10–10.13). A small number of patterned tiles were also made by the Plain Mosaic tilers (Fig 10.15). The full definition and composition of the Plain Mosaic Group, with a complete set of illustrations of the

arrangements, tile shapes and designs, can be found in Chapter 10 (Figs 10.1–10.15). Additional illustrations of Plain Mosaic tiling, photographed during excavation, when re-set or as recorded by antiquarians, are either shown here (Figs 2.1–2.6; paving at Byland Abbey), in Chapter 10 (Fig 10.17 for Byland and Fig 10.18 for Gisborough), or are in Chapter 27 with the gazetteer entries for Byland Abbey (Figs 27.4–27.6), Ellerton Priory (Fig 27.7), Fountains Abbey (Figs 27.8, 27.13–17), Louth (Fig 27.21), Meaux Abbey (Figs 27.24–27.26), Newbattle Abbey (Fig 27.47–27.52) and Rievaulx Abbey (Fig 27.33, Fig 27.35 and Fig 27.36, which is with the entry for Rievaulx Terrace).

Manufacture of the Plain Mosaic Group is dated approximately to the period 1220–1270. The dating evidence for the tiles at each site is given in Chapter 27 and that for the whole group is discussed in Chapter 10.

The distribution of Plain Mosaic tiles, shown in Figure 2.7, extended from Newbattle Abbey, near Edinburgh in Scotland, to Thornton Abbey near the Humber, and possibly to Louth in Lincolnshire.

Table 2.1: Sites where Plain Mosaic tiling was either made or was in first use

<i>Provenance certain</i>	<i>Denomination</i>	<i>Foundation date and founder</i>
Byland Abbey	Cistercian monks	1177; Mowbray
Fountains Abbey	Cistercian monks	1132; Thurston, Archbishop of York
Gisborough Priory	Augustinian canons	1119; Brus
Meaux Abbey	Cistercian monks	1151; Gros
North Grange kiln, Meaux Abbey	Cistercian	–
Newbattle Abbey	Cistercian monks	1140; King David I
Rievaulx Abbey	Cistercian monks	1131; Espec*
Sawley Abbey	Cistercian monks	1147; Percy
Thornton Abbey	Augustinian canons	1139; Gros
*Espec had previously founded the Augustinian house of Kirkham in 1122.		
<i>Provenance probable</i>	<i>Denomination</i>	<i>Foundation date and founder</i>
Ellerton Priory, Selby	Gilbertine canons	1207; FitzPeter
Helmsley Castle	Espec/ Roos family	–
Newminster Abbey	Cistercian monks	1138; Merlay
Wether Cote kiln, Rievaulx Abbey	Cistercian	–
York Minster	secular canons	627
<i>Provenance possible</i>	<i>Denomination</i>	<i>Foundation date and founder</i>
Brinkburn Priory	Augustinian canons	by 1135
Easby Abbey	Premonstratensian canons	1107; Roald
Keldholme Priory	Cistercian nuns	by 1135; Stuteville
Laskill Farm	Cistercian grange (Rievaulx)	–
Louth (medieval context unknown but possibly Louth Park Abbey)	Cistercian monks	1139; Bishop of Lincoln
Selby (medieval context unknown but possible transshipment point)	–	–

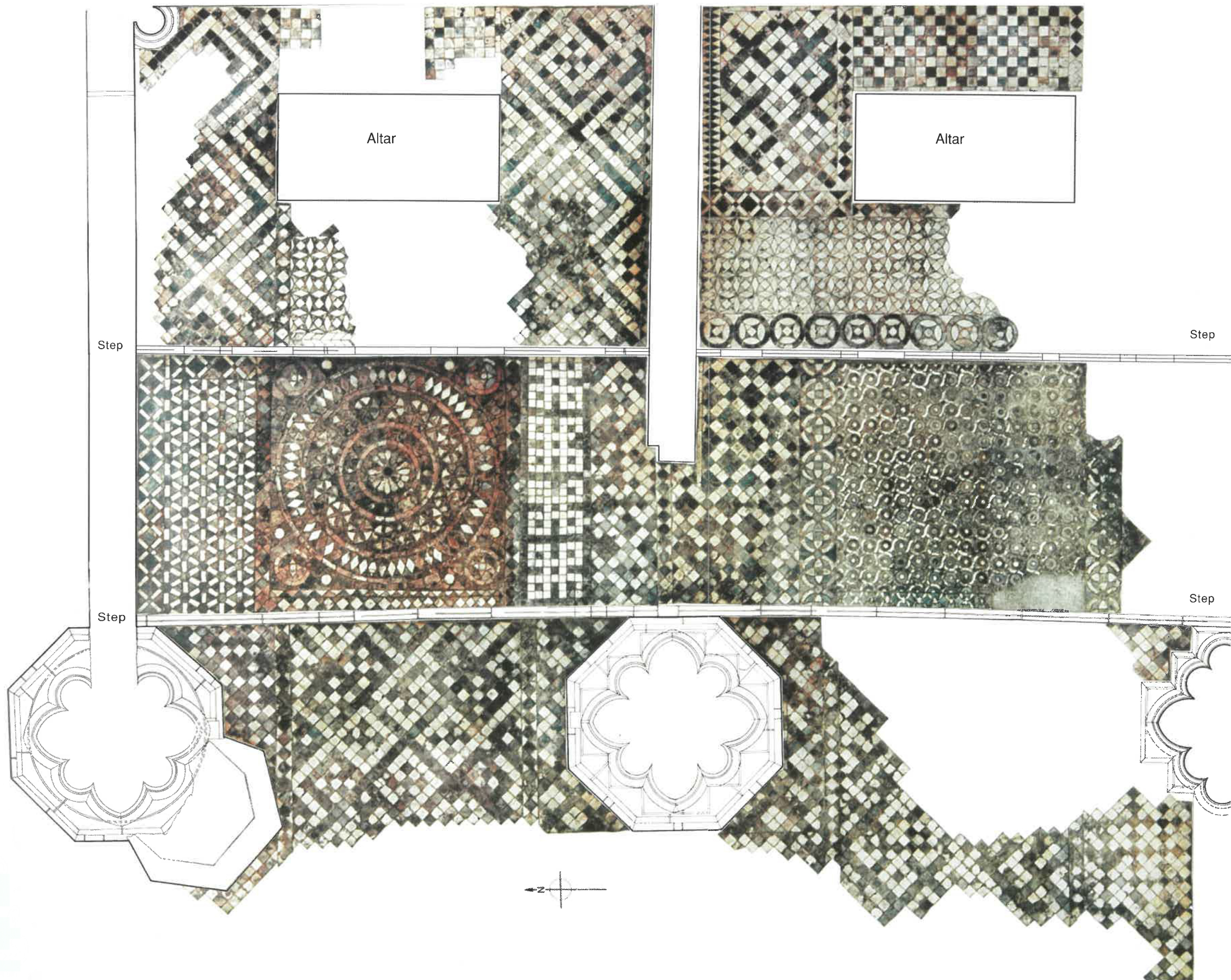


Fig 2.1: Plain Mosaic in Byland Abbey church, the south transept chapels looking east. The most elaborate surviving area of medieval ceramic mosaic flooring. Rectified photo-montage with the stonework outlined.
Scale c. 1:25

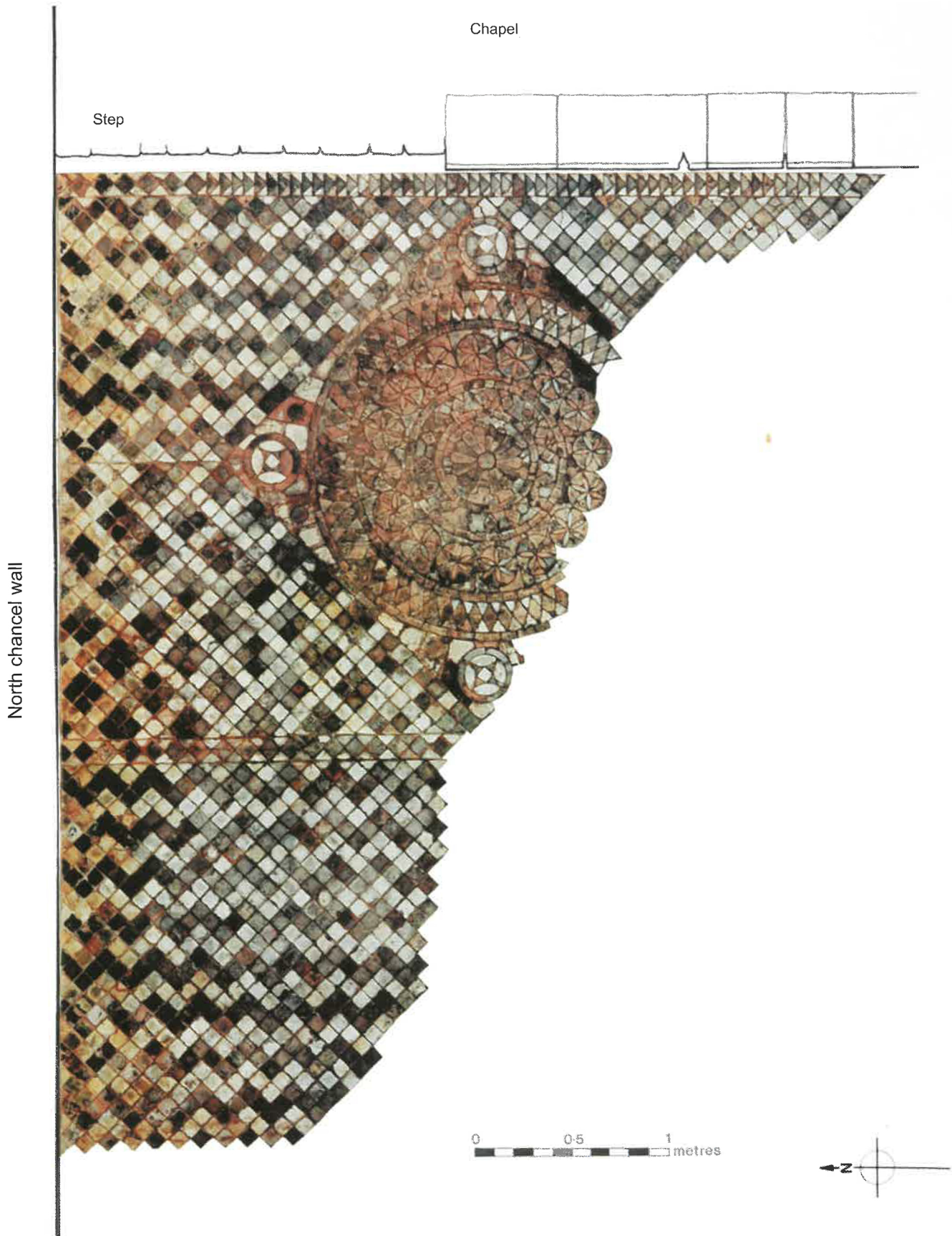


Fig 2.2: Plain Mosaic in Byland Abbey church, the north-east chancel looking east showing part of an M.65 roundel (now worn, but still clearly in colours reversed from that in Fig 2.1), also M.4, M.87, M.105 and M.112. Rectified photo-montage with the stonework outlined

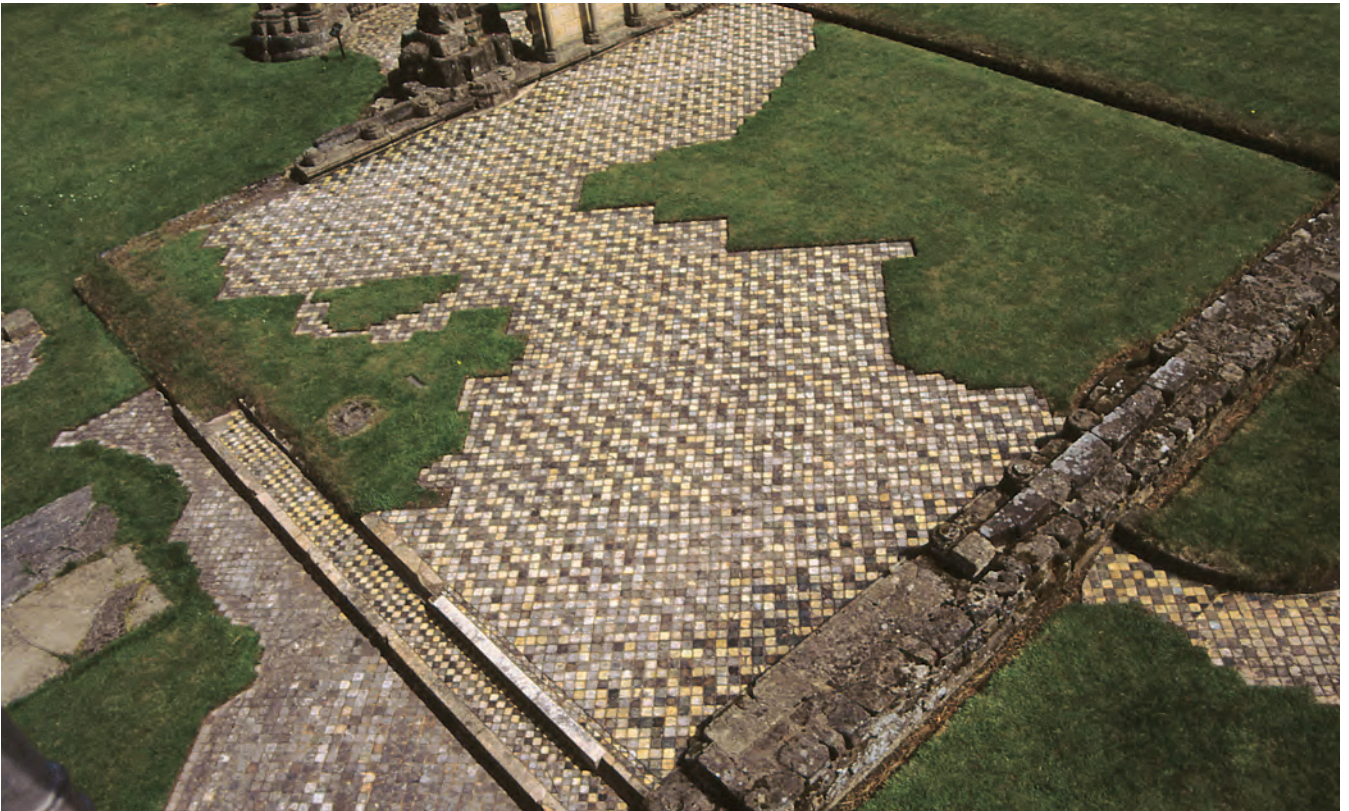


Fig 2.3: Plain Mosaic in Byland Abbey church: the presbytery paved with the repeating chevrons of mosaic M.112 and on the step a reduced-scale version of the chequered arrangement M.23. The arrangement of the tiles below the steps on the left of the picture was not discernible



Fig 2.4: Plain Mosaic in Byland Abbey church, the south transept chapels looking south, photographed after the tiles were re-set



Fig 2.5: Plain Mosaic in Byland Abbey church, south transept chapels: tiles of M.37 set as step risers (north chapel, step E on Fig 27.3). These unworn tiles give an idea of how the Plain Mosaic pavements would have looked when newly laid



Fig 2.6: Plain Mosaic in Byland Abbey church, presbytery: tiles of M.96 and M.97 set as step risers with some of their original colour (steps B and C on Fig 27.3)

This is a distance of about 350km as the crow flies and these tiles are some of the most widely distributed examples made in the north of England in the medieval period. Table 2.1 shows that at least seventeen of a possible total of twenty sites were monastic, and twelve of those were of the Cistercian Order. This includes two kiln (production) sites, one at North Grange, a property of Meaux Abbey (Eames 1961) and the other at Wether Cote, a property of Rievaulx Abbey (Stopford 2000). Another site, Laskill Farm, was a grange of Rievaulx located on the route between the kiln at Wether Cote and the abbey precinct. The grange may have been involved in the transport and/or storage of tiles made at Wether Cote and used in the church at Rievaulx. Of the monastic sites, all but York Minster were reformed monasteries. Three of the non-Cistercian reformed orders were Augustinian. Other possible recipients were Gilbertine and

Premonstratensian houses. The castle at Helmsley was the only non-monastic site thought to have had these tiles. For all details and discussion of provenance, see site entries in Chapter 27.

Similarities in the physical attributes of Plain Mosaic tiles at all sites with reasonably large samples showed that they were made by the same tilers, or at least by tilers working within the same workshop tradition (for details, see Chapter 10). The Plain Mosaic assemblages from the various sites divided into three overlapping sub-groups (A–C):

- A. Byland, Helmsley, Rievaulx and, with some differences, Gisborough
- B. Fountains and Newbattle
- C. Meaux Abbey and perhaps several sites with small extant samples such as Newminster Abbey, Thornton Abbey and York Minster.

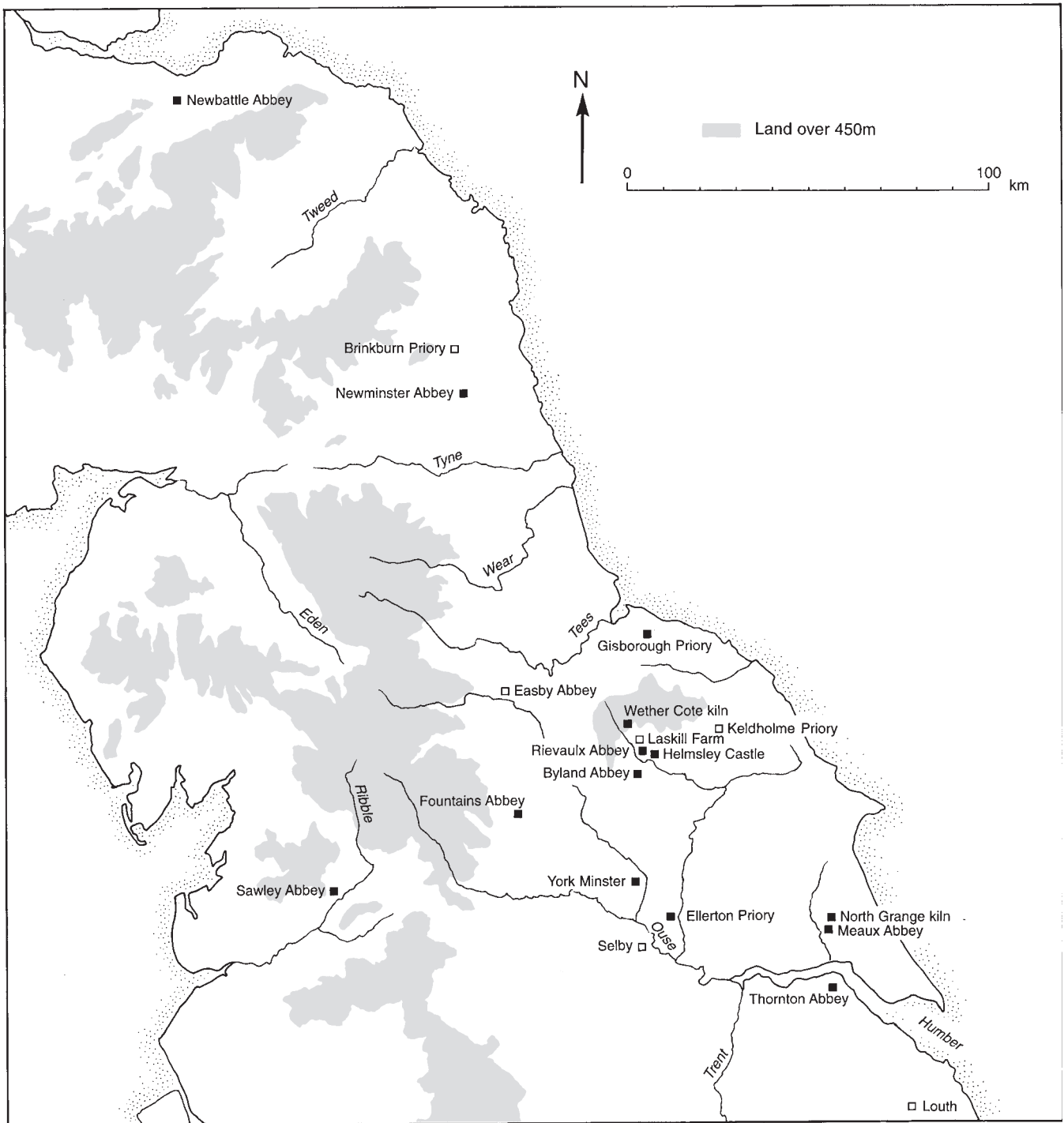


Fig 2.7: Sites with tiles of the Plain Mosaic Group. The solid symbols indicate sites that either certainly or probably had Plain Mosaic tiles. The open symbols show sites that may have had Plain Mosaic tiles

Tiles in sub-groups A and B shared some of the most diagnostic manufacturing characteristics and were thought to be the products of the same tilers. The tiles at Meaux, and other sites in sub-group C, were made within the same tradition, and might have involved the same tilers. However, such close links in manufacture could not be demonstrated in these cases because the extant assemblages were smaller, comparatively badly worn and/or less accessible. The information on Plain Mosaic at Sawley Abbey was also limited through wear and assemblage size and, although the

tile shapes and arrangements used at that site were the same as those found elsewhere, no precise links in manufacture could be demonstrated.

Some of these differences may be explained by the dating evidence. The tiles in sub-group A may have been supplied earlier in the life of the workshop, perhaps first at Byland (this site has the most restrained assemblage) and then at Rievaulx, perhaps *c.*1235. Fountains, in sub-group B, was probably supplied by 1250 and Meaux, in group C, by 1270. The tiles of group C could, therefore, have been made by a different generation of tilers.

The context for Plain Mosaic floors

Building works, links between tilers and masons

The immediate circumstances prompting the production of Plain Mosaic at several, perhaps most, sites were major monastic building or renovation programmes. At Byland, the stonework for the internal steps in the nave, south transept and presbytery was specially cut to take Plain Mosaic tiles in the vertical and horizontal faces of steps (Fig 27.6). Although the paving at this site could have been part of the first construction of the abbey church in stone, it is more likely to have been part of a second phase of work, fitting out the interior of the church. At Rievaulx, a few Plain Mosaic risers survive in the south transept chapels (Areas A, B and C on Fig 27.31 and Fig 27.35). The south transept at Rievaulx was re-built as part of a large-scale reconstruction of the east end of the church in the second quarter of the 13th century (Fergusson and Harrison 1999, 151–74). At Fountains, any medieval relationship between the tiles and the stonework has not survived. Antiquarian re-use of this site meant that the tiles were re-set or removed at an early date. However a documentary reference to building work during the abbacy of John of Kent, 1220–1247, associated the installation of a ‘painted pavement’ with the ‘new work’ (*Memorials I*; see entry 29 for Fountains, in Chapter 27, the Gazetteer). This reference seems likely to refer to the addition of Plain Mosaic paving to the enlarged east end of the church. The tiled floor was again part of a major phase of construction. At Meaux, the chronicle recorded that the floor of the church was tiled during the abbacy of William of Driffild (ninth abbot, 1249–1269; see entry 61, Chapter 27: *Meaux Abbey*). Renovation of the church, with the addition of a decorated wooden ceiling and the roofing of the bell tower with lead, was among other work noted as occurring at this time. One explanation for the absence of Plain Mosaic at the Cistercian abbeys of Kirkstall and Roche, is that they were not carrying out substantial building works at this period.

The scale and complexity of Plain Mosaic flooring suggests that it was intended to play a major role in the overall design of the abbey church interiors. The Plain Mosaic pavements were more substantial than any subsequent ceramic flooring in the region, sometimes covering almost the entire monastic church, sometimes covering the eastern part. At Byland, the surviving areas of re-set tiles show that the ambulatory, the monks’ choir, the transepts, the south transept chapels and the crossing were paved with Plain Mosaic (Fig 27.3; the authenticity of re-set paving at this and other sites is discussed under *Public Ownership* in the brief history of collecting in Chapter 26). Some small extant areas of tiling also suggest that one bay west of the rood screen was paved. There is no evidence for tiling in the

rest of the nave, in the five chapels of the east end, on the high altar platform or in the north transept chapels. The nave chapels are paved with Plain Mosaic but the simplified layout here might suggest re-setting at a later date.

At Rievaulx the re-set tiles are also thought to represent their layout at the suppression of the monastery (see entry 74, Chapter 27: *Rievaulx Abbey*). The Plain Mosaic tiles are in the east end of the church (Fig 27.31). Plain Mosaic may have been supplemented with, or replaced by, Usefleet tiles in the north transept at a later date (Fig 27.34). It is possible that the nave chapels were paved with Plain Mosaic in the 13th century but the stonework and mix of tile types in these locations show that there were many alterations to the chapels during the medieval period. As at Byland, it appears that Plain Mosaic was not used in the nave of the church.

At Fountains, the location of many of the re-set tiles in the church is probably not a reliable indicator of medieval use. The documentary reference for the use of Plain Mosaic in the east end of the church is supported by Plain Mosaic tiles found set in medieval mortar in chapels in both the north and south transepts, and by the areas of mortar bedding and pieces of intact Plain Mosaic tiling uncovered during excavations in the south transept and south crossing aisle in 1979 (Fig 27.17; Gilyard Beer and Coppack 1986). The photographs and plans of this area show mortar impressions and examples of c.80mm square tiles. The only tiles of this size in the large extant assemblage from the excavations are of Plain Mosaic type. Tiles of larger size and later date found in this area were associated with disturbances through medieval burials, repair works, antiquarian diggings and other alterations, including slots for modern lighting cables. What evidence there is for the location of Plain Mosaic tiling at Fountains might, then, confine it to the eastern end of the church, as is thought to be the case at Byland and Rievaulx. However, the antiquarians who worked at Fountains in the 19th and early 20th centuries thought Plain Mosaic tiles were also used in the nave. Antiquarian references, noted in the Site Gazetteer entry, also suggested that tiles of this type were laid in the chapter house.

Better evidence for Plain Mosaic paving extending throughout an abbey church comes from Meaux (see Fig 27.23). In particular, a strip of coherently arranged Plain Mosaic tiling was found *in situ* by G.K. Beulah in the body of the nave, one bay from the west end of the church (Area P on Fig 27.23). This may have been protected by the screen at the western entrance to the laybrothers’ choir when the tiles on either side were removed at the suppression. A second substantial area of Plain Mosaic tiling was found *in situ* in the north crossing aisle (Area D in Fig 27.23; Fig 27.25). Plain Mosaic tiles were also found either *in situ* or disturbed but believed to be near their original locations at various places in the body of the nave and in the east end

of the church (Figs 27.24, 27.26; see entry 61, Chapter 27). No examples were found *in situ* in the nave aisles, which may not have been paved. It is possible that the eastern arms of monastic churches, including the transepts and transept chapels, were tiled in the earlier Plain Mosaic schemes, with tiling of the naves beginning at a later date.

The massive extent of these pavements cannot be exaggerated. As the scales in the relevant site plans show, the abbey churches were enormous buildings. The coherence and complexity of the layout of the Plain Mosaic floors is evidenced by the surviving areas of paving and by antiquarian records of earlier discoveries. They formed part of the grand scheme of church renovation and extension in the 13th century. The way Plain Mosaic was integrated into the stone fittings of the buildings at Byland, Rievaulx and probably other sites, suggested that there were close links between the tilers and masons. An association between the tilers and masons working at Rievaulx was also indicated by the location of the tilery on a grange at Wether Cote. This site, *c.*9km away from and *c.*150m higher up than the abbey, was located next to one of the monastery's stone quarries (Stopford 2000).

Stylistic parallels and symbolism

In general, an architectural influence was apparent in Plain Mosaic design, particularly among the assemblage from Meaux, which dates to the third quarter of the 13th century (see M.73/74, M.75, M.76/77 and M.78 in Figs 10.10–10.13). Some pieces might be compared to the tracery for rose windows (for example, the corner piece of roundel M.76; Harrison and Barker 1987, 134–51). The influence of architecture on other crafts is a feature of Gothic design, and not particular to Plain Mosaic tiling. Rose window patterns, for example, are also known on slip decorated tiles of *c.*1255 at Westminster chapter house (Binski 1995, 29, pls 28–33). Hints of an association between stone working and tile making in the north might suggest that this was partly a consequence of the close links between craftsmen working in different materials at this period.

Few direct stylistic parallels were found to northern Plain Mosaic. Contemporary workshops making mosaic tiling existed in southern England (for example Norton 1986a; Medway mosaic) but this material did not compare closely with that from the north in either style or manufacturing characteristics. The closest parallel was of much later date, at Warden Abbey, Bedfordshire (Baker 1982; 1987; 1993). This early 14th-century paving included several areas with similarities to Plain Mosaic, particularly to the M.65 roundel, which might be seen as the signature arrangement of the tile group (see Chapter 10), and the arcing patterns of some of the Meaux roundels.

Outside the British Isles, the closest stylistic parallels to the Plain Mosaic M.65 roundel was found among material from Germany (for example, Kier

1970, pls 162–221; Landgraf 1993, 104–7, figs 58–61). Perhaps the closest similarity was with the flooring at the Cistercian house of Eberbach (Landgraf 1993, 83, fig 55). Wheel arrangements of shaped tiles, with concentric bands of triangular tiles forming a type of sun motif, were popular at the sites of a variety of different monastic denominations in south and west Germany. The suggested date for the ceramic examples of these roundels was the first third or second quarter of the 13th century, but examples in stone were dated to the 12th century.

Comparable material from France was identified and discussed by Christopher Norton (1984a; 1986b). Again, no exact parallels to Plain Mosaic were found but some of the assemblages had similar shapes or, occasionally, a similar arrangement. The most direct parallels were with Mosaic 36 (from the Cistercian nunnery of Maubisson, Val d'Oise, Norton 1986b, 278, fig 20; from Saint-Ouen, Rouen, Norton 1984a, 62, pl 9; 1986a, 231 and pl 105; and in *opus sectile* in the crypt of Rouen cathedral, pl 5, p.60). Also there were tiles of lozenge and star shapes, similar to S.110 and S.170, from La Sauve Majeure Abbey, Gironde (Norton 1984a, 62, pl 8). Technological parallels between English Plain Mosaic and material in France have also been noted at St-Pierre-sur-Dives, Calvados, where the unusual method of decoration termed reverse inlay was extensively used (Knight and Keen 1977, 72). This technique – and variants of it – was occasionally used on Plain Mosaic tiles (see Chapter 10 and Fig 10.19). The dating evidence available at present suggests broad contemporaneity with Plain Mosaic in northern England.

Pavements of earlier date that can be compared directly with the layout of Plain Mosaic flooring were found in other materials. Although the interlace of the great circular designs of some Italian Cosmatesque pavements was absent in Plain Mosaic, there were the same blocks of repetitive geometric shapes and the same large roundels flanked by four smaller circular arrangements (Glass 1980, 25–39; Guidobaldi 1984). The dating of Cosmatesque paving is problematic. The floors are generally thought to be of the 12th or 13th centuries but the closest dating evidence for specific floors tends to be of later rather than earlier date.

Closer stylistic similarities can be found between Plain Mosaic and antique *opus sectile* floors and tapestries. The arrangements of some rectangular blocks of Plain Mosaic shapes replicate Byzantine *opus sectile* paving exactly (Fig 2.8). The *opus sectile* floor of *c.*1070 in the abbey of Monte Cassino included roundels with satellite circles, blocks of zigzag, trellis, chequers, lozenges and triangles of opposing colours, all of which are seen in Plain Mosaic.

The most detailed interpretation of the significance of non-figurative mosaic paving of this type has been made by Richard Foster (1991) in relation to the Cosmatesque floor of *c.*1269 in Westminster Abbey. This floor is a rare example of such work in England.

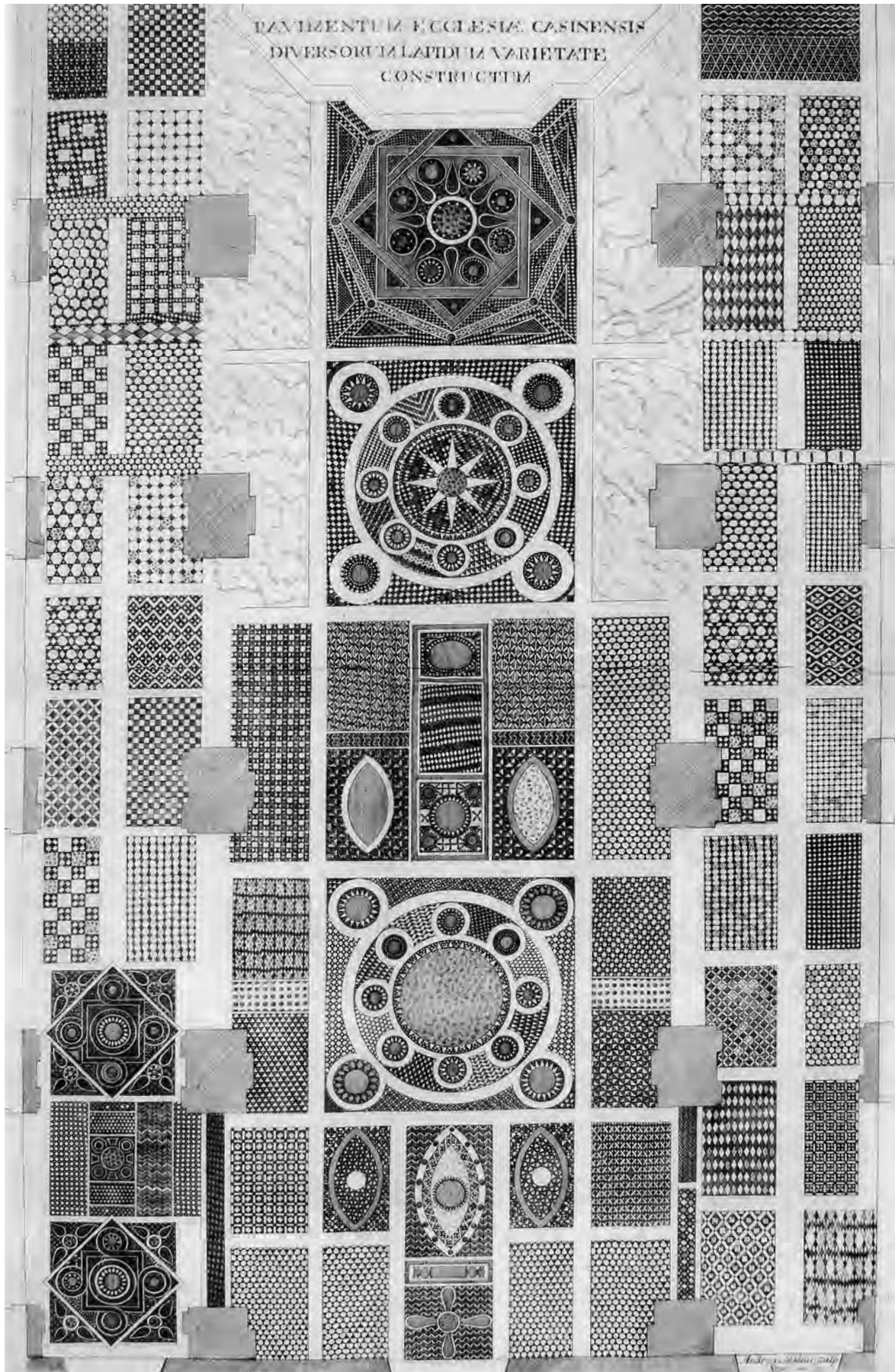


Fig 2.8: *Opus sectile pavement at the abbey of Monte Cassino, c.1070 (from Foster 1991; reproduced by permission of the Syndics of Cambridge University Library)*

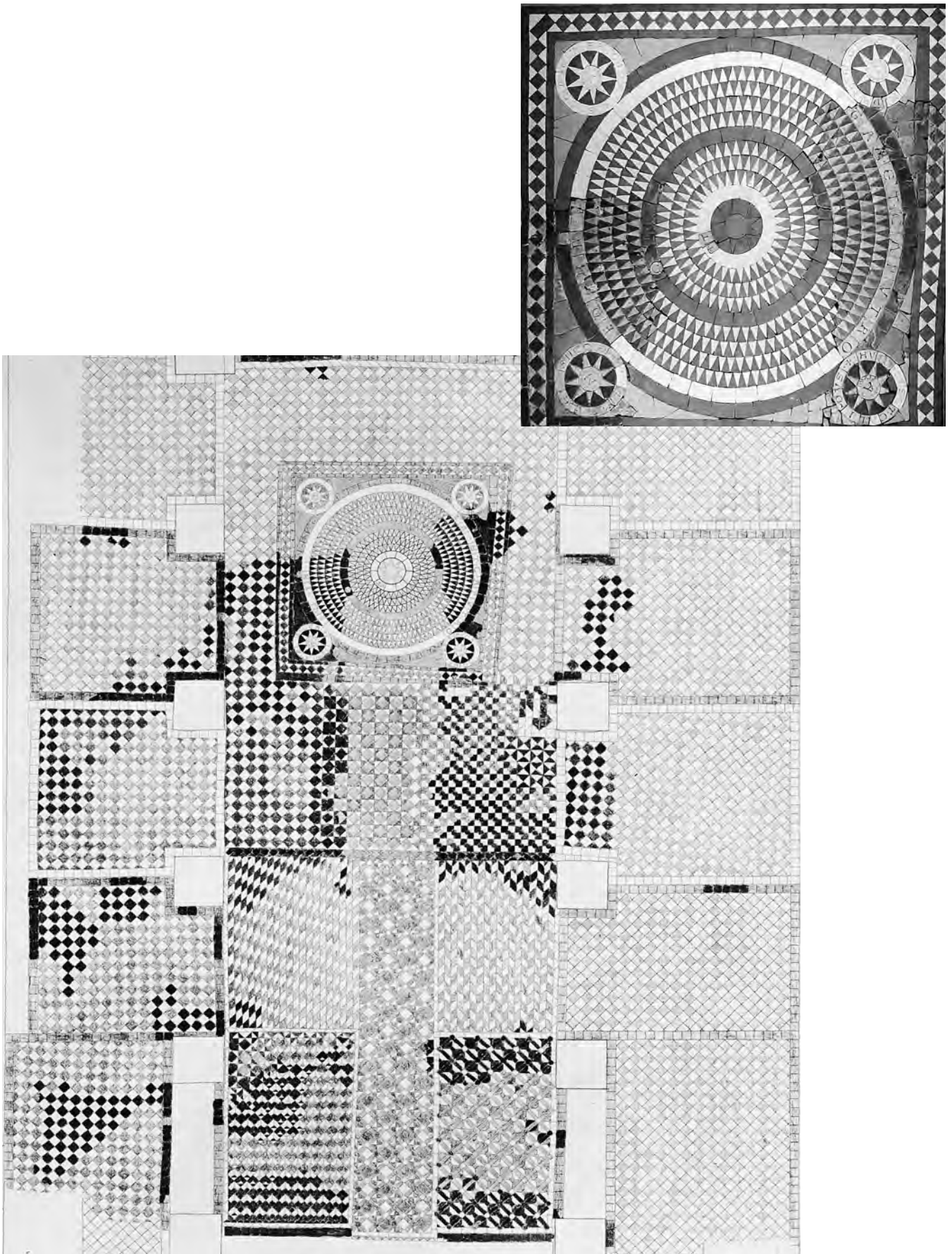


Fig 2.9: Plan of the Oberpleis floor and detail. The inscription on the tiles of the satellite circles in the inset is reproduced on p.18, with missing sections in brackets. (H. Merian, Schnütgen Museum). Reproduced by permission of Rheinisches Bildarchiv Köln

[A	TERRA, AVTVMNVS, MELANCOLIA	SICCA ET FRIGIDA]
D	[QVA, HIEMS,]FLEG[MA]	[FRIGIDA ET HVM]ID[A]
A	AER, VER, SANGVIS	HVMI[DVS E]T C[A]LIDVS
M	IGNIS, ESTAS, COLERA	[CA]LIDA E[T] SICCA

Foster suggested that the Westminster pavement was a theological representation of the world, incorporating contemporary interests in astronomy, geometry and numerology. In 12th-century England these interests had been stimulated by renewed access to the works of the ancient Greek writers via Spain, southern Italy, Antioch and the Arab world (discussed for example by Southern 1986, 85–90). For Foster, the Westminster pavement was designed as a contemplative aid in which the medieval observer would find a multitude of cosmological meanings – the pavement was literally a world view. The evidence cited to support this interpretation of the Westminster floor included the pavement’s inscription, its geometrical configuration, the medieval symbolism of quadrature and its location in the sanctuary of the abbey.

Supporting Foster’s interpretation of the Westminster floor is a relatively little known inscribed ceramic pavement found during restoration work at the parish church of Oberpleis, near Siegburg in the Rhineland in 1974 (Schmitz-Ehmke 1975, 120–3; Joliet 1979). The layout of this floor was similar to that of *opus sectile* and Plain Mosaic, with blocks of repeating geometric shapes and a large roundel, set in a square frame, with four small circles in each of the spandrels (Fig 2.9). The pavement included an inscription. That of the small satellite circles has been read as shown above (missing parts in brackets).

The letters in the centre of the satellite circles – ADAM – are Hebrew for Earth, and were sometimes written at the points of the compass in the Middle Ages. Further inscribed tiles in successive rings listed the elements, seasons and temperaments and the physical states. Inscribed tiles in the large central roundel were not understood. The pavement was thought to date to a building phase of c.1220–30 and was therefore of similar date to Plain Mosaic in north-east Britain.

Similarities in the style and configuration of *opus sectile* and Cosmatesque work, Plain Mosaic flooring and the Oberpleis pavement, might suggest that Plain Mosaic pavements were also an expression of the relationship between man and the cosmos. This would indicate local knowledge of continental and Byzantine learning. It is, however, difficult to say how specifically the themes discussed by Foster in relation to Westminster, and indicated by the inscription at Oberpleis, were also expressed in Plain Mosaic. Inscribed tiles from Meaux of designs 1.19–1.24 were thought to belong to the Plain Mosaic series but were relatively late in date in this tradition (after c.1250) and have not yet been understood. The interpretation of Plain Mosaic flooring as representing a contemporary world view therefore rests upon the layout of the tiles.

Clearly this layout could be interpreted in a more generalised way. Circular and other repeating geometric patterns might, for example, be seen as universal expressions of continuity and eternity, while abstract, non-figurative designs and closely fitting geometric shapes might often be used to suggest the order, grandeur and solemnity of the universe. The use of simple shapes to make apparently complex arrangements can promote meditation in many different contexts and it is the case that very different cultural traditions have adopted such symbolisms. Structures on decoration were, for instance, a feature of both Islamic and Cistercian law, both perhaps inspired by the same wish for an environment that would promote prayer and contemplation. Broad stylistic parallels can be seen in some of the continuous repeating patterns of Islamic wall tiles and Plain Mosaic arrangements. Examples from such a variety of settings show the wide appeal of designs formed from repetitive geometric shapes.

How far the layout of Plain Mosaic floors had any liturgical significance also remains uncertain. Particular arrangements were found in particular areas of the churches. The repeating chevron arrangement in the presbytery at Byland may have been intended as a subdued setting for the spiritual glory of the high altar (Fig 2.3). Roundels and panels of repeating patterns may have marked the entrances and spaces around chapels. It was notable that the roundels were by far the most worn tiles at Byland (see Figs 2.1 and 2.2), as if they were the most used areas during services. There was nothing to suggest that extra wear on the roundel tiles was a result of differences in their manufacture or firing. The tiling in the passage ways or areas used by monks moving around the church were often divided into ‘lanes’, with single lines of tiles of a different arrangement used to divide up the overall pattern (sometimes the same arrangements as those used in step risers). The divisions of the paving into lanes in the aisles may have been a practical decision in a building devoted to ceremonial activities which, much of the time, would have been performed in near darkness. One explanation for the absence of these lanes or divider lines in the north presbytery aisle at Byland is that this part of the church was less well used – the monks entering the church either from the cloister or the night stairs, both on the south side.

The organisation of manufacture and extent of mobility

Study of the physical characteristics of the floor tiles showed that the same tilers made Plain Mosaic tiles for different sites. In some cases manufacture was carried

out on Cistercian granges. The two known tile kilns, at Wether Cote and North Grange, were located on lands owned respectively by the abbeys of Rievaulx and Meaux. The possibility of production at other Cistercian monasteries was suggested by the results of ICP analysis of the clay fabrics of a small sample of tiles from each site and from both the known kiln sites (see Chapter 10 and Appendix 1 for details). The ICP analysis confirmed that there was a close match in the chemical composition of tiles from the known kiln sites and the Cistercian abbeys that owned them. The fabrics of the tiles from other Cistercian sites clustered separately, particularly at Byland, Newbattle, Sawley and Newminster.

On analogy with North Grange and Wether Cote, Cistercian sites with distinct fabrics might be presumed to have had their own kiln sites. The fabrics of tiles from Byland, for example, formed a distinct cluster. Ownership of a tiliary by Byland by 1197 was suggested in the abbey's chronicle (see entry 70, Chapter 27, *Old Byland*). A separate tiliary might similarly be proposed for Sawley, Fountains and perhaps also for both Newbattle and Newminster. The location of the kilns that made the Newbattle and Newminster tiles were not, however, thought likely to be local to those sites. Located respectively in Lothian, near Edinburgh, and north of Newcastle in Northumberland, these sites were thought to be too far away to have clays with such a similar chemical make-up to places in North Yorkshire. Manufacture in Scotland was particularly unlikely given the very different geological history of that region and J.S. Richardson's note that white clay, essential to the production of yellow glazed tiles, was not found in Scotland (1929, 287). The white clay on tiles from Newbattle was of good quality and similar to that on tiles known to have been made in Yorkshire, where white clay was available. Richardson also felt that there were no definite wasters at Newbattle (1929, 287) although some of the extant tiles from Newbattle were damaged in firing, with cracking and a slightly blown fabric, and showed no signs of wear. It is conceivable that they were part of a large consignment of material and not discarded until the pavement was laid (see further Norton 1994, fns 27 and 39).

In contrast to at least some of the Cistercian sites, tiles from the Augustinian monasteries of Gisborough and Thornton did not cluster separately in the ICP analysis. The chemical make-up of some of these tiles was the same as those known to have been made at North Grange and used at Meaux. Thornton tiles which do not cluster with Meaux tended to cluster with the sample from Fountains. Both Gisborough, in Teeside, and Thornton, in North Lincolnshire, are sufficiently far away from the Yorkshire sites to assume that their local clay sources would differ in chemical make-up from those in the York area. It seems more likely that the tiles for the Augustinian sites were made using clay sources near the Cistercian abbeys. The fabric of some of the York Minster tiles was similar to examples from

Fountains and it was thought that the tiles for both sites were made from clays in the same locality.

The fabrics of the tiles sampled from Helmsley Castle were similar to those made under the auspices of Rievaulx at Wether Cote but were not identical. As these sites were only c.3km apart, it was unclear whether or not this indicated a separate clay source.

The physical characteristics of the tiles, together with the ICP results, therefore showed that the same tilers moved between several different sites, including a number of Cistercian abbeys. It is possible that some Cistercian clay sources were used to make tiles for distant Cistercian sites and for non-Cistercian sites. It should be stressed, however, that this interpretation of the ICP results was not entirely straight forward (see further, Chapter 10) and the absence of demonstrable manufacturing links between Meaux and Gisborough might be thought surprising given the similarity in the clay used, which was chemically identical in several cases. Despite this, the ability of the ICP technique to identify accurately individual clay sources is not in doubt. It was supported here by the discrete clustering of the tiles from Cistercian sites and by the close clustering of tiles that are either known, or strongly suspected, to have been made from particular clay sources. It was notable also that there was a contrast between the results of ICP analysis of Plain Mosaic tiles and that of tiles sampled from other 13th-century tile groups (the Inlaid and Usefleet Groups). While the Plain Mosaic tended to cluster by site, the Inlaid and Usefleet tiles tended to cluster together regardless of site, suggesting that they had been made from the same clay source (see Chapter 3; note that the Gisborough tiles clustered separately).

The proposed chronology for Plain Mosaic tiling suggests that manufacture for other denominations became more frequent after the initial phase of production. How far the tilers actually moved is difficult to judge. It is possible that the number of moves and the distances covered were not as great as might first be thought. If the tiles for the farther-flung sites were made in the Yorkshire area, as suggested by the ICP results, the tilers might have manufactured all the Plain Mosaic tiles within an area of perhaps a 70km radius of York. The dating for the series also demands that the moves made by the tilers were spread over a long period. The evidence from experimental work suggests that the manufacture and construction of the substantial Plain Mosaic pavements for each site would have taken several years to complete (for example, see Greene and Johnson 1978). The number of moves made by any single individual could, therefore, have been relatively small, with the tilers based at each of the manufacturing monasteries for a number of years. However, if one or more tilers did accompany the delivery of Plain Mosaic to other sites they would have travelled considerable distances. Given the complications of some of the arrangements it seems likely that Plain Mosaic tiles were laid by the people who made

them – or at least under the direction of someone involved in their production. Supervising the construction of pavements in the various monastic churches would have involved travelling hundreds of kilometres up and down the east coast.

The scale of manufacture

In contrast to the huge expanse of the Plain Mosaic paving schemes, the evidence suggests that the manufacture of the tiles did not operate on a massive scale, and that some of the methods used were chosen despite being highly time-consuming. Plain Mosaic formed the first phase of paving at the sites where it was used. The paving covered the eastern parts of the abbey churches in the earlier cases, with the whole church, apart from the nave aisles, being paved on some later sites. Using dimensions from Byland Abbey, and a rate of 80 small square tiles per square metre of tiling, it can be estimated that about 200,000 tiles would be needed to pave a whole church, while *c.*130,000 would be needed to pave the eastern part. Larger numbers of tiles would be used for the more intricate arrangements.

The size and structure of the kilns excavated at Meaux, the results from experimental firings elsewhere and the methods used and care taken in preparing Plain Mosaic tiles, all suggested that the tiles were made and fired in relatively small batches and that production for each site would have taken several years. Preparation of tiles for firing involved a high number of manufacturing steps. Clay samples from the kiln site at Wether Cote showed that the clay used for the tiles was cleaned of larger stones and other material and that quartz sand was added. The prepared clay was rolled out. The layer of white clay, if used, was applied next. The tile shapes were marked out, possibly using twine. The tiles were cut out by hand probably using a knife. If the shape being made had convex sides, these were trimmed from top to bottom several times, forming a series of planes. If concave, they appear to have been cut in one movement with the knife held at right angles to the tile. All shapes were cut to give a slight angle from top to bottom. The tiles were marked and cut out with considerable accuracy and consequently they fit together extremely closely on the ground. The medieval mortar on loose examples comes about half way up the tile sides, showing that mortar joints would not have been visible between the tiles in the complete pavements. Marking-out lines are only rarely visible on the finished tiles because they were cut exactly along these lines (Fig 10.20). A key was scooped out of the base of each of the small square tiles, unless these were to be scored for splitting into triangles after firing. A few of the shaped tiles were marked on one of their sides to identify them more easily and some of the triangular tiles, scored and split from square quarries, were cut three times – once half-way through the fabric, then right through the fabric on each of the diagonals (Figs 10.21–10.22).

Two different glazes were prepared, one for the yellow tiles and another for the dark green tiles. Removable shelving may have been used in the kilns to accommodate the shaped tiles, which could not be stacked on their sides like square tiles (Eames 1961, 157–60). All these processes were carried out carefully and skilfully. Despite the need for very large numbers of these tiles, each batch would have taken a considerable amount of time to make.

Other evidence for the relatively small scale or slow pace of Plain Mosaic manufacture was suggested by the results of excavations of kilns at North Grange, Meaux, a field survey and study of stray finds from the kiln site at Wether Cote and experimental work done at Norton Priory, Cheshire. Several kilns had been in use at Meaux, built successively on the same spot within a moated enclosure of *c.*40m diameter (Eames 1961). Both roof and floor tiles were made there. Several kilns may also have been built at Wether Cote and, again, it is thought that both floor and roof tiles were produced at this site (Stopford 2000). Little remained of the structure of the earliest kiln excavated at Meaux, which was thought to have fired Plain Mosaic floor tiles, but the dimensions of all the kilns were generally similar to those found at Clarendon Palace and Chertsey Abbey (Eames 1980, 1, 29; 1988, 128–9; Gardner and Eames 1954, 30–1 and pl IX). Nothing was left of the oven structure at Clarendon but the internal dimensions of the oven (i.e. the part that would have been stacked with tiles for firing) at Chertsey were 1.35 × 1.1m. This was slightly larger than the 1.1 × 0.9m internal measurements of the oven of an experimental kiln, modelled on an early 14th-century example, built at Norton Priory (Greene and Johnson 1978).

It was found that the experimental kiln at Norton held an optimum load of about 750 tiles per firing. Its medieval counterpart was thought to have been used to make tiles to cover an area of *c.*500m². Eighty tiles were required per square metre of flooring at Norton, with 40,000 tiles calculated as the requirement overall. It was found that one tile could be made every five minutes. The approximate accuracy of this as an estimate of full-time production is supported by records indicating that a Roman tiler turned out *c.*200 (i.e. perhaps twice as many) roof tiles a day, which did not involve the use of white clay or glaze (Betts 1985, 157). In the experiments at Norton, the tiles took one week to dry and each firing took about 14 hours. It would have taken 54 firings to produce the requisite number of tiles for the pavement in the priory church. It was established that, in practice, firing would have been restricted to the summer months, with one firing a week possible given good organisation and fine weather. One firing a week during the summer months has, however, been thought an over-estimate for 13th-century potters (McCarthy and Brooks 1988, 46). At Norton it was suggested that the required tiles would have taken two years to make, possibly being laid in the church during the winter.

On the basis of the figures from this experimental work, the manufacture of Plain Mosaic for the whole of the east end of a monastic church would have taken several years for each site. If two years was needed to make 40,000 tiles for Norton, three times as long may have been required to make enough tiles to pave the east end of Byland. This presumes, possibly incorrectly, that the tilers were working full-time on floor tile production and were not involved in religious services or other activities such as roof tile production. It also presumes that only one kiln was in use at a time. This is in line with the excavations at Meaux but it has yet to be established at Wether Cote. Other factors which may influence these calculations include the possibility that the Plain Mosaic kilns were of larger capacity than that at Norton. However, structural remains at Meaux suggested that removable shelves were used to support shaped tiles in the kiln, reducing the number of these tiles that could be fired at any one time (Eames 1961, 157–60). The relatively small scale of the individual batches of tiles is further supported by the size of some of the equipment used. Mortars found at North Grange, Wether Cote, and at some kiln sites outside the study area, are interpreted as having been used for breaking down lead oxide for the glaze (Eames and Beulah 1956, pl II; Eames 1961, 163–6 and pl XXVII, C; Lewis 1976, 8; for comparison of examples from different sites, see Stopford 2000). These thick-walled containers measure *c.*150mm across at the rim and stand *c.*130–150mm high. It seems certain that production of Plain Mosaic was carried out on a small scale over a long period of time.

A seignorial mode of production in the monastic domain

The small scale of manufacture of this material, despite the vast quantities of tiles needed for the monastic floors, might be seen as characteristic of the mode of production operated by the monasteries. A further characteristic of such production could be the generous use of raw materials, reflecting a confident attitude towards the accessibility of materials and management of the landscape. The depth of Plain Mosaic tiles varied widely but averaged at *c.*35mm, using much more clay than 14th and 15th century examples imported to the region. It is possible that an attempt was made to reduce the weight of the Plain Mosaic tiles supplied to some sites. The thinnest, and therefore lightest, tiles were those made for Newminster Abbey in Northumberland (depth 12–27mm). However, those at the greatest distance from Yorkshire, at Newbattle in Scotland, were of average depth for the group (34–37mm). Outside the study area, it is notable that some 13th-century floor tiles made under royal patronage were also unusually deep. The tiles laid in Westminster Abbey chapter house had a depth of 36–47mm (Eames 1980, 1, 172). The thickness of the white clay used on Plain Mosaic quarries also varied

but was deeper than that found on tiles of a later date, reaching 5mm in extreme cases.

Another feature of the production of Plain Mosaic was the lack of standardisation of the material. Differences in the depth of tiles from various sites have been noted. The size of individual shapes also varied. For instance, the small squares, used at every site, measured 70–75mm across at Byland and Rievaulx, but 80–90mm at Fountains. Tiles of the trellis mosaic (M.24) also occurred in various sizes at different sites. Comparison of the make-up of the M.65 roundels showed that these were rarely replicated exactly from site to site (discussed in Chapter 10; Figs 10.6–10.9, 10.18).

The layout of Plain Mosaic paving was also broadly similar at all sites but with variation in the detail. The M.65 roundels were often set below steps leading up to altars in the transept chapels (for example at Byland, Newbattle, Rievaulx and Sawley) but could be placed either in the body of the transept or actually in the chapels. At Meaux, the location of the M.65 roundels is not known but the more elaborate roundels were thought to be located at intervals along the east–west axis of the church (Fig 27.23). The number and width of the east–west divisions or ‘lanes’ in the Plain Mosaic floors varied. In the church at Byland the east–west lanes measured almost 2m across (Fig 27.3), those at Meaux were *c.*1m across (Fig 27.23; Areas L, M, N and P), while those uncovered in the excavations at Fountains were *c.*1.5m (Fig 27.17). The Plain Mosaic paving in the south transept chapels at Rievaulx showed that, although there were overall similarities with Byland, the placement of mosaic arrangements varied (Tables 10.10–10.13).

Although the Plain Mosaic floors seem to have followed the same general principles at many sites there was no fixed plan or standardisation. Plain Mosaic shapes, arrangements and their placement in the finished floor were drawn or marked out anew each time they were made, even though the same layouts were used time and again. This variation occurred despite the fact that some of the tilers’ equipment was used to make tiles for more than one site. For example, the tiles of designs 1.13 and 1.15 were probably made with the same stamps for Meaux, Newbattle and York Minster.

The mis-match between the scale of demand and that of supply, the lack of standardisation and liberal use of resources are all thought to indicate that commercial constraints were not important factors in the production of this tile series. Rather, these features, and the high quality of Plain Mosaic work, indicated that production was conducted under the auspices of a major patron and within the structure of a substantial organisation.

Plain Mosaic and the Cistercians

The distribution of the Plain Mosaic tile group showed that this paving was particularly popular at Cistercian sites, although it was also used elsewhere (at the

Augustinian monasteries of Gisborough and Thornton, the Gilbertine site of Ellerton, at York Minster, Helmsley Castle and possibly some other sites; see Table 2.1 and Fig 2.7). The dating evidence, such as it is, also suggested that Plain Mosaic paving was first designed for use in a Cistercian monastic church, possibly Byland. It has been seen that the manufacture of Plain Mosaic was carried out on Cistercian granges in at least some cases, and it is possible that Plain Mosaic tiles at some non-Cistercian sites were made on Cistercian sites. The undoubted popularity of Plain Mosaic among the Cistercian houses in the study area and the organisation of production within the Cistercian system suggested that, in north-east England, Plain Mosaic floors may have been viewed as a specifically Cistercian type of paving.

Decorative restraint as advocated by St Bernard was a basic precept of Cistercian ideology (Norton 1986a, 228–55 and 315–93). Statutes and directives issued by the General Chapter against decoration in Cistercian flooring described inappropriate pavements as featuring *levitas*, *curiositas* and *varietas*, as opposed to the Cistercian requirement for *maturitas*, *simplicitas* and *paupertas*. The first specific criticism of flooring was made in a statute of 1205 and objections continued until about 1235 when they became formulaic. These injunctions were, therefore, contemporary with the early use of Plain Mosaic. The type of paving criticised is not known.

The composition of some of the Plain Mosaic assemblages might suggest that a deliberate attempt was made to avoid certain types of decoration at the Cistercian sites supplied in the first phase of manufacture. The very few tiles with simple two-colour designs found at all sites, including Byland, demonstrated that the Plain Mosaic tilers were quite capable of making inlaid patterns but that for the most part they did not make them (for details, see Chapter 10). In contrast, the assemblage from the Augustinian priory of Gisborough had a much higher proportion of tiles with two-colour decoration, including many of the tiles used in the M.65 roundels (Fig 10.18). Greater variety, with various types of decoration, was found among the Plain Mosaic tiles made in the third quarter of the 13th century for Meaux Abbey.

The ability of the tilers to make inlaid patterns but their rarity at the Cistercian sites supplied in the first phase of production might indicate that the tilers' repertoire was restricted to suit the ideologies of their customers. Comparison with the Cosmatesque floor at Westminster suggested other ways in which the early phases of Plain Mosaic paving could have been viewed as appropriate to a regime shunning riches and display and embracing manual labour. The range of colours used in the stone and glass of the Cosmatesque pavement at Westminster included reds, blues, greens and purples. Plain Mosaic tiles were made in two colours (yellow and dark green/brown). It is possible that in the 13th century these were the nearest technically feasible

equivalents to black and white. Yellow was often thought of as half-white or under-white in the medieval period (Pastoureau 1996, 339–40). In heraldry it belonged to the same colour group as white, and yellow and white could not be used together. Essentially, Plain Mosaic floors might be interpreted as being made up by alternating *light* and *dark* tiles rather than tiles of specific colours. This was perhaps reflected in the number of Plain Mosaic arrangements made in two versions in which the light and dark coloured tiles were reversed (it is possible that all arrangements were made in two versions; see Chapter 10).

The sumptuousness of the Cosmatesque floor at Westminster was further emphasised by analyses carried out on some of the glass used in its make up. This was not re-used material but was obtained through widespread and distant supply sources (Foster 1991, 35–42). Precious materials were apposite in the Westminster floor, which was a coronation church competing for prestige with other national churches. Richard Foster argued for the particular significance of some of the materials used; for example, for the imperial references in purple porphyry. Plain Mosaic tiles, on the other hand, were fashioned almost entirely from the lowliest of materials: locally dug clay, sand and water. These base constituents were transformed by fire and labour into objects fit to grace the sanctuaries of monastic churches. The transformation of such components through hard work might be seen to accord with Cistercian precepts regarding poverty, restraint and, above all, the spirituality of labour.

Of all visible expressions of Cistercian ideology, the monastic buildings, particularly the abbey churches, were the strongest statement made by the Order to the outside world. Alongside food production, the building of the monastic church was the great physical challenge facing the brethren in the early years of their foundations, and was something in which the first generation of Cistercian monks may have actively taken part. Abbots of several Cistercian monasteries in north-east England (Meaux, Newminster and Kirkstall) were said to have participated in construction work (France 1998, 200). The process of constructing these buildings must have held great symbolic importance. Labour relating to these building campaigns, including tile-making, may for long have been symbolic of Cistercian ideology both within the Order and outside it.

In some cases the tilers are known to have been monks. A 13th-century Cistercian monk-tiler is known from the abbey of Les Dunes in Flanders, where the kiln site was located at the monastery's grange of Bogaerde (France 1998, 201). Another Cistercian monk-tiler is known from the General Chapter's criticism of the abbot of Beaubec, Normandy, in 1210. The abbot apparently allowed one of his monks to spend a long time making unsuitable pavements for people who were not of the Order (Norton 1986a, 230). The monk was in future only to work for the Cistercians and to make pavements that accorded with Cistercian ideals.

The ideal of manual labour as part of the daily lives of the religious was largely abandoned by the 13th century, although the spiritual benefit of labour continued to be recognised (Holdsworth 1973, 59–76). The additional liturgical services brought in during the late 12th and early 13th centuries are thought to have been possible only through a reduction in manual work by the monks (Lekai 1977, 248–60). The practicalities of tile-making would have been unsuited to the strict routine of the religious unless special dispensations were made. At Rievaulx, for example, the involvement of monks in designing the floors or laying the tiles would not have presented any problems, but involvement in making the tiles 9km away and over steep terrain could not easily have been combined with attendance at services in the abbey church. The kiln master would have had to be present at the kiln site for long periods when firing was under way.

The large numbers of laybrothers at houses like Fountains and Rievaulx show that much of the labour requirement of the monks was carried out by proxy. However, direct evidence for the involvement of laybrothers or hired hands in tile manufacture in north-east England is almost non-existent. It is possible that the few decorated tiles included in the Plain Mosaic assemblages from all sites were instances where the wishes or instructions of the monastic hierarchy were being ignored. The single lozenge-shaped tile with a reverse-inlaid deer (design 1.4) found at Rievaulx is perhaps the most likely example of subversion.

Regional relationships

Ordinances issued from 1173 by the Cistercian General Chapter acknowledged that overtly commercial activity within the Order was a problem and this may have been at the heart of the criticism of the tile-making activities at Beaubec. Directives from the General Chapter emphasised that the work of monks should be limited to the needs of the monastery rather than being for profit and that no abbey should demand revenues from another (Hill 1968, 152; Newman 1996, 48). The manufacture of tiles on Cistercian granges for use at non-Cistercian sites might suggest that these directives were being disobeyed in Yorkshire. However, relationships between the Cistercians and their neighbours at a regional level might provide an alternative explanation for the supply of this paving to the non-Cistercian sites.

Although disputes over rights between monasteries in the study area are prominent in documentary records, close co-operation between these institutions in practical matters is suggested by the evidence on the ground. For example, the drainage and reclamation scheme carried out by the Cistercians at Byland included the extension of Long Beck to feed the fish pond and mill belonging to the Augustinian canons at Newburgh. This must have followed from negotiation and agreement (McDonnell and Everest 1965, 32–9).

Similar co-operation regarding rights of way must have existed between Augustinian Thornton and Cistercian Meaux. In lieu of a vow to crusade, the founder of Meaux, William of Albemarle, gave a house at Hedon for the use of monks passing into Lincolnshire and a licence to operate a ferry at Paull in *c.*1154 (Bond 1866, I, 88; translated by G.K. Beulah). As the land across the Humber from Hedon was the property of Thornton Abbey, some on-going mutual arrangement again seems likely.

The aspirations of many of the reformed orders are less well documented than those of the Cistercians but may have been comparable with them in the early years. All the reformed orders were, for example, thought to have subscribed to the principle of artistic aestheticism (Rudolph 1987, 1–45). The orders of regular canons, particularly the Augustinians, Gilbertines and Premonstratensians, modelled themselves most closely on the Cistercians (Fergusson 1984, 108). Close links between the Cistercians and other orders were suggested by the absorption of Savigny by the Cistercians in 1147. A complex relationship existed between the Cistercians and Augustinians in Yorkshire, described by S.E. Rigold as a ‘benevolent symbiosis’ (1968, 331). What amounted to ‘a deed of confraternity’ was agreed between Rievaulx and Kirkham in *c.*1140. The duration of this association may be reflected in the seals of Augustinian Kirkham which, in the later 13th century, accorded with Cistercian practice by not including a personal name (Clay 1928, 8–11).

English Cistercian houses were isolated from their continental brethren during the early phases of Plain Mosaic manufacture. It is possible that this led to a more localised interpretation of Cistercian thinking than formerly and enabled greater emphasis to be given to relationships within the region. Nicola Coldstream has suggested that architectural changes became more insular and regionalised at this time, although they nonetheless retained a Cistercian ‘demeanour ... or habit of thought’ (Coldstream 1986, 139; see also Fergusson 1984, 107). There was extensive interaction between different monastic institutions following phases of construction work in the study area (Fergusson 1984, 108–9; 1986, 177). A regionally defined northern English school has also been suggested in relation to the 12th- and 13th-century production and collection of manuscripts (Lawrence 1995, 145–53). This was most clearly identifiable in relation to Augustinian houses but similar practices were thought to have been followed by other reformed monasteries in the region.

The evidence for some level of mutual esteem and practical co-operation among the various orders no doubt existed alongside a competitive element, since all foundations would have been seeking local sponsorship. In three cases, Cistercian and Augustinian houses in the study area were founded by the same patrons. Kirkham Priory and Rievaulx Abbey were both founded by Walter Espec; Byland Abbey and Newburgh Priory

Table 2.2: Affiliations between Cistercian sites (sites with Plain Mosaic are in bold)

<i>Mother-house</i>	<i>Daughter-house</i>
Fountains	Newminster , Kirkstall, Meaux
Newminster	Sawley , Roche
Rievaulx	Melrose, Warden
Melrose	Holm Cultram, Newbattle
Byland	Jervaulx

were founded by Roger Mowbray; Meaux Abbey and Thornton Priory were founded by William Gros. Helmsley Castle, located *c.*3km from Rievaulx, was the stronghold of Espec's descendants. The supply and use of Plain Mosaic at non-Cistercian sites might be seen in the context of power-broking and politics: affiliations with patrons, relationships between monasteries and with other major institutions in the region.

In contrast, there is little evidence for Plain Mosaic occurring specifically on sites affiliated within the Cistercian mother-daughter system (see Table 2.2). Among Cistercian houses with Plain Mosaic, the monks of Byland came originally from the Savigny house at Furness, affiliated via Cîteaux. The monks at Rievaulx were from Clairvaux. Those at Fountains were affiliated via Clairvaux, the monks having come from the Benedictine house of St Mary's, York. Any allegiances between Byland, Fountains and Rievaulx were not, therefore, formed via a common mother institution, but rather developed on the ground. The daughter houses that followed their mother houses in having Plain Mosaic tiles were Sawley, Newminster and Meaux. Six other daughter houses did not have Plain Mosaic floors. All the daughter houses apart from Roche did get substantial tile pavements, but these were of different manufacture and later date.

The monasteries in the north that appeared not to have had Plain Mosaic paving included several Cistercian houses. To the west of the Pennines there was no evidence for Plain Mosaic other than at Sawley Abbey. This included the Cistercian houses of

Furness, Holm Cultram and Calder. Similarly, the smaller and poorer houses of all types, such as nunneries and dependencies, rarely had Plain Mosaic floors (although the Cistercian nunnery at Keldholme had a 'tessellated' floor of some sort; see entry 53, Chapter 27). The Cistercian abbeys east of the Pennines without Plain Mosaic were Kirkstall, Jervaulx and Roche. Plain Mosaic was absent, as far as is known, from all the substantial Benedictine houses in the region, including Tynemouth, Durham, Whitby, York and Selby. It was also absent from the minsters at Howden, Ripon and Beverley. Some of these sites acquired tiles of later 13th-century types (as at Whitby and St Mary's, York). Some, like Selby, Howden and Ripon, may never have had tiled floors.

The location and layout of Plain Mosaic floors, and features of their manufacture, suggested that the first major medieval tiled floors laid in the north of England were emblematic or symbolic of early principles of the Cistercian Order. Comparison of this type of tiling with material elsewhere also suggested that their overall design was a specific regional adaptation that incorporated internationally recognised symbols of learning and knowledge. However, access to the material by individual sites was probably determined by local factors. There is little doubt that the distribution of Plain Mosaic was influenced by building campaigns in the north-east of Britain. The tilers probably worked closely with masons and worked at a number of different sites. It is possible that Plain Mosaic floor tiles played a part in the on-going negotiation and maintenance of relationships between some of the large Cistercian houses and their friends and neighbours in the north. Complex institutional interaction, involving the status of particular abbeys and the advantages of regional cohesion, may have been involved. Overt displays of brotherhood and fellowship may also have concealed or mitigated the dangers of competition between houses. A close association in the north between the reformed monasteries and the production and use of ceramic floor tiles may have influenced perceptions of this material throughout the late medieval period.

3 Reorganisation of production and changes in design, c.1300

Some changes were evident in Plain Mosaic production in the third quarter of the 13th century. There was some elaboration in decoration, with a greater range of decorative techniques and more two-colour designs (though the numbers were still small). There were also some changes in the glaze(s) used, with a higher proportion of brown rather than green tiles. The thickness of the layer of white clay may also have been reduced over time. There is little to suggest that the changes were made in an attempt to speed up or streamline production. For example, reverse inlay – a time-consuming technique – appears to have been used more frequently at a later date. Also, the pavement at Meaux, towards the end of Plain Mosaic production, was the most complex of all sites with the largest numbers of the smallest tiles. This grand finale may have related to the special significance of the church and conventual buildings for the community at Meaux following their several dispersals. Another feature of the late production of Plain Mosaic at Meaux was the inferior copies made at the North Grange kiln site (Inferior Plain Mosaic: Tile Group 2 and possibly Group 3; Figs 11.1–11.4). These inferior quality tiles were thought to be contemporary with some of the best quality Plain Mosaic at Meaux since unused examples of both the best quality and the poor quality tiles were found discarded in a dump outside the north transept of the church (see Chapter 11). The poor quality Plain Mosaic tiles had been made by unskilled people. Their lack of competence was particularly clear from the way the tiles were cut out and problems encountered with firing the glaze. It is possible that the huge scale of the paving at Meaux, almost the entire church, necessitated using inexperienced people.

The tile groups assigned to the second half of the 13th and earlier 14th century, including Inferior Plain Mosaic, are listed in Table 3.1. The larger tile groups have been named Inlaid, Usefleet and Decorated Mosaic. The smaller groups of tiles, made for use at only one site, were designated Inlaid Copies and Other Decorated Mosaic as they were of similar design or conception to the larger groups although not made by the same tilers.

The characteristics of the Inlaid, Usefleet and Decorated Mosaic Groups, when compared with Plain Mosaic, suggested that production became more commercially driven and more engaged with the secular world in the later 13th and earlier 14th century. No single group demonstrated a linear progression from seigneurial production in the monastic domain to independently operated commercial industry – but changes were apparent in particular aspects of the various groups. In general, the Inlaid and Usefleet Groups retained many of the monastic connections of Plain Mosaic but gradually changed their tile-making techniques. The Decorated Mosaic Group referred to Plain Mosaic stylistically but broadened the appeal of tile pavements to a wider range of customers outside the monastic world.

The Inlaid and Usefleet tile groups

As shown in Figure 3.1, tiles of the Inlaid and Usefleet Groups were distributed to several of the same sites in North Yorkshire, including three monasteries that already had Plain Mosaic pavements (Byland, Rievaulx and Gisborough). New sites included the Benedictine abbey at Whitby and, probably, that at York. Usefleet

Table 3.1: Tile groups of c.1300 (larger groups in bold letters)

<i>Tile groups</i>	<i>Sites</i>	<i>Dating</i>
Inferior Plain Mosaic (Groups 2 and possibly 3; Figs 11.1–11.4)	Meaux, possibly Thornton	c.1249–1269
Inlaid (Figs 12.1, 12.2)	Byland, Gisborough, Rievaulx, Wether Cote kiln, Whitby, York; possibly Helmsley Castle	poorly dated to the mid or later 13th century
Inlaid Copies (Group 5; Figs 12.3, 12.4)	Rievaulx, possibly Wether Cote kiln	poorly dated to later 13th century
Usefleet (Figs 13.1–13.6, 27.34)	Byland, Scarborough, Rievaulx, Wether Cote kiln, Whitby, York	c.1300
Decorated Mosaic (Figs 14.1a–h, 14.2–14.15, 27.40)	Beverley, Burnham, Habrough, Jervaulx, Kirkham, Kirkstall, Reedham, Scarborough, Thornton, Watton, Winthorpe; possibly Dornoch, Durham, Louth, York	perhaps from later 13th to early/mid 14th century
Other Decorated Mosaic (Group 8; Figs 15.1–15.4)	Newminster	poorly dated to c.1300

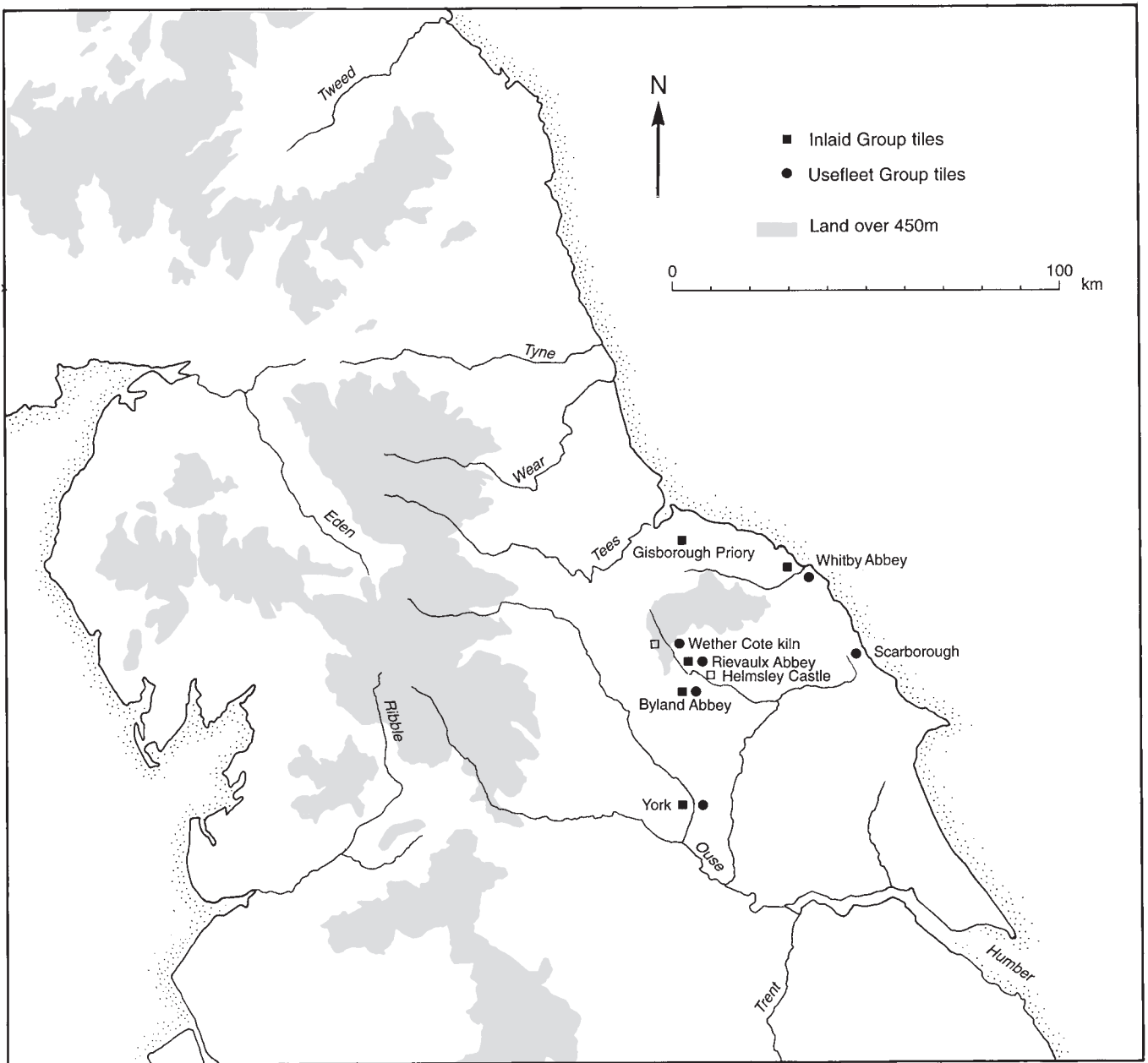


Fig 3.1: Sites with tiles of the Inlaid and Usefleet Groups. Solid symbols indicate certain or probable use; open symbols indicate possible use. In York, both Inlaid and Usefleet tiles were found at St Mary's Abbey and Inlaid tiles may have been used in the Bedern Chapel

tiles were also found at Scarborough in an area of the Paradise Estate interpreted as medieval gardens. Although the location of a monastery here is not known, the placename might reflect monastic connections. Strong ties existed between Scarborough and the Cistercian mother-house at Cîteaux (see entry 78, Chapter 27: *Scarborough Castle*).

Both the Inlaid and Usefleet tile groups were most strongly represented at Rievaulx Abbey, with only a limited number of designs distributed to other sites (four Inlaid designs and five or six Usefleet designs; see Chapters 12 and 13). The manufacturing characteristics of the tiles were consistent, within their groups, at all sites. A cracked stamp of design 4.2 was used to

make Inlaid tiles for Rievaulx, Gisborough, Whitby and St Mary's, York. Similarly, Usefleet tiles of design 6.10 from Byland, Rievaulx and Whitby were made with the same stamp, as were designs 6.2 and 6.9 from Rievaulx, Wether Cote and St Mary's Abbey, York.

The location of manufacture of Inlaid tiles is not known. Usefleet tiles appear to have been made at Wether Cote long after Plain Mosaic production there had ceased. One of the finds from Wether Cote, a half tile of design 6.1 with the John Usefleet inscription, had glaze on the broken edge showing that it had cracked or broken in firing and was certainly a waster. ICP fabric analysis confirmed that both Usefleet and Plain Mosaic tiles from Wether Cote were of the same

composition as tiles at Rievaulx Abbey (Appendix 1: ICP Cluster 17). ICP analysis of a few tiles from each site suggested, however, that not all Usefleet tiles were made at Wether Cote and that some Inlaid and Usefleet tiles for Byland, Rievaulx and Whitby had been made using another clay source (ICP Cluster 1). Tiles from St Mary's Abbey, York, and Gisborough Priory were made separately (ICP Clusters 3 and 10).

Continuity in 13th-century techniques and organisation

Table 3.2 compares the occurrence of manufacturing characteristics typical of Plain Mosaic with their occurrence on tiles of the Inlaid and Usefleet Groups. It shows that manufacturing techniques associated with Plain Mosaic were used to make both Inlaid and Usefleet tiles, but that a smaller proportion of tiles was made like this as time went on. The similarity between the largest Plain Mosaic squares and plain or worn Inlaid tiles was such that they were not always distinguishable. Tiles with Plain Mosaic characteristics – scooped keys, a reduced fabric, slightly angled sides and inlaid decoration – were still made by the Usefleet tilers but far fewer of the Usefleet tiles were like this. The presence and absence of Plain Mosaic characteristics on the Inlaid and Usefleet tiles did not correlate with the use of particular designs or with assemblages from particular sites. So, for example, Inlaid tiles found at the same site and decorated using the same stamp, were made with and without keys. However, there was some correlation between Inlaid tiles which did not have keys and those with the thinnest layer of white clay (37% of the total and 80% of those without keys). Most Plain Mosaic techniques were rare or absent on tiles of the later 14th and 15th centuries.

The impact of these changes in manufacturing would have been to reduce the workload of the tilers

rather than to speed up production or improve quality. The absence of keys, for example, would have meant less work but longer drying and firing times. Inadequate drying is a likely reason for the correlation between cracked and unkeyed tiles of the Inlaid series. This and some other technical problems seem to have been resolved by the Usefleet tilers. The reduction in the amount of white clay used might have been an economising move but a thinner slip could have been advantageous in other ways since fewer tiles decorated in this way lost the white clay during firing. The unchanged depth of the Inlaid and Usefleet quarries from Plain Mosaic suggested that access to clay and transportation remained unchanged from earlier days.

Some other resources may, however, have been in short supply in the later phases of Usefleet production. Alterations and repairs to Usefleet design stamps indicated that skilled stamp cutters were no longer available. Repair work was evidenced by the indentations caused by nail-heads (or similar) hammered into the raised parts of some of the Usefleet stamps, presumably to hold them to the base (Fig 13.4). Alterations were also made to some of the designs (6.1 and 6.2; 6.4 and 6.8). A notable difference in quality is apparent between the AVE MARIA inscriptions on designs 6.9 and 6.10 of the Usefleet Group, which were well executed with the lettering the right way round on the finished tiles, and that of the dedications to John Usefleet (IONS USEFT) of designs 6.1 and, possibly, 6.3, which were poorly cut (Figs 13.1 and 13.3). In design 6.1 the stamp-maker had failed to reverse the lettering on the stamp. While the AVE MARIA inscriptions were clearly intended to form a main part of their designs, the IONS USEFT inscriptions may have been added to existing design stamps (designs 6.2 and 6.4). These changes suggested that the stamps were retained in use for a long period – or perhaps were used in two phases. The Usefleet tilers appear also to have re-used

Table 3.2: Comparison of manufacturing characteristics

<i>Characteristics</i>	<i>Occurrence – Plain Mosaic Group*</i>	<i>Occurrence – Inlaid Group</i>	<i>Occurrence – Usefleet Group</i>
Scooped key	all 70–80mm or larger squares	55%	11%
Cut, scored and split	occasionally present	occasionally present	absent**
Reduction	all largely or partly reduced	100% largely or partly reduced	73% largely or partly reduced
Decorative techniques	reverse inlaid inlaid counter relief –	– 40% inlaid 1 counter relief 'trial' piece 27% slipped	– perhaps 39% inlaid 1% counter relief perhaps 60% slipped
Depth white clay	rarely less than 1mm range 1–5mm	32% with less than 1mm range 0.5–5mm	60% with less than 1mm range 0.5–2mm
Tile sides	mostly slightly angled	73% slightly angled 27% vertical	32% slightly angled 68% vertical
Depth	range 12–45mm average 35mm	range 31–40mm average 35mm	range 28–45mm average 35mm

* Plain Mosaic tiles were not recorded individually and so the proportions given are less specific than for the other groups

** Only two scored and split triangles are extant in the loose assemblage of Usefleet tiles

some Inlaid design stamps. The Inlaid design 4.12 on a Usefleet quarry was found at Wether Cote kiln site.

Poor quality copies were made of the Inlaid Group designs (Fig 12.3). They were only used at Rievaulx and may have been made at Wether Cote. The tiles were fired reasonably successfully but the design stamps were badly cut, the tiles poorly stamped and the white clay poorly applied. In several cases the stamp had not been pressed down hard enough on the quarries – perhaps children or the elderly were involved. It is possible that expert tilers made the best quality tiles and moved on. The copies demonstrated a loss of expertise and imagination but may have been an amateur attempt to maintain earlier practices. A definitive group of Usefleet copies was not identified although there were some indications of two sets of design stamps for this group at Rievaulx, one of a finer quality than the other (see Chapter 13).

Traditional design and use of Inlaid and Usefleet tiles

The designs of the Inlaid Group might be seen as retaining some of the restraint of Plain Mosaic tiling, with several that are not unlike the small number of two-colour designs of the Plain Mosaic Group (compare Figs 10.15 and 12.2). When laid in a floor, the geometric patterns of the Inlaid Group also produced an effect similar to continuous-repeating Plain Mosaic tiling (for example designs 4.15 and 4.16). These abstract designs contrast with trends in France and the south of England at this time, where popular two-colour patterns included animal, bird and heraldic motifs.

Only square, triangular and rectangular tiles were made by the Inlaid and Usefleet tilers. The Plain Mosaic tradition might, nonetheless, be seen in the rectangular tiles of the Usefleet Group, which were not scored and split from square tiles in the manner that became standard at a later date, but were made as rectangles and decorated using rectangular design stamps. Some of these tiles are re-set in the vertical face of a step in one of the chapels on the north side of the nave at Rievaulx. Risers are only otherwise known in the region among tiles of the Plain Mosaic Group.

The change from the complex arrangements of Plain Mosaic to the patterned tiles of the Inlaid and Usefleet Groups would have greatly simplified the task of laying the tiled floors. The most complex arrangement of the Inlaid and Usefleet Groups used four tiles of the same design laid together, giving the resulting circular patterns a diameter of only *c.*250–330mm. This compared to a diameter of *c.*2m for Plain Mosaic roundels, made out of hundreds of tiles. The layout of the Inlaid and Usefleet patterned tiles would have been obvious from their designs and the makers of these tiles need not have been involved in laying the pavements. The larger surface area of the Inlaid and, particularly, Usefleet tiles would have made it quicker

to lay the pavements, covering a bigger area of the floor with each tile. Despite the greater use of patterned decoration, the changes in design, like those in manufacture, simplified the production of tiled pavements and reduced the workload of the tilers.

Little is known about the location of the Inlaid and Usefleet floors at the various monastic sites. The only re-set areas thought to approximate their original locations are in the north transept and nave chapels at Rievaulx (Figs 13.6 and 27.34). The use of these tiles at several sites that already had large Plain Mosaic pavements might suggest that they were laid in smaller areas such as chapels.

Patronage

It seems certain that production of the Inlaid and Usefleet tiles was rooted in Plain Mosaic and monastic tradition and there appears to have been some limited movement by the tilers between monastic sites. However, both these tile groups were centred at Rievaulx. By far the largest assemblages were at Rievaulx and at least some of the tiles were manufactured at this monastery's tiling at Wether Cote. Lesser quality copies were produced for this site alone. All of this suggests there was a continuing tile-making tradition at this monastery.

There was some expansion in the range of customers. In addition to the Cistercian and Augustinian sites supplied earlier, the Benedictine monasteries at Whitby and in York had Inlaid and Usefleet tiles. An increase in influence from the lay community was suggested by some Usefleet designs. The motifs of design 6.17 were probably inspired by heraldry. The inscription of design 6.1 (and perhaps 6.3) was thought to commemorate Sir John Usefleet. John or Johannes de Usefleet (variously spelt) was a wealthy man of knightly rank who died in *c.*1304 (Bilson 1929, 37–105; Richardson 1955, 246–56; Horrox 1983; Armstrong and Ayers 1987). Ousefleet is a village 17 miles west of Hull, on the south side of the point at which the River Ouse links with the Humber. Sir John owned property there and was granted a licence for a chaplain to serve his chapel in Ousefleet on March 16th, 1294/95. He also gave 40 acres of Ousefleet land to St Mary's Abbey, York. A valuation of property made in Hull in 1293 shows that John Usefleet held more properties and paid more rent than most people. The largest of his plots reached from the High Street to the quayside. References to land deals continue until 1304 and it is likely that he died at about this time. The Hull properties had been registered in another name by 1309. An effigy of John Usefleet's daughter Margery remains in Selby Abbey. The significance is not known of the containers in the Usefleet designs 6.3, 6.4 and 6.8. The covered bowl or mazer in design 6.8 could have been used in either ecclesiastical or secular contexts, as ciboria or food containers. This design may have been cut down from a damaged stamp of design 6.4.

Demise of the Inlaid and Usefleet workshops

Difficulties encountered by the Inlaid and Usefleet workshops were not the result of a lack of demand. The existence of a market for Inlaid tiles is suggested by the manufacture of copies. Continued demand after *c.*1300, when the Usefleet tiles are thought to have been made, is shown by the success of the Decorated Mosaic Group (see further below). Nor was there anything to indicate that there were problems with access to materials or transport. The inferior quality copies and the repair and re-use of stamps suggested, instead, that there was a lack of skilled tilers. The small number of design stamps of both the Inlaid and Usefleet Groups contrasts with the very large number of stamps which was a feature of the Decorated Mosaic Group (see below). A lack of aspiration, perhaps connected with changes in the monastic world, may have resulted in the demise of the Inlaid and Usefleet industries. Numbers of Cistercian laybrothers were at their highest at northern monasteries in the late 12th century (Lawrence 1989, 178–9). References to laybrothers in the region were very few after the middle of the 14th century (McDonnell 1963, 114). The large-scale building programmes within which the highly skilled Plain Mosaic tilers had operated had come to an end.

The Decorated Mosaic tile group

The Decorated Mosaic Group included both square and shaped tiles, most of which had two-colour decoration (Figs 14.1–14.5, 14.7–14.14). The assemblage included two large roundel arrangements (of 2–3m diameter) mainly composed of segmentally shaped tiles (there is no evidence to support the existence of the third large roundel published by Henry Shaw; see Chapter 14). There was one much smaller roundel, three different sizes of patterned square tiles, rectangular tiles and several shapes and sizes of tiles with letters depicted in white

clay. The tiles were distributed over *c.*150km within the study area (see Fig 3.2) and a further 200km to Reedham Church, near Norwich, Norfolk, and possibly more than twice that distance to Dornoch Cathedral, Sutherland, on the north-east coast of Scotland.

The shaped tiles of the roundels, the large and medium squares and the letter tiles were thought to have been the products of the same workshop at all sites. Conclusions regarding the small square decorated tiles were tentative since few loose examples survived (see Chapter 14). The characteristics which suggested that all the assemblages were made by the same tilers included consistency in size and depth (21–30mm deep, with the majority 25–26mm), the use of the same design stamps, the technique of cutting two stamps to make designs in reversed colours, the absence of keys in the tile bases and the vertical or near vertical sides of the tiles.

Aspects that showed variation between sites were the design assemblages, the fabric of both the tile quarries and the white clay, the glazes and firing conditions. There was no ICP analysis of the Decorated Mosaic tile fabrics, but variations in the clays of the tile quarries and of the white clay were visible to the eye and suggested three separate clay sources. The Scarborough Castle and Jervaulx Abbey tiles had a characteristic marbling or crazing of the white clay and a high number of inclusions in the body fabric. The white clay of the tiles at Kirkstall and Thornton was much better quality, being very white and smooth. Some problems were encountered in preventing it shrinking and falling out of the stamped impression. The white clay on tiles of sites in the area of the Humber and at Reedham, Norfolk, was pinkish and stood proud of the body fabric. The quarries of these tiles had a lower iron content, firing pink or grey rather than red or black. Tiles from the Humber sites, and also from Dornoch, had a characteristic pitting of the upper surface. Co-variance of these features allowed the material to be assigned to three sub-groups as shown in Table 3.3.

Table 3.3: Decorated Mosaic sub-groups

<i>Decorated Mosaic sub-groups</i>	<i>Sites</i>	<i>Type of site</i>	<i>Possible dating</i>
Sub-group A	Jervaulx Abbey	Cistercian monastery	
Sub-group A	Scarborough Castle (chapel)	Royal castle; chapel administered by Cîteaux	Before earlier 14th century
Sub-group B	Kirkstall Abbey	Cistercian monastery	possibly later 13th century
Sub-group B/C	Thornton Abbey	Augustinian monastery	Early 14th century
Sub-group C (Humber)	Watton Priory	Gilbertine monastery	14th century
Sub-group C (Humber)	Kirkham Priory	Augustinian monastery	
Sub-group C (Humber)	Burnham Church	Parish church	Earlier 14th century
Sub-group C (Humber)	Reedham Church	Parish church	After 1300
Sub-group C (Humber)	Habrough Manor	Manor house	
Sub-group C (Humber)	Winthorpe Hall	Manor house	
Sub-group C (Humber)	Beverley, Eastgate	–	
?Sub-group C (Humber)	?Dornoch	Cathedral	

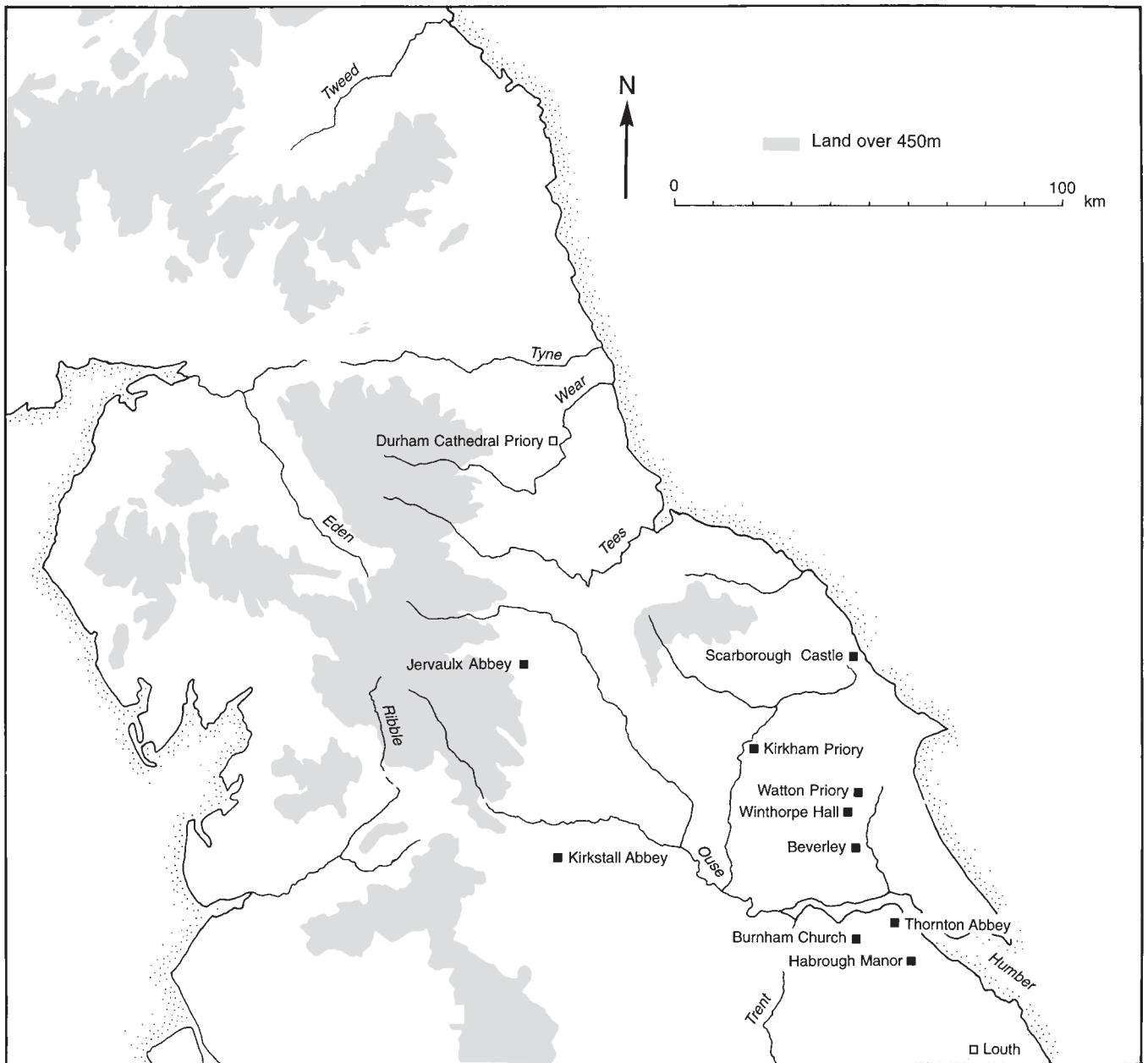


Fig 3.2: Sites with tiles of the Decorated Mosaic Group. Outside the study area these tiles were probably also in use at Dornoch Cathedral, Sutherland, north-east Scotland, and at Reedham Church, Norfolk. Solid symbols indicate certain or probable use; open symbols indicate possible use

The differences in fabrics of the tiles of the three sub-groups suggest that the tilers moved between three areas but that, in the Humber area, they supplied many sites from a fixed tiler. The presence of Humber sub-group tiles at Reedham, and possibly at Durham and Dornoch in north-east Scotland, shows that some of these products were shipped along the eastern seaboard. Although now an inland site, Reedham was located on an estuary and was effectively coastal. Shipment over such distances suggests that middlemen or merchants were involved. The distribution might be compared with that of the Scarborough ware pottery being made at this time, although there is no evidence as yet for exports of Decorated Mosaic tiles to the

Netherlands (McCarthy and Brooks 1988, 227–30; Hillewaert 1992).

Sequence and location of production

The Decorated Mosaic tiles from Scarborough Castle were dated to before the replacement of the chapel early in the 14th century (see entry 78, Chapter 27: *Scarborough Castle*). The tiles could have been laid either when the chapel was under the auspices of the Cistercian mother house of Cîteaux (until 1312) or when it was under royal control (1312–1333). The circumstances of royal control might make a date in the Cistercian regime more likely (Talbot 1960, 95–158).

An earlier 14th-century date was suggested from excavation for some Humber sub-group sites and a date after 1291 for supply of these sites is supported by their design assemblages. This is based on an interpretation of the castle designs of this group (designs 7.91–7.93) as a reference to Eleanor of Castile and Leon, the popular queen whose death in 1291 was marked by construction of the Eleanor crosses. In northern England, the Decorated Mosaic Group was the only medieval tile group with castle designs, suggesting that this design was popular at a specific point in time. The designs are thought to have commemorated her death, since the royal arms would also be expected if the designs had been made following her marriage. All sites with these designs were of the Humber sub-group. Design 7.91 was provenanced to Beverley, Kirkham and Watton, design 7.92 was provenanced to Thornton and design 7.93 was provenanced to Watton. On Eleanor's tomb in Westminster Abbey, the castle designs are quartered with lions (illustrated by Binski 1995, 108, pl 148). It is possible that the two lion designs (7.98 and 7.99) were intended to be used in this way. The lion rampant designs are known from Kirkstall, Thornton and Watton – possibly suggesting a date after 1291 for Decorated Mosaic at these sites. Design 7.100, which would also be dated to the 14th century on stylistic grounds, was found only at Watton. The absence of the castle and lion rampant designs from Jervaulx and Scarborough might suggest that they were supplied before Eleanor's arms became a popular motif, with the Humber sites supplied at a later date.

This sequence was supported by a more general analysis of the design assemblages from each site showing that there was relatively little overlap between the square-tile designs at Jervaulx and Scarborough and those of the Humber sites (see Chapter 14, Table 14.7). Kirkstall's design assemblage showed similarities to both Jervaulx and Scarborough and some of the Humber sub-group sites. This analysis was helped by the frequent turnover in Decorated Mosaic stamps (see further below). Taken together, the evidence suggested that Decorated Mosaic tiles were first made for Jervaulx/Scarborough, then Kirkstall, then the Humber sub-group sites. This suggests that, having moved site to supply huge pavements at Jervaulx and Kirkstall, the tilers then worked from a fixed base.

The precise location of production in the Humber area is not known. Floor tile manufacture at Thornton Abbey is suggested by an account of 1313 which recorded payment for 'two cartloads of earth from Ledes for coloring the tile of the church, 10s 4d' (Parker 1845). This probably referred to the white clay that is known to have been extracted from the Leeds area until modern times. However, many floor tile series were used at Thornton, some poorly dated, and it is difficult to associate this reference with a particular tile type (see entry 86, Chapter 27: *Thornton Abbey*). Also the fabric of the Decorated Mosaic tiles at Thornton is not similar to that of the bricks used to

build the gatehouse in the 14th century, which logic dictates were locally made. It is notable that the record of 1313 for Thornton refers to the purchase of materials, in contrast to later records about works at this site that simply record payment for tiles.

The distribution of the Humber sub-group suggests that at least one kiln was located in the south-east of the study area. However, the buff to pink or grey fabric of these tiles is more like that of pottery made at sites to the north or west of York than the orange and red fabrics which predominated at Beverley and Hull at this time (McCarthy and Brooks 1988, 227–52). The sites of many pottery kilns dating from the mid 12th to the 14th century are known in the Castle Road area of Scarborough – although the dating of this pottery in different regions is still being debated (Farmer 1979; Farmer and Farmer 1982). No floor tile has been found with the pottery kilns at Scarborough but a floor tile of design 3.1 (possibly part of the Inferior Plain Mosaic Group, see Chapter 11) and some waste roof tile was found on North Cliff, Scarborough, and might suggest that some types of floor tiles were made in the vicinity. Comparison with the fabrics of pottery made at Scarborough might yield results but was not undertaken as part of this study.

Other pottery making of the later 13th and 14th centuries in Yorkshire was based in villages at Brandsby, north of York, and West Cowick in the East Riding. So far excavations at these sites have not found roof or floor tile, but the possibility that pottery was fired in specialised loads of particular types was noted at Brandsby (Wilson and Hurst 1964b, 297; Le Patourel 1968; Wilson and Moorhouse 1971, 178; Webster and Cherry 1972, 208; Webster and Cherry 1973, 185).

Continuity with 13th-century pavement layout and symbolism

If the sequence of production suggested above is correct, the Decorated Mosaic paving scheme would have been designed for Jervaulx in the decades after the end of Plain Mosaic production. Although much more patterned than Plain Mosaic, the large roundels, the circular satellite patterns and the high proportion of geometric designs in the Decorated Mosaic pavements suggested that this workshop referred to the same design tradition as Plain Mosaic. Like the Plain Mosaic pavement at Meaux, the Decorated Mosaic floors at Jervaulx, and perhaps Kirkstall, covered the whole of the body of the church except the nave aisles. They were similarly massive undertakings. Also like Plain Mosaic, the Decorated Mosaic roundels and other designs were produced in two colour ways, and laid as either dark-on-light or light-on-dark versions (see Chapter 14, Figs 14.1a, 14.2 and 14.4 for the two versions of the roundel and Table 14.6 for a list of square tile designs where versions in reversed colours are known). The possibility that this type of layout might

Table 3.4: Types of Decorated Mosaic tiles represented at each site

<i>Site</i>	<i>Shaped</i>	<i>Square</i>			<i>Letters</i>			
		<i>Large</i>	<i>Medium</i>	<i>Small</i>	<i>Large</i>	<i>Rect</i>	<i>Small</i>	<i>Other</i>
Jervaulx Abbey	Y*	Y	Y	Y	–	–	–	–
Scarborough Castle	Y	Y	Y	Y	–	–	–	–
Kirkstall Abbey	Y*	–	Y	Y	Y	–	Y	Y
Watton Priory	Y	–	Y	Y	Y	Y	–	Y
Thornton Abbey	Y	–	Y	Y	–	–	–	–
Kirkham Priory	–	–	Y	–	–	Y	–	–
Beverley, Eastgate	–	–	Y	–	–	–	–	–
Burnham Church	–	–	Y	–	–	–	–	–
Habrough Manor	–	–	Y	–	–	–	–	–
Reedham Church	–	–	Y	–	–	–	–	–
Winthorpe Hall	–	–	Y	–	–	–	–	–
?Durham	–	–	Y	–	–	–	–	–
?Dornoch	–	–	Y	–	–	–	–	–
?Louth	?Y	–	–	–	–	–	–	–

* The shaped tiles at both Jervaulx and Kirkstall included letter tiles (see Chapter 14 for details).

have had widely understood symbolic connotations that were popular with Cistercian monasteries like Jervaulx and Kirkstall was discussed in Chapter 2.

Tiled inscriptions at monastic sites

Some further aspects of Decorated Mosaic design seem to have been devised with monastic use in mind. The individual letter tiles of this group were only found at monastic sites (see Table 3.4). The majority of extant examples were from Kirkstall, with one tile from Kirkham and records from antiquarian sources for Jervaulx and Watton. The various sizes and shapes of the tiles indicate that several different sets of letters were made (see parts of Fig 14.1). One set of segment-shaped tiles (for use in the roundels) had two letters on the tile (design 7.40; K and possibly L stamped upside down). A rectangular tile with a C and a reversed D, known from an antiquarian drawing, was probably a similarly shaped tile, with the slight curvature of the sides having been missed (this is easily done, particularly with abraded examples). Further segmental letter tiles, but with a single letter on each tile, occurred in two sizes (designs 7.35, 7.36 and 7.38). Another set, similar in shape to the tiles of designs 7.13 and 7.32, made up one of the inner bands of the roundels according to antiquarian drawings. Further sets of letter tiles were straight-sided. One was rectangular with a single letter on the long axis (designs 7.67–7.70, 7.72–7.73). Square tiles with single letters were made in two sizes (designs 7.41–7.47, 7.49–7.53 and designs 7.56–7.65).

There were few clues as to the possible reading of the Decorated Mosaic inscriptions but, if the tiles with two letters on them were correctly read as C and D and K and L, they might have been used in a display of the alphabet (designs 7.39 and 7.40). If so, this may have

been intended as a reference to literacy as a characteristic of the religious. An association between literacy and godliness, as opposed to illiteracy and heresy, was explicitly promoted by the church in the 12th and 13th centuries (Biller and Hudson 1994).

New consumers and marketing strategies

Table 3.4 shows that there was a strong correlation between the status of individual sites and the degree of variety in their Decorated Mosaic assemblages, regardless of the date of production. As also shown in Table 3.4, the monastic sites, of all sub-groups, had shaped tiles and letter tiles (Scarborough Castle, which may have been under Cistercian control, also had shaped tiles). The only tiles at the manors and parish churches were the medium-sized squares.

The manufacture of different types of tiles for customers of different status might suggest a deliberate marketing strategy on the part of the tilers. The assemblages of the various sites may reflect the size of the area being paved and the cost and difficulty of laying the more complex arrangements. It may also reflect the type of tiling that was considered appropriate to particular sites or locations. The roundels and letter tiles are argued to have carried intellectual symbolism, while the medium-sized square tiles included the populist reference to Castile and Leon. Some of the more specialist tile types went out of use quickly and seem to have been site specific. The large squares were apparently restricted to Jervaulx and Scarborough, the shaped letter tiles to Jervaulx and Kirkstall, the small square letter tiles to Kirkstall, and the rectangular letter tiles to Kirkham and Watton. Perhaps the special significance of the letter stamps meant that the monasteries wanted to keep them.

Technology and innovation

The counter-change of colours in Decorated Mosaic design was achieved entirely by using two sets of design stamps. On one set, the design was cut out in relief on the stamp and filled with white clay on the quarry. On the other set, it was the background that was raised on the stamp and filled with white clay on the quarry. The use of two sets of Decorated Mosaic stamps explains why the two versions of the roundels and other designs were not identical copies. The counter-change of colours in Plain Mosaic designs had been achieved by a variety of methods and experiment, most often using reverse inlay (identical copies are produced with this method). The Plain Mosaic tilers did occasionally use stamps with a raised background (see Chapter 10, Plain Mosaic design 1.6). The precise method was not entirely new, therefore, but the Decorated Mosaic tilers realised its potential for producing dual sets of decorated tiles in opposite colours.

Wooden stamps were used to make the letter tiles of the Decorated Mosaic Group. It is difficult to be certain of the precise techniques used to make the few inscribed tiles of the Plain Mosaic or Inferior Plain Mosaic Groups. Some of these were probably made individually by hand, cutting away the white clay to form the letters on the quarry. The use of stamps to make the letter tiles would have been far quicker than this sgraffiato method and the person making the tiles would not have needed to be literate. It is possible that small stamps of individual letters were used in some cases. This would explain how only one of the letters was misplaced on designs 7.39 and 7.40.

The absence of any direct parallels with earlier designs in the region suggests that the Decorated Mosaic tilers invented their own designs. The interlaced foliate style of the Decorated Mosaic roundels was similar to designs on the decorated bands of a mid-13th century pavement in the King's chapel at Clarendon Palace (Eames 1963). However, the way the pattern on the Decorated Mosaic roundels weaved from one band of segment-shaped tiles to the next was not paralleled elsewhere and seems to have been an innovation from within the region. The segment-shaped tiles in the roundel at Clarendon were separated by plain tiles. Segment-shaped tiles were also used in a pavement at St-Pierre-sur-Dives, Calvados (Norton 1986b, 274, fig 18). The original arrangement of this floor is uncertain but most of the designs were complete on a single tile and could not have been used to produce the Decorated Mosaic effect.

Economical use of resources

In general the manufacturing characteristics of Decorated Mosaic showed a greater concern with the economical use of resources than was apparent among other 13th-century tile groups. Tiles accidentally swollen during firing were, for example, used in some

Decorated Mosaic pavements (at Thornton; Fig 27.40). Similar tiles in the Plain Mosaic assemblage (from Newbattle, Meaux and North Grange kiln site) were unworn, suggesting that they had been discarded. Decorated Mosaic tiles from all sites had an average depth of 25mm and were lighter in weight than any made previously. This would have economised on the amount of clay used and reduced the weight of tiles in transport. White clay was used more sparingly than earlier and is rarely more than 1mm deep. The poor quality of the slip at Jervaulx and Scarborough might indicate difficulties in obtaining good quality white clay – something which had presented no problem for the Plain Mosaic tilers.

In contrast to the Inlaid and Usefleet workshops, the Decorated Mosaic tilers had no difficulty in obtaining new design stamps. Large numbers of stamps were required to make all the designs in reversed colours. No cracks were recorded in any Decorated Mosaic design stamps, suggesting that stamps were replaced immediately when damaged. Most of the design stamps were cut by a competent craftsman. The accessibility of new stamps indicates that the stamp maker was a member of the tilers' workshop. Once the stamps were made, production would have been quicker and more economical than the reverse inlay method used earlier. Less white clay would have been needed and there were fewer manufacturing steps.

Decorated Mosaic production and links with other regions

It seems that the manufacture of Decorated Mosaic was a more commercially orientated operation than that of Plain Mosaic production, although both design and manufacture may still have been located in monastic contexts, at least in the first years of production. The operation probably moved to a fixed base in later years and this may or may not have been at a monastic site. The distribution of the tiles in the study area was mainly to rural sites. The castle designs on several tiles in the Humber sub-group might suggest that the changes in organisation occurred by 1291. Continued access to new design stamps, flexibility in working practices and adaptability to new markets may have been important factors in the success of this workshop.

Comparison with other areas suggested that some of the changes evident in the organisation of production in the north happened at a similar or earlier date further south. An independent commercial tiling workshop from a fixed base was, for example, operating at Danbury, Essex, from c.1275 (Drury and Pratt 1975). The catchment area for these tiles was a 20km zone around the tiling and some sites further away, in the Thames valley. Elizabeth Eames has suggested that tilers working in the south midlands, making tiles of the Stabbed Wessex group, were operating commercially by the last quarter of the 13th century, and that

Central Essex tiles were being produced commercially at a slightly earlier date (1980, 1, 280). In both the latter cases the tileries may have continued in production after they had been established to supply one large order. It is possible that Decorated Mosaic began in a similar way.

The finds of square tiles of the Decorated Mosaic Group in Norfolk, Durham and north-east Scotland showed that distribution of these tiles was very extensive (the precise provenance of the tiles to Durham Cathedral Priory and Dornoch Cathedral are uncertain but the general attributions to these places are likely to be correct). These sites, all with access to the coast, suggest transshipment from a port. Both Norfolk and north-east Scotland were without well-established tileries in the earlier 14th century and it is possible that the Humber sub-group tilers were filling gaps in supply along the eastern seaboard. The influence of their designs can be seen in later industries. A tilerie set up in Norfolk, at Bawsey, near King's Lynn made copies of Decorated Mosaic square tile designs (for example, designs 7.135, 7.152, 7.158; Eames 1955, nos xliii, xlv, liii, liv, lv). The Bawsey industry is thought to have been in operation in the mid and later 14th century (Eames 1955, 162–81; Keen 1980, 212–19). The tiles were made quite differently from Decorated Mosaic, often being decorated in counter relief. The differences in manufacture argue against the idea that Decorated Mosaic tilers joined the Bawsey tilery, suggesting instead that the Bawsey tilers made stamps of the successful Decorated Mosaic designs for their own use. Similarly, the gyronny designs of the Decorated Mosaic Group became popular in southern England in the mid and later 14th century (Fig 14.1; Wight 1975, 131 and pl II).

Competition

Despite the instances of supply over long distances, versions of Decorated Mosaic were also made by other workshops in the study area, possibly indicating that the Decorated Mosaic tilers could not fulfil the demand for their product. At Newminster Abbey, Northumberland, paving with designs similar to, but not the same as, Decorated Mosaic was found in the 1920s (Figs 15.1–15.4). Unlike the copies of the Plain Mosaic and Inlaid tile groups discussed above, these were not made alongside or following on from the Decorated Mosaic Group. Also, unlike the Plain Mosaic and Inlaid tile group copies, the paving at Newminster was not of inferior quality. The restriction of these tiles to one site might indicate that they were made locally. The distribution of Decorated Mosaic along the east coast shows that there was no difficulty, in principle, with obtaining Humber sub-group Decorated Mosaic tiles over considerable distances. It is possible that only square tiles would have been transported to Newminster by the Decorated Mosaic workshop or that Newminster was not near enough to the coast. Elsewhere, and further inland, broadly similar tiles were also produced for Melrose Abbey, Borders, Scotland. These are undated but on comparative grounds might be seen as another local initiative of this period (Richardson 1929; Norton 1994). Other variations on this type of tiling in the region are suggested by two unprovenanced tiles in the Yorkshire Museum collection (Brook/75 and 76; designs 9.1 and 9.2). However, more robust competition to the Decorated Mosaic tilers may have come from a successful industry set up in Nottinghamshire in *c.*1325 (discussed in Chapter 4) and from imports of Plain-glazed tiles from overseas (see Chapter 5).

4 Long distance supply and personalised designs, c.1350

Cessation of floor tile manufacture in the north, c.1325

By 1300 customers in both the religious and secular domains could obtain floor tiles. The tilers were aware of their needs, making particular types of tiles for sites of different status. They were able to deliver over long distances, possibly via a network of middlemen. The techniques for manufacturing square, two-colour tiles, typical of the late Middle Ages, were firmly established. A successful transition had been made from moving between major institutional customers to supplying a wider range of people from a fixed base.

By 1350 the manufacture of floor tiles on any scale in England north of the Humber had stopped. In a few places floor tiles were made locally for individual sites but production above this level may not have resumed in the region until c.1450. The cessation of manufacture in the earlier 14th century was not a result of a collapse in demand. Floor tiles continued to be purchased in the north, possibly throughout the period 1350–1450. However, instead of being made in the region, the tiles were brought in from other areas on a commercial basis. The only decorated tiles brought in were those of the Nottinghamshire Group, dating to c.1325–1365. These tiles may be contemporary with Decorated Mosaic for a time in the earlier 14th century. As shown in Figs 3.2 and 4.1, the distributions of the Decorated Mosaic and Nottinghamshire Groups in the north were complementary and the presence of Decorated Mosaic at Reedham in Norfolk effectively misses out the main distribution area of the Nottinghamshire tiles. Plain-glazed tiles from the Netherlands, more literally imports, were also used in the study area from, perhaps, the mid or later 14th century onwards (see Chapter 5).

Competition with the Nottinghamshire tilers is unlikely to have caused the end of the Decorated Mosaic workshop. Small groups of poor quality material in York and Hull, thought to be of 14th-century date, suggest that there was a demand for tiles above and beyond what was supplied from Nottinghamshire (see further below). Fifty years seems to be about as long as most medieval tileries lasted. Perhaps fifty years accounted for the impetus and influence of a single craftsman/entrepreneur and any successor. The necessary individual talents or desire for innovation may not often have been sustained beyond a second generation. Comparison of the design repertoires of the Decorated Mosaic and Nottinghamshire tile groups (Figs 14.1 and 18.1–18.2) suggested that the largely geometric and foliate designs of Decorated Mosaic would have appeared conservative and backward-looking to many people by the mid 14th century. Penn,

Buckinghamshire, had one of the longest lasting medieval tile industries, dating from c.1325–1390, possibly as a result of extensive royal patronage. Elizabeth Eames noted three chronologically distinct sub-groups to the decorated floor tiles made at Penn, the last of which was poor quality (1980, 1, 221–6).

Location of manufacture of the Nottinghamshire tile group

The Nottinghamshire tile group is part of a large series of tiles identified from many sites in the midlands that have been published on a county or regional basis by several authorities, in particular Jewitt (1871) and Ward (1892) for Derbyshire, Parker (1932) for Nottinghamshire and Whitcomb (1956) for Leicestershire and the north-east midlands generally. The present study has used Norma Whitcomb's high-quality work to compare material in Yorkshire with that in the midlands (Whitcomb's design numbers have been used, prefixed Wh/, and her drawings are reproduced in Fig 18.2 at 1:3 scale. Further drawings have been made where additional detail was apparent on examples found in the north; Fig 18.1: see also Fig 27.46 for a detail of these tiles). There was a clear similarity between the Yorkshire tiles and those in the midlands assigned to Whitcomb's Nottinghamshire Group, including features which related to firing. The same design stamps were used on tiles in the two regions (Ward 1891a, 30–3; 1892, 128–9). John Ward discussed the possibility that the Yorkshire tiles were made by itinerant craftsmen. Whitcomb's study did show that tiles in the midlands were made using a number of different clay sources and she correctly identified the products of the Chilvers Coton kiln (her Warwickshire Group) before that site had been discovered. However, Whitcomb also felt that some of the Yorkshire tiles had been made both early and later in the life of the Nottinghamshire design stamps, and therefore suggested that they had been made in the midlands and distributed from there. Some of the designs which Whitcomb attributed to northern sites, particularly sites in York, cannot now be provenanced (see, for example, entries 109 and 112, Chapter 27). Her information came from Parker (1932), Stevenson (1908–9) and Ward (1892) and from the Yorkshire Philosophical Society, but it is not known which tiles she actually saw.

Analysis of the Nottinghamshire Group tiles that can now be provenanced to sites in the study area is set out in Chapter 18. In summary, it was concluded that the physical similarities of the material in the two regions and the use of the same stamps, both before and after they became cracked, supported Whitcomb's view that the Yorkshire tiles were made in the midlands.

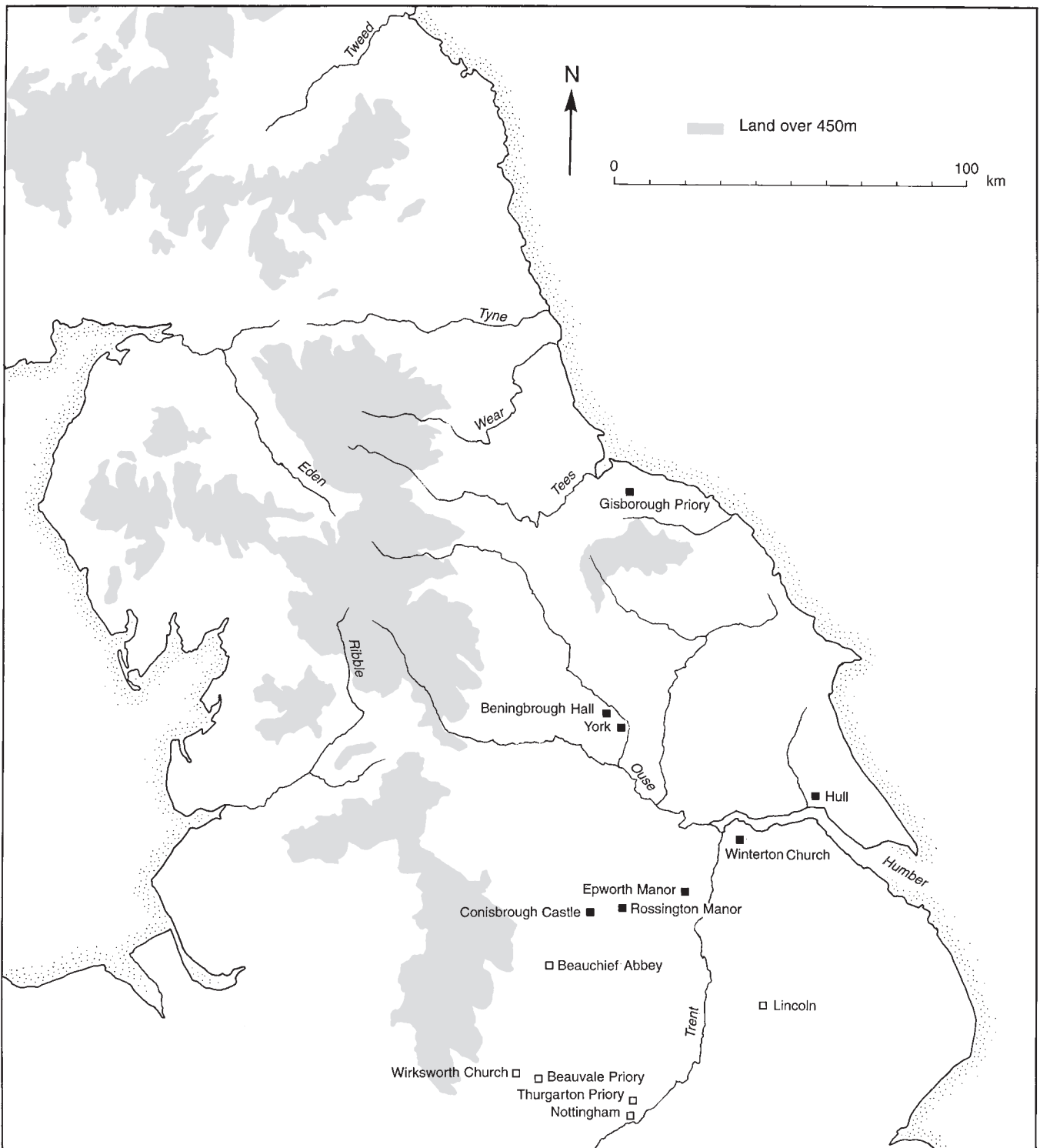


Fig 4.1: Sites in northern England with tiles of the Nottinghamshire Group. Solid symbols show sites within the study area (listed in Chapter 27). Open symbols show sites south of the study area where the survey was not comprehensive. In Hull, Nottinghamshire tiles were used at the Augustinian Friary, at Holy Trinity Church, and probably on a High Street property and elsewhere in the town. In York, these tiles were used at the Minster, at St Mary's Abbey and probably elsewhere in the town

Various sizes of quarry were present in the Yorkshire assemblage. The production of different sized quarries may have been chronologically distinct. The dating evidence for finds of Nottinghamshire tiles in Hull also suggested that Yorkshire tiles were manufactured both early and late in the life of the tiliary (for dating and

other details, see Chapter 18: *Nottinghamshire Group*). It is likely, therefore, that the Yorkshire tiles were probably made in Nottinghamshire over the life of the workshop.

Kilns apparently making Nottinghamshire tiles were discovered by antiquarians in various places in

the midlands. Unfortunately, little detailed information was recorded from most of these sites and in several cases it is now impossible to establish which tiles, or even which designs, were being made where. Several kiln sites found in Nottingham in the 19th century had been used to make pottery and roof tiles. However, floor tile fragments were discovered with two kilns in George Street, and a large quantity of floor tile waste (about a cart load) was found at the north end of George Street (Parker 1932). In Parker's article, twenty-five designs were attributed to 'the site of the potteries' in Nottingham. These formed the basis of Whitcomb's Nottinghamshire Group. Several of the designs found in Nottingham were among those found on northern sites (Wh/24; 30; 33; 38; 80; 85; 101; 110; 127; 133; 135; 136).

Another 19th-century discovery was a kiln containing unfired tiles in the precinct of the Augustinian priory at Repton, near Derby, but it is not now clear what tiles were found in it (Pears 1868, 128–30; Jewitt 1868; Ward 1892, 121–2). Llewelyn Jewitt thought that tiles of the Nottinghamshire Group were manufactured here. However, the description by Pears of some of the tiles found, and two tiles now in Sheffield Museum attributed to Repton but not of the Nottinghamshire Group, raise doubts which may not now be resolvable. At Dale Abbey, a kiln containing a large number of fired tiles was discovered in c.1862 but no record was made at the time and the types found cannot now be established (Ward 1892, 119–20). Tiles used at Lenton Priory were of a number of different tile series but included Nottinghamshire designs. Features excavated at this site might have been kilns but could have been drying ovens of some kind and no tiles were found with them (Swinerton *et al.* 1955; Swinerton and Boulton 1956, 5). Between 1967 and 1971 a large-scale ceramic production site was found in rescue excavations at Chilvers Coton, Nuneaton in Warwickshire (Mayes and Scott 1984). The tiles from

Chilvers Coton have been published and are extant (Eames 1984). Their highly distinctive pink fabric and golden glaze makes it certain that the Yorkshire tiles were not made at this site.

ICP analysis of the fabrics of Nottinghamshire tiles in the north has not been carried out. An earlier study of Nottinghamshire tiles from Hull, using neutron activation analysis, suggested that the tiles were not made with the same clay as ceramics known to have been made at Hull (Watkins 1979). However, the fabric of the Nottinghamshire tiles was not matched with any of a variety of tiles sampled from sites in the north midlands (Cherry 1986, and information from M.J. Hughes). The precise location for the manufacture of Nottinghamshire Group tiles used in Yorkshire therefore remains uncertain, but in the present state of knowledge Nottinghamshire – perhaps Nottingham itself – is the most likely source.

Restricted distribution of the Nottinghamshire tile group

The view that Nottinghamshire tiles were imported via the Trent is supported by their riverine distribution (see Fig 4.1 and Table 4.1). North of the Humber, Nottinghamshire tiles were restricted to sites in or near the towns of York and Hull, and to the Augustinian priory at Guisborough. South of the Humber many more rural sites were supplied. The Yorkshire tiles were clearly outliers to a distribution concentrated in the north-east midlands. Trading links along the Trent were documented between Nottingham and York in 1316 and between Nottingham and Hull in 1382 (Stevenson 1882, I, 89, no. xlv and 225, no. cxxiii). Access to Nottinghamshire tiles in the north depended upon proximity to the navigable waterways.

As shown in Table 4.1, the range of sites supplied by the Nottinghamshire tilers was similar to those of

Table 4.1: Distribution of Nottinghamshire Group tiles in the north

<i>Sites</i>	<i>Location of tiles, where known</i>	<i>Size/design sub-group</i>
Beningbrough Hall, York (site of grange of St Leonard's hospital)	–	–
Conisbrough Castle	–	–
Epworth Manor, Isle of Axholme	In the kitchen, possibly re-set	1
Gisborough Priory (Augustinian)	In the church, possibly west side of crossing	1 and 3
Hull, Holy Trinity Church	In the chancel	1
Hull, Old Town (various sites)	Including a property on the High Street	1 and 3
Hull, Blackfriars (Augustinian)	–	–
Rossington Manor, near Doncaster	Possibly in the chapel	3
Winterton Church	Possibly in the chancel	1
York: Micklegate (possibly the site of Benedictine priory)	–	–
York, St Mary's Abbey (Benedictine)	–	1, 2, 3
York Minster	In St Nicholas' Chapel	1
York: railway/other	–	1 and 3

the Decorated Mosaic Group, including both old and new monasteries, parish churches, castles and manor houses. There was little evidence for the precise location of pavements, with no certain instances of use in domestic rather than religious spaces. The tiles at Epworth were found in the kitchen but were thought to have been re-laid in this location (see entry 28, Chapter 27).

Analysis of the different sized quarries and stylistic similarities in the background motifs of the designs had resulted in the allocation of the tiles to sub-groups 1, 2 or 3 (see Table 4.1: details in Chapter 18). At several sites, the tiles were assigned to only one of the sub-groups. These sites were probably supplied with one batch of tiles for use in a specific pavement. There was a mix of sub-groups at St Mary's Abbey, York, at Gisborough Priory and among the unstratified or unprovenanced material from the towns of Hull and York, suggesting that these places were supplied with Nottinghamshire tiles more than once. At Gisborough the mix of types might equally have resulted from a longer line of supply, using up whatever was unwanted or not delivered elsewhere. The stray finds in Hull and York were likely to be remnants of several different pavements.

New features of the Nottinghamshire tiles

The Nottinghamshire tiles were more highly fired than earlier material found in the north. This gave a good contrast in colour between the glaze over the white clay and on the quarry (some examples are shown in colour in Fig 27.46). The tiles were brown and yellow – a green glaze was not used. The background on many of the tiles was dark brown, almost black, and the glaze over the white clay tended to be a strong yellow. The white clay was up to 1mm deep, usually sufficient to reproduce the pattern clearly, although examples with smudged or smeared white clay were found. The designs were more detailed than those known previously in the region. The stamp cutting was variable in quality and the stamps were cut by several different people. They remained in use when damaged. In general, however, the tiles suggest a high degree of technical competence and good control of the firing process.

The design repertoire of the Nottinghamshire Group was markedly different from earlier material in the north. About one-third (31%) of the Nottinghamshire designs catalogued by Norma Whitcomb and seventeen (50%) of the 37

Table 4.2: Heraldic attributions of the Nottinghamshire tile group designs

<i>Design</i>	<i>Sites</i>	<i>Whitcomb's attribution</i>	<i>Other attributions (where they differ from Whitcomb)</i>
Wh/42	Gisborough	Ferrers	
Wh/40	Rossington; York (St Mary's Abbey)	Ferrers	Quincy (W and P); FitzWilliam (N). Both are branches of the Ferrers family
Wh/57	York (St Mary's Abbey)	Dispenser	
Wh/35	Rossington; York (St Mary's Abbey and elsewhere)	–	Mauley (P and N)
Wh/50	Gisborough	?Albini of Belvoir	Keyme (H)
Wh/129	?York	–	Ridlington, Rutland (H)
15.1/variation on Wh/34	Rossington; York (St Mary's Abbey and elsewhere)	Cantilupe of Ilkeston, Derbyshire	
15.2	?Gisborough; York (Minster and elsewhere), Hull	–	
Wh/54	Rossington; York	Deincourt	or Bassilly (P/W/N)
Wh/24	?Gisborough; ?York (St Mary's Abbey)	England after 1340*	England assumed in 1399 (W); England 1327–1405 (P)*
Wh/46	York (St Mary's Abbey and elsewhere)	–	
Wh/44	York (St Mary's Abbey)	Ferrers	Zouch (W)
Wh/30	Gisborough; ?York	Seagrave (probably)	Morley (P); Morley, Seagrave or Darrel (W); Brus (B)
Wh/49	York	?Grey	Furnival, Mounteney or Lutterel (W)
Wh/47	York	–	
Wh/38	?Gisborough; ?York (St Mary's Abbey)	Beauchamp	
15.4	York	–	
Wh/31	Epworth; ?Gisborough	Mowbray (probably)	?Luvetot (W/P)

B=Bruce 1868; H=Hohler *c.*1940–1; N=Nichols 1865; P=Parker 1932; W=Ward 1892

*Edward III quartered the three lions of England with the French Royal Arms in 1337 in support of his claim to the French throne. The ancient French arms were blue with gold fleurs-de-lis semy (scattered evenly throughout). In about 1400 Henry V of England followed the change made by Charles V of France who had reduced the number of fleurs-de-lis to three in about 1376 (Bedingfeld and Gwynne Jones 1993, 115).

Nottinghamshire designs in the study area included shields. Floor tiles made in the north before the mid 14th century rarely had designs of heraldic shields or were derived from heraldry. Only 4% of Usefleet and 5% of Decorated Mosaic designs may have had heraldic associations.

Heraldry on floor tiles at northern manor houses

The identifications of arms on Nottinghamshire tiles in the north are shown in Table 4.2 (for the difficulties of identifying heraldry on tiles, see Chapter 1). Most

attributions were to landholding families in the midlands. More than one identification has been made in several cases and the *Dictionary of Arms* suggests that there are several other possibilities (Chesshyre and Woodcock 1992).

At two sites, the heraldic designs were thought to refer to families who owned the property where the tiles were found (at Rossington and Epworth). The tiles at Rossington, south of Doncaster, were discovered in the ruins of a moated manor house thought to have belonged to the Mauley family, Lords of Doncaster. The tiles included examples of at least three heraldic designs (Wh/35, Wh/54 and design



Fig 4.2: Epworth Manor: Nottinghamshire tiles and brick paving in the kitchen. (After C. Hayfield 1984)

15.1) and one foliate design (Wh/70a). The shield of Wh/35 was thought to represent the arms of the Mauley family which had been accidentally reversed during production (or, on a bend sable, three eagles argent). The other well-provenanced designs were attributed to Deincourt or Bassilly (Wh/54) and to Cantilupe of Ilkeston, Derbyshire (design 15.1). Less certainly, the shields of Quincy and Fitzwilliam (branches of the Ferrers family) may also have been present (Wh/40 and 44; see Chapter 27).

At Epworth Manor only one heraldic design (Wh/31) – a lion rampant sinister – was used in the pavement (Fig 4.2). The floor was in the kitchen of a

substantial house belonging to the Mowbray family (Hayfield 1984). The design was interpreted as being the arms of Mowbray (gules, a lion rampant argent) but, again, with the design cut the right way round on the stamp and therefore reversed on the tiles. As shown in Figure 4.3, the heraldic tiles were set in blocks of nine with plain tiles used as spacers around them. A few non-heraldic Nottinghamshire designs were used at the cross points of the rows of plain tiles. Although the layout of the pavement remained coherent and all the tiles were of the Nottinghamshire Group, the combination of brick and tile in the floor suggests that it had been re-set in this location, presumably from elsewhere in the house.

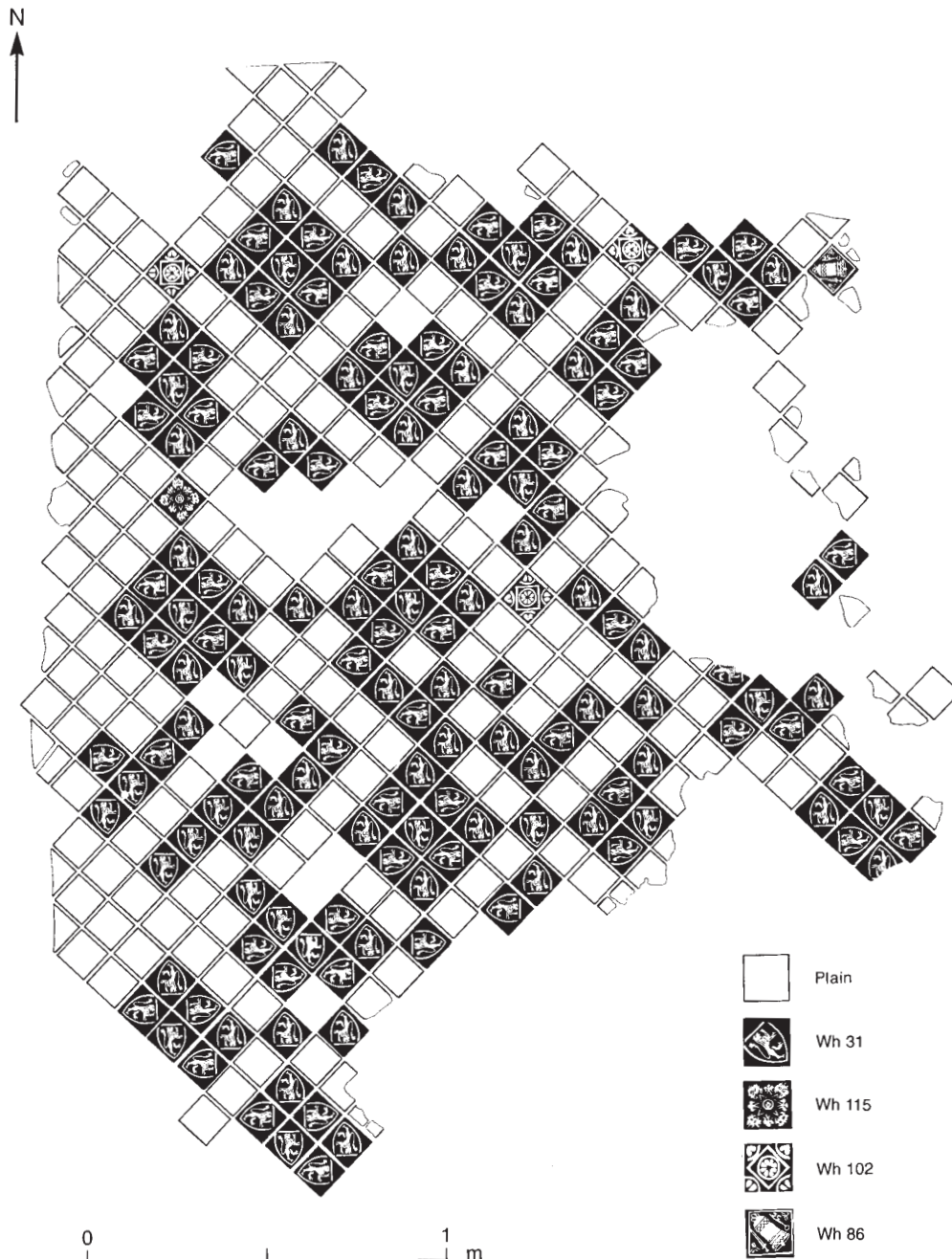


Fig 4.3: Epworth Manor, the tiled area in detail, showing the emphasis in this pavement on the display of the Mowbray arms. (After C. Hayfield 1984)

The pavement in the manor house at Epworth, with its single heraldic design laid out in blocks of nine, seems intended as a showpiece for the Mowbray shield, celebrating the wealth and status of the family in their own home. The tiles at Rossington displayed the arms of the owner alongside several other families, perhaps demonstrating affiliations by marriage or a more general association of status. The use of several heraldic designs together is much more usual than the single example at Epworth. The geographical isolation of Epworth manor might provide an explanation for this. Epworth lies in the middle of the Isle of Axholme, an area of north-west Lincolnshire which was bounded on all sides by rivers or bogs in the medieval period. The Mowbrays styled themselves 'Lords of the Isle of Axholme' at this period, as inscribed on seals dating from 1318–19 and 1348 (Chesshyre and Woodcock 1992, 117). It is possible that to some extent they viewed themselves as separate from other families in the region. Epworth seems to have been the main residence of the family in the second half of the 14th century. John, Lord Mowbray, was hanged in 1321/2 and his estates forfeited. His son was imprisoned in the Tower until his inheritance was restored in 1327. His grandson was born at Epworth in 1340 and inherited in 1361. The Mowbray family then prospered, raised in 1383 to Earls of Nottingham and, from 1392, to Dukes of Norfolk (*The Complete Peerage* volume 9, 366–88; Brault 1997b, II, 310).

The tiled floor at Rossington may have been contemporary with several public displays of piety and status on the part of the Mauley family, Lords of Doncaster. There was an effigy of Robert Mauley (c.1331) in the south nave aisle of York Minster, and several members of the Mauley family, identified by their arms, were represented in the middle window in the south aisle of the Minster until the fire of 1829 (both recorded by Withy in 1640; Brault 1997b, II, 289). The window is thought to have an early 14th-century date on the basis of the mail and armour. In Bainton Church, near Driffield, there is an effigy attributed to Edmund Mauley, Robert's brother, killed at Bannockburn in 1314. The Rossington manor was licensed to Warenne in 1331, reverting to Mauley in 1347 (Doubleday and Walden 1932, vol 8, 554–71). The male line ended in 1415. It is possible that those newly promoted or recently returned from disgrace were particularly interested in heraldic floor tiles in the first half of the 14th century. The tiles formed one of many ways in which their new status could be confirmed.

A closer examination of the designs used at Epworth and Rossington, and their distribution elsewhere, suggests that the Nottinghamshire tilers took full advantage of the desire for personal displays of this type. The Mowbray design stamp (Wh/31) was used on tiles at several other sites in the midlands, often with another heraldic stamp cut in the same style as the Mowbray shield (Wh/32). The arms of the other design could be attributed to Thomas FitzAlan, with

the shield once again reversed in error (Whitcomb 1956, 39). These two designs were used together at Belvoir Priory and Lockington Church in Leicestershire, at Dale Abbey and Morley Church in Derbyshire and at sites in Nottingham.

The design stamps of the heraldic tiles at Rossington were also used on several sites in the north-east midlands and, once again, the only asymmetrical design amongst them was back to front (Wh/35). The style of the Rossington designs suggested that they were intentionally made as part of a set. However, there is no evidence to indicate that the same designs were used together at sites other than Rossington and no particular link has been established between the families thought to be represented, except that they were landowners in the north-east midlands (Whitcomb 1956, 18). It seems that the Nottinghamshire tilers were careless in the manufacture of heraldic design stamps, often failing to reverse the design on the stamp. They re-used designs in many different locations, apparently without there necessarily being a link between the designs and the places in question. The general association with other members of noble rank appears to have had sufficient appeal to attract customers.

Heraldic tiles at some other sites

The inaccurate representation of coats of arms by the Nottinghamshire tilers contrasts with the care taken in portraying the heraldry correctly in pavements in some other regions.

A set of heraldic designs with an identifiable relationship were laid in a floor at Hailes Abbey, Gloucestershire (Eames 1980, 2, 202–3). Nine of the shields were related to Richard of Cornwall, who founded the abbey, and Edmund of Cornwall, who donated the relic of the Holy Blood. The pavement was dated to c.1277 and thought likely to have accompanied the rebuilding of the east end of the church in chevet form, in order to accommodate the many pilgrims attracted by the relic and its associations. Two other heraldic designs in this floor represented the husband and wife of a local family without any direct link to Cornwall, and they were presumed to be benefactors of the abbey. Three further heraldic designs were unidentified. The presence of the arms of local benefactors in the floor might suggest that the inspiration for the pavement was also local, coming from either that family or the abbey itself, rather than from the more exotic nobility. The abbey received a floor promoting its famous patrons, while the local benefactors were rewarded with the display of their arms alongside those of the highest in the land.

A rare instance of heraldic tiles laid in a family chapel was at Ludlow Castle, Shropshire, where all the designs related to the Mortimer family (Vince and Wilmott 1991). This chapel and pavement were thought to commemorate Mortimer's escape from the Tower of London in 1328. As at Hailes, the heraldic

designs were the right way round on the tiles in all cases. In addition, a high number of the Ludlow stamps showed marks of difference, rarely found on tiles, identifying individual family members. The stamps were clearly cut as a special commission to refer to real people and so the correct portrayal of the coats of arms was important. However, the design stamps at Ludlow were also used to make tiles for other sites, suggesting that the stamps were the property of the tilers and that the designs had a popular appeal to a wider audience. Similarly, heraldic designs at Cleeve Abbey, Somerset, were used at several other sites in the area (Ward-Perkins 1941; Eames 1980, 1, 195–6). The Cleeve tiles were thought to commemorate Edmund of Cornwall's marriage to Margaret de Clare in 1272.

There were other examples of later 13th century or c.1300 heraldic floors in the south and west midlands, at Worcester Cathedral and Bordesley Abbey, Worcestershire (Keen 1978; Stopford 1990a, 79–97). The heraldic designs at these sites were made as sets – as were the tiles at Hailes – with a repeated range of background motifs and similarly styled coats of arms. The stamps of the Bordesley tiles were only used in the church and the chapel at the gate of that monastery. Local landholding families were thought to be represented. This might have been an imitation of the Hailes floor, another local initiative for a site without quite such high status connections.

The only 13th-century heraldic designs on tiles in northern England were published by Shaw (1858, pls 7–12) as from the choir of Jervaulx Abbey. The tiles are not extant but may have been part of the Decorated Mosaic Group (see Chapter 14). A further twelve simple heraldic designs were recorded from Newminster Abbey, belonging to a version of decorated mosaic made for that site (Fig 15.4). Shaw's attempts to find a link between the coats of arms on the Jervaulx tiles and the names in the cartulary of that abbey were not successful. However, two of the identifications of the Newminster designs made by Hunter Blair were to documented benefactors of Newminster Abbey, while others were to men prominent in Northumberland in the first half of the 13th century (Honeyman *et al.* 1929). Further attributions were to noble families known to everyone. It was also suggested that those represented might have had political affiliations.

It is difficult to be certain that the simple designs on the 13th-century tiles were intended to represent actual families. It has been seen that many of the Decorated Mosaic designs were made in two versions, light-on-dark and dark-on-light. Several of the Newminster shields were also made with a counter-change of colours, perhaps showing that they were not intended as actual representations of families but alluded more generally to the idea of knighthood (see Fig 15.4). The Newminster shield that is interpreted as displaying the arms of France Ancient might equally represent a figure from Arthurian romance (Hunter Blair 1929, no. 11; Brault 1997, 22). False heraldry has been

suggested among 14th-century tile designs from Bawsey, Norfolk (Eames 1985, 26, fig 28). In some cases heraldic designs may have expressed popular ideas and associations rather than particular identities.

However, by the mid 14th century, when the Nottinghamshire tiles were made, coats of arms were valued by those who held them as property which could be inherited and also as marks of privilege, dignity or nobility, grantable by royal authority (Bedingfeld and Gwynn-Jones 1993, 32–4). In a commissioned pavement their correct portrayal is likely to have been a matter of concern to their owners.

Long distance production of personalised designs

In addition to the transportation difficulties involved in supplying tiles from a fixed base, the Nottinghamshire tilers faced the additional problem of supplying ostensibly personalised material over long distances. The level of knowledge or interest on the part of the tilers in getting the heraldry right, and reversing the shield on the stamp, seems slight in many cases. The arms of Lancaster after 1324 were displayed correctly on the Nottinghamshire tiles of Wh/28 and Wh/29 while the arms of England were not – of the five versions recorded by Whitcomb, four were either partly or entirely reversed on the tiles (Wh/23, Wh/24, Wh/26, Wh/27). The arms of England might well have been a standard design for the workshop, with those of Lancaster a special commission. Standard designs might have been copied and re-copied from existing stamps, changing from the right way round to back to front each time. Lesser-known shields may simply have been copied from a drawing or other material as if they could legitimately be shown either way round. It is notable that the Nottinghamshire tilers did reverse inscriptions, showing them correctly on the tiles in several designs of the series (for example, the lettering is correctly portrayed on the finished tiles of the zodiac design, Wh/127, also Wh/128 and Wh/129). It seems probable that many of the heraldic tiles made by the Nottinghamshire tilers were not specially commissioned by the families concerned, although they may have been purchased by those families in many instances. Heraldic designs were sufficiently popular and expressed enough glamour to make a satisfactory decorative and apparently personalised floor. There may not always have been a precise relationship between the heraldry and the site, or between the families represented by the shields.

Personal identifications among the Nottinghamshire tile designs were not restricted to coats of arms. Other sources of inspiration, and the desire for portraiture, were suggested by design Wh/73, which was closely similar to the king's head on 14th-century silver pennies (see, for example, North 1963 and 1975). Several other designs may have made visual reference to a name or trade in the same way as canting arms. The bell design could be associated with bell founders.

A butterfly design similar to Wh/85 forms the background to a window in the parish church of St Denys Walmgate, in York (Marks 1993, 12, and frontispiece). The window is of c.1350, contemporary with the Nottinghamshire tilery, and is thought to show a donor named Robert Skelton who was Chamberlain of York in 1353 and bailiff in 1353–6. Although a direct connection between the tile design and the donor in this window has not been established (and Wh/85 was a popular design, widely distributed in the north-east midlands), the comparison might suggest potential references.

The 14th-century floor tile assemblages in the north showed a new level of commercial awareness and aptitude on the part of the tilers, both in the designs and the physical properties of the tiles. There was strong secular interest in this material. It was seen as a way of demonstrating associations between people, real or otherwise, announcing success and new aspirations as well as making pious donations. The extensive personal references of the designs may have had a strong appeal to rising members of the aristocracy and also to administrators, craftsmen and traders outside the knightly class. Access was restricted, however, to sites linked with Nottinghamshire by water. The popularity of the tiles further north may also have been limited by the reduced relevance or lack of association with the heraldic designs. In some cases there may have been antagonism towards heraldry that mainly celebrated the people of another region.

Availability of other floor tile groups in the 14th century

Other groups of tiles that may have been contemporary with the Nottinghamshire Group are shown in Table 4.3. Some places in the Pennines and further west were supplied with tiles for the first time, for example the Cistercian abbey of Holm Cultram in Cumbria, the Dominican friary in Lancaster and the Augustinian priory at Bolton in Wharfedale. The much greater provision for the main eastern towns of Hull and York is emphasised by the material that supplemented the

supply of Nottinghamshire tiles to those places. It should be noted that the dating and other evidence for these small groups is very limited, particularly that from Holm Cultram. The dating depends largely on stylistic and typological similarities.

Small groups of material in the east of the study area

A small group of decorated tiles from York and Hull (Group 16; Fig 19.1) showed some similarities to the Nottinghamshire Group in design and ambition, but were of poor quality. The problems encountered by the tilers suggest a lack of technical ability or experience of making two-colour tiles and use of inappropriate materials. The tiles of Group 18 from Hull (Fig 19.3; no longer extant) had some similarities to Nottinghamshire material and may have been of better quality than those of Group 16. A 14th-century date for the Group 17 tiles from Meaux Abbey was suggested solely on the grounds of a stylistic similarity between the crowned head of design 17.1 and Wh/74 of the Nottinghamshire Group (Figs 19.2 and 18.1c). The anthropomorphic designs 17.5 and 17.6 also continued a theme of the Nottinghamshire designs. The stamps of these designs must have been cut by an artist but the manufacture of the tiles was so poor that the designs were barely visible on the tiles.

The Non-Standard Plain-glazed tiles at York and Hull were competently made, unusually having a slip underneath the glaze on green as well as yellow examples, which gave a light, bright finish. Plain-glazed tiles are discussed in more detail in Chapter 5 in relation to the major shift from patterned to plain tiled pavements in the later 14th century. These Non-Standard examples were dated from excavation to early in the 14th century. They may have been imported from the continent and are the earliest known arrivals of the new style of flooring in the study area. In York, these tiles were probably used in a floor in the Bedern Chapel. In Hull, the finds of these tiles and those of Group 16 were not *in situ*. If their find spots were indicative of earlier use, some examples may originally have been laid in houses.

Table 4.3: Small assemblages thought likely to be contemporary with the Nottinghamshire Group

<i>Group no. and/or name</i>	<i>Chapter reference for group details & dating</i>	<i>Figs</i>	<i>Sites supplied</i>	<i>Possible dating</i>
Group 10	Chapter 16	16.1–16.2	Bolton Priory	c.1325
Group 11	Chapter 16	16.4	Lancaster Dominican Friary	c.1325
Group 12	Chapter 17	17.1, 17.3	Holm Cultram Abbey	?14th century
Group 13	Chapter 17	17.4	Holm Cultram Abbey	?14th century
Group 14	Chapter 17	17.5	Holm Cultram Abbey	?14th century
Non-Standard Plain-glazed	Chapter 20	–	Hull and York	earlier 14th century
Group 16	Chapter 19	19.1	Hull and York	14th century
Group 17	Chapter 19	19.2	Meaux Abbey	14th century
Group 18	Chapter 19	19.3	Hull	14th century
Group 19	Chapter 19	19.4	Tynemouth Priory	At or after 1326

These small groups of material demonstrate the strong demand for floor tiles in York and Hull, despite the lack of local manufacturing expertise. They emphasise the growth of Hull in the first half of the 14th century. Wyke upon Hull was acquired by Edward I in 1293 and became the main outlet for York, developing rapidly under royal patronage as Kingston upon Hull. The site was inaccessible except by water before that date. Pottery from the Low Countries dating from *c.*1350 is commonly found in Hull, with only small quantities of earlier material (Armstrong and Ayers 1987, 140–6). The floor tiles suggested that there was a growing demand at a slightly earlier date. Although no Decorated Mosaic or earlier tiles are known from Hull, the Nottinghamshire tiles were probably in use here early in the life of that workshop (*c.*1325) and the Non-Standard Plain-glazed tiles were discarded here in the earlier 14th century.

The small extant assemblage of Group 19 tiles, from Tynemouth Priory on the east coast, could also have been imported (Fig 19.4). A nail hole was identified in one corner of one of the seven fragments – a feature which could suggest that the tiles were imported from the Low Countries or that they were made by craftsmen trained in the continental tradition. However, nail holes were also a feature of later 15th-century English decorated tiles and the dating of this group is insecure.

Manufacture and supply of 14th-century tiles in the west of the study area

In the west of the study area the sites with 14th-century floor tiles were monasteries. Their assemblages were probably individual responses to a demand for ceramic flooring in areas with no established producers. While the assemblages from Holm Cultram Abbey referred stylistically to material known further west, such as the Decorated Mosaic Group, the tiles at Bolton and Lancaster Priors referred to material known at sites in the north-west midlands.

The tiles of Group 10 from Bolton Priory provided the most detailed information for analysis (Figs 16.1–16.2). This tiler was not an artist but the tiles were technically competent. The maker had an economical approach, making only one size of square quarry and splitting it in various ways to extend the range of shapes. This would give greater flexibility when laying the pavement. The designs were created by combining the use of small stamps and ruled lines in a number of ways. Although this type of decoration would be more work than using a series of full-sized stamps, these features would be useful to someone only making a tiled floor once – ensuring that they did not invest in equipment which they would not use again. This approach would have suited an itinerant worker. The tools needed to make the tiles would be far less cumbersome to transport and store than an equivalent number of full-sized stamps.

The Lancaster Friary tiler also showed signs of competence rather than artistic ability or flair and the tiles could again have been produced with little specialist equipment (Fig 16.4). A manufacturing technique shared with the Bolton tiler, and with tilers working at Norton Priory in Cheshire, was evidenced by round holes of up to 4mm diameter indented in the upper surfaces of some of the more complex shapes at Lancaster. These are larger, deeper and rounder than the holes, almost certainly made by nails, found in the corners of some later medieval tiles (discussed in Chapter 5). They could have been made by pegs of some kind (see Fig 16.3 for an example from Bolton). They probably served a similar purpose to nail holes, either helping to hold the quarry in place or move it about.

The tile quarries in the west were thicker than contemporary material in the east. A mosaic tile of Group 13 from Holm Cultram was 42mm deep, the majority of those at Lancaster measured *c.*30mm and the Bolton tiles were *c.*26mm, similar to Decorated Mosaic. The Nottinghamshire tiles were *c.*23mm deep, those of Group 16 from Hull and York were *c.*19mm deep, while the Non-Standard Plain-glazed tiles from York and Hull measured only 15–17mm deep. The tiles of this period from the eastern areas were markedly lighter than earlier material and that in use further west. It suggests that there was a desire to reduce the costs of raw materials and transport in this part of the study area.

It is likely that the tiles at the western sites were made locally, perhaps by potters or other ceramic workers in the immediate vicinity of the monasteries. Although there was an awareness of contemporary floor tile design, there was no evidence for collaboration between sites, or instances of the tilers supplying more than one institution. The more southerly of the sites (Lancaster and Bolton) referred south, rather than east, for their inspiration. The extent of the pavements at these sites is unknown. The tiles at Holm Cultram were found in the north choir aisle of the church but the haphazard arrangement of various different types of tiling suggested that they had been reset in this location (Fig 17.2). These monasteries may have wished to emulate the use of floor tiles at churches elsewhere but did not have the same access to sources of supply.

Regional comparisons

On a countrywide basis, there appears to be a regionalised distribution of pavements with a predominance of heraldic designs in the later 13th and first half of the 14th century. Many of the pavements with these designs are from sites in the south-west, south Wales, south-west midlands, north-east midlands and Norfolk. The dating of the tiles in the south-west tends to be later 13th and earlier 14th century, while those in the north-east midlands are of the mid 14th century.

Heraldic designs on floor tiles did not feature as prominently in the south, south-east, north Wales, Ireland or the north-west, although there were notable exceptions, for example, the arms of England in the 13th century Westminster Abbey chapter house floor. Particularly marked is the absence of much heraldry in the repertoire of the 'Westminster tiler' working in the south midlands and south-east (uncertainly dated but perhaps in the second half of the 13th century; Ian Betts, pers comm; Degnan and Seeley 1988). They are also largely absent among the designs of the highly successful 14th-century industry at Penn in Buckinghamshire, suppliers of several royal sites. Heraldic designs seem to have had a stronger appeal among the aristocracy in regions at a distance from royalty.

Comparison of the floor tile industries in the north-east midlands with those further north might suggest regional differences in the organisation of manufacture. Manufacture of medieval floor tiles in the north-east midlands may not have become established until the later 13th century – much later than the Plain Mosaic workshop of the earlier 13th century further north. Tenth or eleventh-century tiles, similar to material found in York, were in use in Coventry (Chatwin 1936; Stokes 1986; Keen 1993). A 13th-century date is possible for some relief decorated tiles at Leicester Abbey and Repton, Derbyshire, and a few sites in Leicestershire were included in the south midlands distribution of Wessex tiles (Whitcomb 1956, 8; Norton 1994, 138). The distribution of the 'Westminster tiler' group (see above) also extended into Leicestershire but not further north. However, once established, floor tile manufacture and distribution in the north-east midlands was often based at urban sites and conducted alongside other types of ceramic production (although there were also site-based examples, as at monasteries such as Dale Abbey and Repton Priory). The existence of kilns making pottery, roof and floor tiles in Nottingham itself has already been noted. Another tilery operating in the earlier 14th century and thought to have been making

floor tiles, but not Nottinghamshire Group tiles, was located just outside Coventry at Stoke (Chatwin 1936; Eames 1980, 1, 226–7). Clay-working sites were strung out along the line of a coal outcrop north of Coventry (Gooder 1984). Chilvers Coton was one of these sites, with the remains found of at least 42 kilns making pottery and roof tiles as well as decorated floor tiles in the late 13th and early 14th centuries (Mayes and Scott 1984).

In contrast to the evidence from the north-east midlands, floor tile manufacture and distribution in Yorkshire in the 13th and earlier 14th centuries were often articulated through rural networks. The kiln sites known to have been used to make Plain Mosaic and Usefleet tiles were in rural locations. Roof tile and brick were being manufactured on the outskirts of towns in east Yorkshire by 1300 but at present there is little evidence for floor tiles being made in these locations. The brickworks outside the North Gate at Hull was working by 1303–4, with detailed accounts surviving for the end of the 14th and beginning of the 15th centuries (Brooks 1939; Drury 1981, 132). There was brick and roof tile making in Beverley in the 14th century (Salzman 1923, 180; McCarthy and Brooks 1988, 237; Moore 1991, 212). An earlier date might be implied by accounts referring to work on the Bedern, York (Harrison 1952, 33 and 36–7; Betts 1985, 354). In 1238–9 'tiles' for repairs to Bedern Hall were bought from Beverley and a workman was 'tiling' the walls of the chapel. The Hull brickworks was operated directly by the corporation and may have been used intermittently, while that at Beverley, also corporately owned, was leased out. The site of what became the Vicars Choral tilery in York had been purchased in 1292 but the date that roof tile production began here is not known (Betts 1985, 335 and 342). The only floor tile manufacture thought likely to have been located on an urban site in the north was the small scale and poor quality work of the Group 16 tilers, supplying sites in York and Hull in the 14th century. The rural base for floor tile manufacture in the north may have arisen from the strong tradition of monastic involvement in production in the study area.

5 Standardisation: Plain-glazed tiles in the Late Middle Ages

One of the major changes in pavement design in the late Middle Ages was the introduction of Plain-glazed tiled floors, a large proportion of which are thought to have been imported from the Low Countries. These floors were entirely made up of square tiles, glazed either yellow or dark brown/green; no decorated tiles were involved. Within the study area these Plain-glazed tiles had a more extensive and littoral distribution than earlier types (Fig 5.1). Similar tiles are widely found elsewhere in Britain and around the North Sea (see, for example, Norton 1976; Eames 1980, 1, 18–19 and 273–5; Keen 1984; Norton 1994; Nordeide 2000). They are usually referred to either as Flemish tiles, as this is the name sometimes used in documents, or as Netherlandish tiles, which reflects the modern geographical area of the home ports of the ships that brought them to England. In the analysis for this study they were referred to as Standard Plain-glazed tiles to avoid making assumptions about their origin from the outset. Although it appears probable that many were imported from the Netherlands, the label is retained because the question of their origin has yet to be fully resolved. Tiles of similar type but thought not to be imported from the Netherlands were designated Non-Standard Plain-glazed.

The attributes of both the Standard and Non-Standard tiles, and the origins of Standard examples, are discussed in Chapter 20. Following recording, comparison of the characteristics of Standard and Non-Standard tiles showed that, while the physical aspects of Standard tiles were generally uniform for the whole region, those of Non-Standard tiles varied considerably between sites, usually on a site by site basis. Their manufacture was sometimes, though not always, of poorer quality than that of the Standard tiles. A qualitative distinction was also identified among the Standard Plain-glazed tiles. Tiles on which the slip covered the whole of the upper surface of tiles were designated Grade 1 Standard, while tiles where the slip had been brushed on carelessly, leaving some of the tile surface without slip which then fired to a streaked yellow and brown, were designated Grade 2 Standard. Although there were often a few streaked tiles in an assemblage where the slip was otherwise well applied, a large majority of the tiles were usually of one grade or the other. However, the significance of the distinction between Grade 1 and 2 Standard tiles remained unclear. There was no correlation between variations in quality among Standard tiles and differences in either distribution or dating. No distinction is made between grades 1 and 2 Standard tiles in the following discussion.

The dating evidence is set out for each site in Chapter 27 and summarised and discussed in relation to Plain-glazed tiles as a whole in Chapter 20. Both

Standard and Non-Standard material were thought to date from the 14th, 15th and earlier 16th centuries. On present evidence it appears that some Non-Standard Plain-glazed tiles in Hull and York were earlier than Standard ones, having been discarded in the early/mid 14th century (discussed in Chapter 4). After this, no distinction in the date range of Standard and Non-Standard Plain-glazed tiles was apparent, with a preponderance of 15th-century dates for both types.

The fact that Plain-glazed tiles continued to be made and used over such a long period means that it is difficult to establish how far they were contemporary with other tile groups in the study area. As has been seen, the earliest Non-Standard examples were in use during the production of Decorated Mosaic or Nottinghamshire Group tiles. Standard tiles may have been contemporary with the Nottinghamshire Group in the second half of the 14th century but may not have been widely used in the north before the late 14th century, after the Nottinghamshire workshop had ceased production. The majority of Standard Plain-glazed floors with indications of date are of the 15th century. An unknown number of them will therefore have been contemporary with the 15th/early 16th-century decorated tile groups thought to have been made within the region (the Transpennine and Huby/Percy Groups, discussed in Chapter 6).

The usage of all four types of tiling (Standard Plain-glazed, Non-Standard Plain-glazed and the decorated Transpennine and Huby/Percy Groups) is discussed in Chapter 7. The striking change in style that Plain-glazed flooring represented, the questions arising from the importation of Standard Plain-glazed tiles to the region and the distributions of Standard and Non-Standard Plain-glazed tiles are all discussed below. Study of Plain-glazed tiles will, however, always be hindered by the limited number of recordable manufacturing characteristics on these tiles. Decorated tiles can be characterised much more closely. It is consequently more difficult to identify the products of individual workshops among Plain-glazed tiles and to compare them with the better defined groups of decorated tiles. Although few firm conclusions can be drawn at present, archaeologists have paid relatively little attention to Plain-glazed assemblages to date and it is likely that the dataset will improve in future. Collaborative work on material either side of the North Sea is needed.

Imports from the Netherlands

Floor tiles were one item among many manufactured in the Low Countries and documented as imports to England in the later 14th and 15th centuries (Childs 1986, appendix B; Harding 1995, 164–5; Gaimster

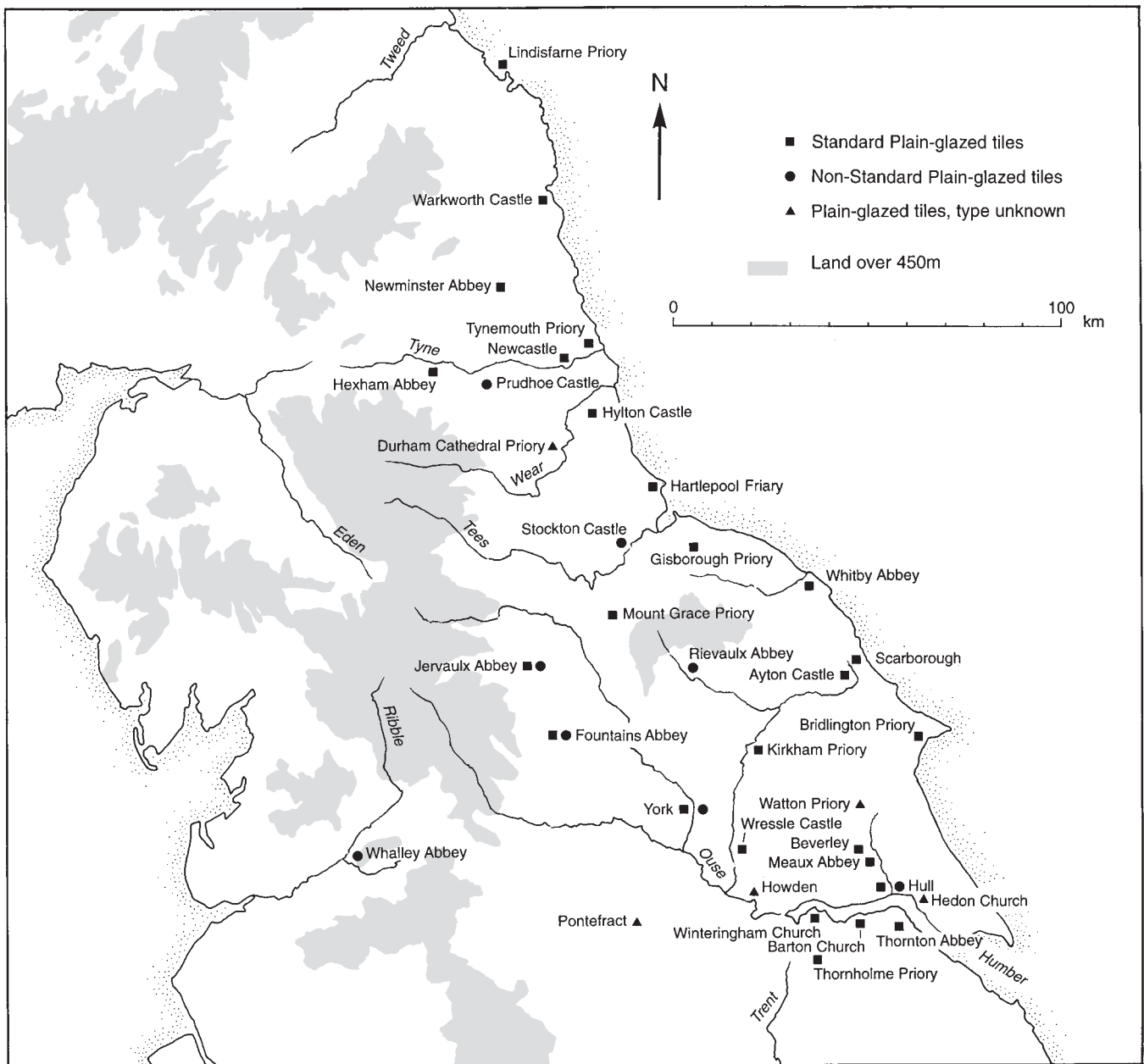


Fig 5.1: Sites with Plain-glazed tiles. In several of the main towns, Plain-glazed tiles were used at more than one location. For a full list, see Chapter 20, Table 20.5

and Nenck 1997, 171–96). A wide range of goods was brought to England from the comparatively highly urbanised and industrialised Low Countries, with the transshipment of exotic materials from the Mediterranean or the Baltic, bulk products such as wine, and the export of small manufactured innovations or novelties (including household furniture, furnishings, implements and dress accessories; see for example Nicholas 1992; Barron and Saul 1995). Wool, and later cloth, were exported from England. Imports of floor tiles to England were listed in customs accounts and mentioned occasionally in wills and fabric rolls (see Salzman 1923, 180–2; Ward-Perkins 1937, 443; Salzman 1952, 140–8; Knapp 1956, 29–33; Lane 1960, 53; Keen 1972, 148; 1984; Childs 1986; Norton 1994, 149–53; Wade 1995).

The influence of the Low Countries in England in the late Middle Ages was predominantly on urban communities, and was particularly relevant to towns closest to the continent. Discussing the impact on London, Vanessa Harding (1995, 164–5) wrote: ‘It would be wrong to overstate the extent to which trade integrated the material culture and consumption patterns of the two areas but mutual influences were strong, and it is striking how many elements in the domestic setting, in dress and furnishings, items of food and drink, even objects of devotion, were common to urban communities on both sides of the Channel.’ London, the only really substantial town in England, attracted by far the largest numbers of immigrants. Their numbers rose following royal encouragement from 1331 (Barron 1995, 11–14), with a further

influx from the 1440s (Weightman 1993, 45). York was the largest town in the north of England. From c.1300 Hull developed as its outlet on the east coast. Access to imports in the north was via a number of ports along the east coast that were connected to their rural hinterlands by the major river systems (Humber, Ouse, Tees, Wear and Tyne). The innovations in material culture flowed mainly in one direction, with England largely the recipient of urban practices developed in the more sophisticated Low Countries.

Layout of Plain-glazed pavements

There was nothing innovative about the idea of plain-glazed floor tiles *per se* in 14th-century England. All earlier English decorated tile series had included plain tiles, used as borders or dividers between blocks of decorated examples. Also, although the decorated English tiles of c.1300 can only occasionally be considered works of great artistic achievement, they could be argued to be superior to the plain-glazed Netherlandish product in terms of expression and decorative effect. The increasingly free and vivacious designs of English material in the 14th century and the high level of technical innovation in floor tile manufacture in the country as a whole might be thought to have had greater potential for adaptation to suit new markets and ideas. As has been seen, the English-made decorated floor tiles of the 14th century included a high number of personalised designs, referring to individual families, that had attracted new patrons and a wider market outside the church.

The novel feature of the Standard Plain-glazed tiles was the way in which they were laid in a simple, abstract uniform style. The extent of uniformity in the layout of these tiles is striking. They were almost invariably arranged in a simple chequer pattern, made by alternating light and dark coloured tiles. The floor in the treasury of the belfry, Bruges, provides an example from the Netherlands (Fig 5.2). This is dated by one tile with the date 1463 scratched through the slip under the glaze (Fig 5.3). In southern England the floors of

imported tiles at Winchester College were also chequered (Norton 1976). The only substantial extant example in the study area is the chequered pavement in the Consistory Court of York Minster, one of three vestries on the south-east side of the Minster (Fig 20.1). Some paving of this type, also laid in a chequer, remains in the carrels at the south end of the west claustral walk at Thornton Abbey (Fig 20.2). Plain-glazed pavements seen by Browne in the crypt of York Minster in the 19th century were also laid in a chequered arrangement (1847, 210–11), as were those photographed by Beulah in the north-east of the cloister at Meaux (Fig 27.27) and those found in various buildings at Pontefract Priory (Bellamy 1965). The paving found by Hope in the canon's chapel at Watton was also chequered (1901a) and the tiles in the church of the Franciscan friary, Hartlepool, were thought to have been laid in this way (Daniels 1986). The quantities of different coloured tiles required were not mentioned in any of the documented cases of floor tile purchases, presumably because all orders were sent out with half yellow and half dark green/brown coloured tiles.

The large number of arrangements that can be made with plain square light and dark coloured tiles was demonstrated by the Plain Mosaic tiling of the 13th century (Fig 10.3). The only variations among Plain-glazed pavements were found where some tiles were laid on the same axis as a building, with the rest set on the diagonal. Figure 5.2 shows, for example, that the tiles in the belfry at Bruges were laid with one line of Plain-glazed tiles set square against the wall and the rest of the floor laid on the diagonal. Tiles on both axes were laid in alternating colours. Occasional modifications were also found in the study area. The impressions in mortar in a house in York (Barley Hall) suggested that the room was divided across the middle lengthways and breadthways by lines of tiles set square with the room (Fig 5.4). This contrasted with the tiles in the service passage where the tiles were all laid on the same axis as the building (Fig 5.5). In St Peter's Church, Barton-upon-Humber, tiles found under the



Fig 5.2: Plain-glazed paving in the belfry, Bruges. (Photograph by Alan Vince)



Fig 5.3: Plain-glazed tile inscribed with the date 1463 and possibly some initials, in the belfry, Bruges (Photograph by Alan Vince)

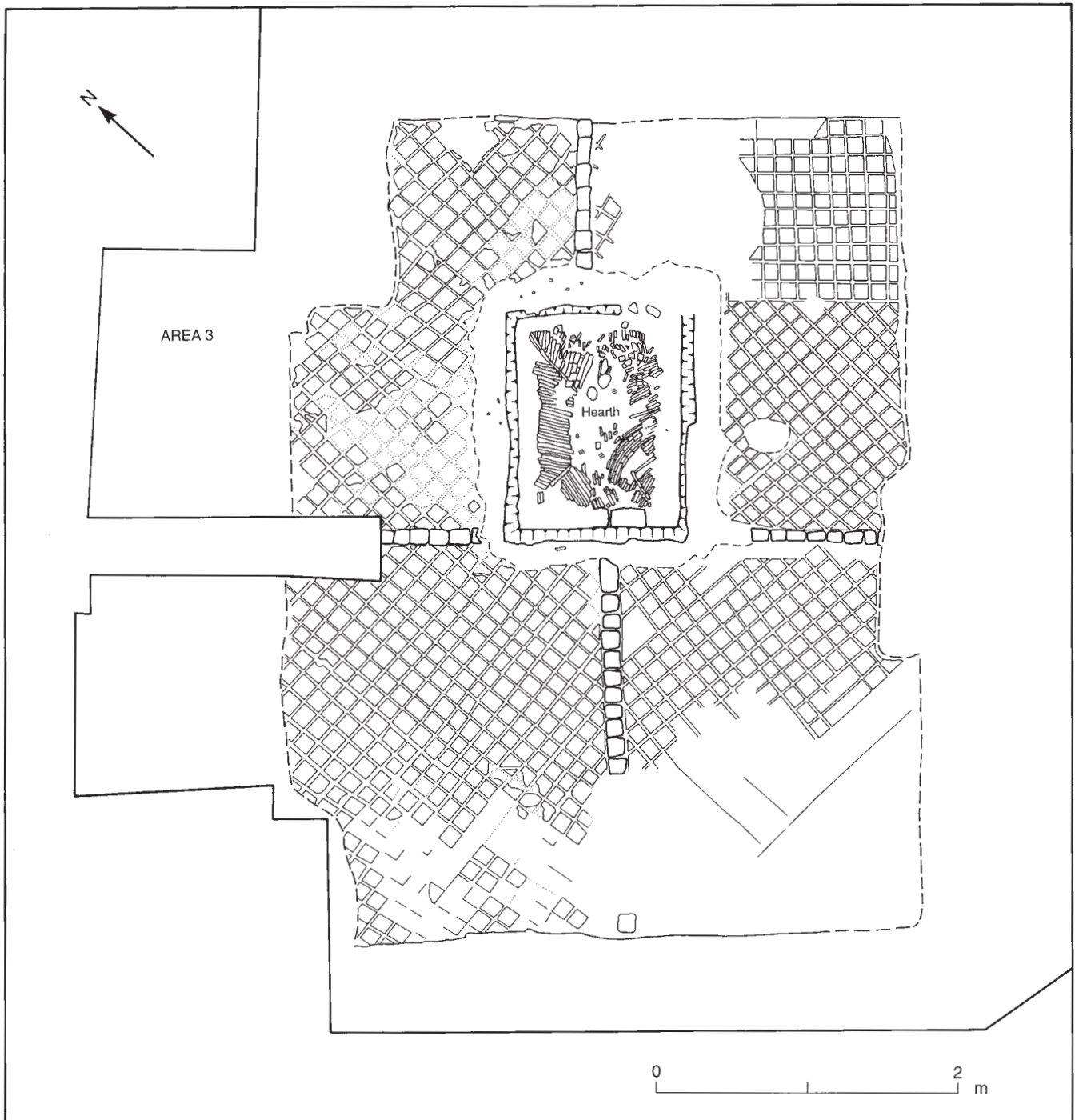


Fig 5.4: Impressions of Plain-glazed floor tiles in the hall at Barley Hall, York (drawn from York Archaeological Trust excavation plans). Scale 1:40

chancel arch were set in blocks of four, alternating light and dark colours (Rodwell and Rodwell 1981).

Further variations in layout were suggested by finds of more than one size of Plain-glazed tile at several sites (see Chapter 20). While these may have represented separate purchases, documented examples show that two sizes were sometimes part of the same order. At Winchester 45,800 small and 1,000 large and at York 600 small and 600 large tiles were purchased together (Norton 1976, 30; Raine 1859, 36). It is possible that differently sized tiles were intended for use in particular spaces, either to avoid the need to split tiles into small-

er sizes, or to delineate different areas of use. The two sizes of tiles documented in the York Minster fabric rolls were used in the crypt and, when first recorded in the mid 19th century, they were laid in separate areas (Browne 1847, 210–11). Borders and dividing lines could have been made using different sized tiles, although the extant examples noted above only involved using tiles of the same size but set on different axes.

Standard Plain-glazed tiles were, therefore, used in a consistent way, with very little divergence from the standardised chequered arrangement. One advantage of this was that they were much easier to make into a

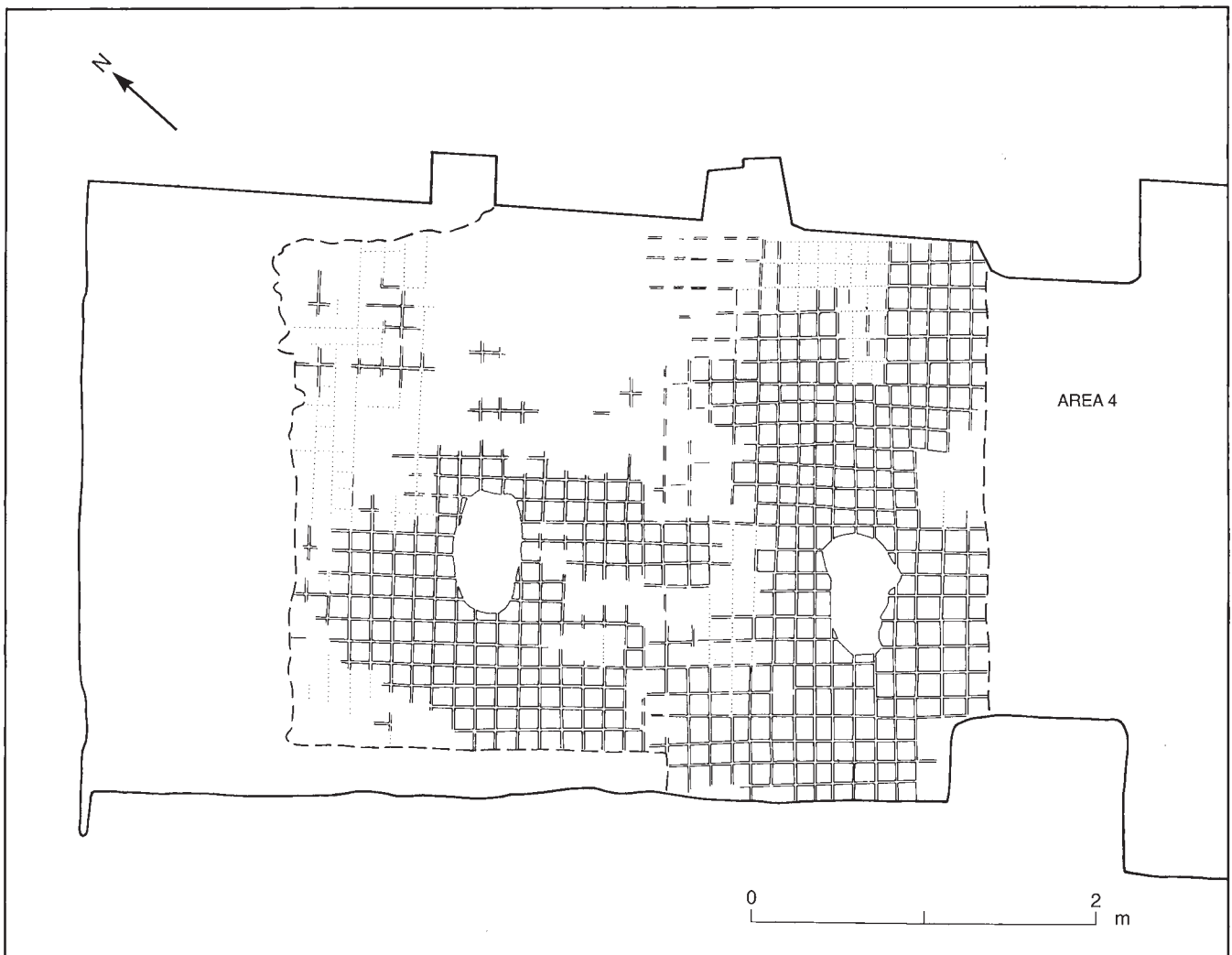


Fig 5.5: Impressions of Plain-glazed floor tiles in the services passage at Barley Hall, York (drawn from York Archaeological Trust excavation plans). Scale 1:40

floor than decorated tiles. Decorated tiles often had to be laid out in a certain way to make sense of their designs, some of which were circular patterns made up of nine, twelve or sixteen square tiles. To do this, the person laying the floor needed to understand the designs and to plan the pavement so that the decorated arrangements fitted into it in a coherent manner. The simple chequered arrangement meant that those constructing the floor did not need to have any understanding or knowledge of the tiles. These tiles could, therefore, be successfully produced some distance away, and transported and sold via a number of middlemen. No specialist information, instruction or communication were necessary for their use. They were far more commercially viable for large-scale production and export than many of their English counterparts.

The attraction of imported chequered flooring in England

In the 14th century, Netherlandish material culture exemplified a successful, commercially based lifestyle. Such a lifestyle could be embraced in more rural

England by buying continental goods. In an attempt to show how new contexts for everyday goods might illuminate some aspects of Netherlandish influence, David Gaimster has looked at the use of pottery with religious iconography in Netherlandish paintings of the 15th century. He suggested that the paintings provided religious experiences with a domestic setting, expressing the idea of everyday life as a religious act (1997). Other work has shown that objects taken up by people in England were sometimes adapted for use in different contexts from those in which they appeared on the continent. In a study of the ownership and use of tapestries, for example, it seems that in England they were confined to private collections and personal ownership, while in France and the Netherlands they were widely used and owned by major religious institutions (McKendrick 1995). Observed differences between England and the Netherlands also included features of urban life which were simply not adopted in England, for example some religious movements or practices, or other innovations which were taken up very quickly, such as printing (Barron 1995, 16–21).

The intrinsic qualities of the new Plain-glazed floors may have conveyed an impression of a life which English customers aspired to. This impression may be apparent in Netherlandish paintings of the period. Chequered flooring is a common feature of pictures showing the interiors of the houses of wealthy families, in part because they were a useful means of creating depth. In the paintings, the floors were used to rationalise space, giving perspective, order and clarity to the scene, and provided a striking background for the display of people, furniture and furnishings. Part of the attraction of such floors to English customers may have been the look of detached orderliness they conveyed, perhaps expressing a desire for a materially rich, urbane lifestyle. It is possible that these chequered pavements were associated in England with a contemporary image of a commercially successful Netherlandish élite. This is suggested by the way tiling was specifically listed as 'Flanders' tile in wills and fabric rolls of the period, apparently regardless of their place of purchase. In the two cases where there are thought to be extant examples of documented 'Flanders' tiles (at Winchester College and York Minster; see further below) the tiles for one site were imported specifically for the customer whereas the others were probably bought in York, having been imported by a merchant. The origin of the York Minster tiles was of no significance to the building accounts. 'Flanders' tile seems to have referred to a continental type or style of paving as much as to the origin of the tiles.

Those purchasing Plain-glazed pavements in England, at least in the 15th century, were adopting something they thought of as a Netherlandish artefact. The simple geometric abstraction and highly standardised layout of the pavements might be seen as a visual expression of an increasingly homogeneous, rationalised and impersonal urban culture. The chequered fashion appears in other media in England after 1300. A tradesman's house built of knapped flint alternated with blocks of paler stone is known in London in the first half of the 14th century (Schofield 1993, 99, pl 80). Chequered patterning in buildings using other materials, such as brick, also dated from the 14th century (Paul Drury, pers. comm.). In northern England, a comparison can also be made between Plain-glazed and Plain Mosaic paving – the floor tiles introduced to the region by monastic sites in the 13th century and still in use at many of those sites – suggesting that in some circumstances Plain-glazed tiles could be seen as a return to stylistic fundamentals.

Quantities and costs of imported tiles

As noted above, imports of floor tiles to England were among the goods listed in customs accounts. The customs accounts for Hull survived particularly well for the period between 1453 and 1490 (Childs 1986). The 28 surviving accounts were not consecutive but covered a period equivalent to nine years' trade. Customs duty

was payable on all imports and exports unless there was an exemption. Otherwise, apart from goods traded illegally, the accounts are thought to be an accurate record of overseas trade (Childs 1986, xix–xx; although disputes involving the Hanse at this time may have had an impact on volumes traded). They recorded the ship master, the ship's name and home port, commodities being shipped, their quantity, ownership and value. In all cases the accounts specify whether they were bricks or floor tiles or, as in one case, '*lapidum pavimentalium*'. The jurisdiction of the port of Hull extended along the Yorkshire and north Lincolnshire coasts, including the outports of Scarborough and Grimsby. The accounts may therefore indicate the scale of floor tile imports to a sizeable section of the study area in the second half of the 15th century. All issues regarding identifying, on the ground, the floor tiles mentioned in the documents are discussed in Chapter 20: *Plain-glazed tiles*.

The figures in the accounts suggested that while floor tiles were imported fairly regularly over the period, relatively small quantities were brought in each time. Both bricks and tiles were imported in quantities of 'M' which might refer to either a thousand or a thousandweight (ten hundredweights) and 'C' which might mean a hundred, hundredweight or hundred by tale. A hundredweight could vary between 100 and 112lbs. A hundred by tale could be 'short'=100lbs, or 'long'=112lbs or more, depending on the commodity (Childs 1986). Fourteen shipments of floor tiles, with a total of 22.7M, were recorded as imports to Hull. Most of the floor tile loads arrived in 1–2M lots. Imports of 24.7M of floor tiles over a total of nine years gives an average figure of 2.7M per year. Standard Plain-glazed tiles of *c.*110mm across and 25mm in depth from the Gilbertine Priory in York weighed approximately 1.25lbs each. If the floor tiles were imported by weight and one hundredweight was speculatively taken as 112lbs, 2.7M would pave an area of about 27m². If imported by number, 2,500 tiles of *c.*110mm across would pave an area of perhaps 35m². Of course, larger tiles would pave a much bigger area. On the basis of weight, however, the average annual imports to Hull would not have been enough to pave much more than one chancel or large-sized room. Over the same period, five shipments brought in 47M of bricks. Bricks were therefore imported infrequently but in larger quantities. The customs accounts for Newcastle that survive from the second half of the 15th century listed some slightly larger loads of floor tiles, with 3M of paving tiles imported in 1456/7 and 1461/2 (Wade 1995, 36 and 58).

The relatively small loads of floor tiles in the accounts might suggest that they were used as ballast, accompanying bulky, light weight materials. Several loads that included floor tiles or bricks did also include goods such as teasels and hops that might have required ballast. However, all the shipments varied and they always contained several different types of goods, such as salt, wine, wheat, linen, garlic, herring, timber, pots, baskets, wainscot, masts, bowstaves etc. Both hops and teasels were also carried without ceramics, sometimes with iron.

It would be surprising if an effort had not been made to secure the balance of each load but it seems unlikely that this was the main reason for the transport of any goods.

In the study area, extant tiles of Standard Plain-glazed type can only be linked with documentary evidence at York Minster. As noted above, two sizes of Flanders tile were listed in the fabric roll of 1415 (Raine 1859, 36; and Chapter 20: *Plain-glazed tiles*). In this order 600 large tiles, thought to measure 275mm across, were bought from William Newland for 33s 4d. Six hundred small tiles, thought to measure 175mm across, were bought for 8s 4d. A further 8d was paid for carriage. The difference in price for the large and small tiles is explained by the difference in area they would have covered. The large tiles would have paved an area of *c.*60m², while the smaller tiles would have paved *c.*20m². A square metre of the 275mm tiles cost 9d while the same area of 175mm tiles cost 11d. The cost per metre of flooring is therefore a little less for the large tiles than the small ones. The greater expense of the smaller tiles might relate either to the additional time taken in manufacture to cut them out or, if the prices quoted included the cost of laying the tiles, the additional time needed to lay them.

The figures for Plain-glazed tiles bought by Winchester College in 1396/7 showed a similar difference in the cost of the two sizes of tiles (Norton 1976). Here a total of 46,800 tiles were purchased. The 1000 larger tiles cost 13s 4d and are thought to be the 229mm (9") examples that survive in small numbers in the cloister. The 45,800 smaller tiles cost 6s 8d a thousand and are thought to be the 128mm (5") tiles in the Muniment Rooms. These figures give a cost per square metre of 3d and 5d for the large and small tiles respectively.

Additional payments listed in the Winchester College accounts included the cost of unloading from the ship, which was 4s 10d, and carriage from the port to Winchester, which was 60s 6d. These charges add about 1d per square metre to the total cost of the tiles. A further payment of 2s per 1,000 tiles was made for laying the tiles. This adds a maximum of 1.5d per square metre to the cost of the small tiles. The total cost of the Winchester tiles therefore amounts to about 5.5d and 7.5d per square metre for the large and small tiles respectively.

At York the only additional cost recorded is the 8d paid for carriage (0.1d per square metre). Even if the York prices included the cost of laying the tiles, which some work suggests is unlikely (Swanson 1983, 28–9), the total costs remain at about 9d and 11d per square metre, substantially more expensive than at Winchester. This disparity might be explained by the difference of 18 or 19 years between the two purchases (the Winchester purchases were made in 1396/7 and those in York in 1415). Comparing prices of purchases made at different times is difficult because any variation may be explicable in purely monetary terms. However, the prices of building materials are not thought to have increased greatly between the dates of the Winchester and York purchases.

Remarkable consistency was apparent in the costs of building materials and also in the wages paid to building craftsmen in York between 1360 and 1450 (Swanson 1983, 26–8). The difference in price seems more likely to reflect differences in the size of the orders and the numbers of middlemen involved. The much larger Winchester College order was bought directly from the ship, presumably at Southampton, with the college organising payment for unloading and transport to Winchester. The journey from the Humber to York is about twice the distance of Southampton to Winchester and cannot be completed on one tide. The necessary delays and additional handling charges may have been the reason for the high cost of buying small quantities of imported tiles in York. If a customer were not already secured for the York tiles, their high price might also include charges for storage and for the risk of speculation. However, the relatively small scale of individual loads of floor tiles listed in the customs accounts might suggest that these goods were being brought in as specific orders for known customers, rather than for more speculative sale on the open market.

Although the York order was small compared with that of Winchester College, it represented half the average annual imports in the Hull customs accounts, if taken by number of tiles, and a whole year's worth of imports, if taken by weight. Very large orders, similar to that for Winchester College, do not appear in the Hull accounts even though large areas of this type of tiling were found at some sites in the north. These have been found, for example, at some urban friaries, such as the Franciscan friary in Hartlepool (Daniels 1986), and possibly the Dominican friary, Newcastle, the Dominican priory, Beverley, the Gilbertine priory, York, and Thornholme Priory, a rural Augustinian site south of the Humber. In all these cases, at least some parts of the churches were paved with Plain-glazed tiles. It seems likely that some larger scale individual orders, like that for Westminster College, were made for floor tiles in the north-east. The supply of these tiles may have been organised differently from those noted in the accounts for Hull.

Production and distribution

No medieval kiln sites for the manufacture of Plain-glazed floor tiles are known in the Netherlands. In all cases the home port of ships delivering floor tiles to Hull was in the Netherlands and in all cases the owners and shippers were not British. Tiles were imported on ships attributed to Amsterdam, Rotterdam, Goes, Edam, Middelburg, Dordrecht, Selice (Zierickzee) and Veere, in the counties of Holland and Zeeland. The greatest number of shipments (five) came in ships from Goes, while three loads were in ships from Zierickzee.

Standard Plain-glazed tiles were used at both urban and rural sites in the north-east of the study area, but they were concentrated along the eastern seaboard (Fig 5.1). These were the only types of medieval tiles widely used on east coast sites north of the River Tees.

Table 5.1: Small assemblages possibly of the later 14th or 15th centuries

<i>Group no./design no. prefix</i>	<i>Chapter reference for group details & dating</i>	<i>Fig</i>	<i>Sites supplied</i>	<i>Dating</i>
20	Chapter 21	21.1	Cowick Manor	c.1400
21	Chapter 21	21.2	Rievaulx Abbey and Whalley Abbey	Later 14th century on
22	Chapter 21	21.3	Whalley Abbey	Later 14th century on
34	Chapter 25	25.3	Fountains Abbey	–

Non-Standard tiles were usually found further inland. The absence of Standard tiles from ports such as Carlisle and other towns west of the Pennines demonstrates how cut off the west of the region was from continental Europe. Not only was there no direct contact with imports from the Netherlands, there was also no transshipment within Britain. It is likely that there will eventually be finds in the north-west since imported tiles are known further south on the western side of England (Keen 1984) and are suspected in Ireland (Norton 1994). However, their general absence in the north-west appears genuine and concurs with the small amounts of imported medieval pottery found on Cumbrian sites (McCarthy and Brooks 1992, 36).

On the east coast, Fig 5.1 demonstrates that Standard Plain-glazed tiles were transhipped along the major waterways to some extent. However, where Standard tiles penetrated to inland sites they tended to be used in addition to Non-Standard types, forming a relatively small proportion of the overall assemblage (for example, at Fountains and Jervaulx).

Paucity of floor tile manufacture c.1350–c.1450

If, as seems likely, most Standard Plain-glazed tiles were made overseas, manufacture of floor tiles on any scale within the study area ceased for a lengthy period following the end of Decorated Mosaic production in the earlier 14th century. One small group of decorated tiles, dated c.1400 and found at Cowick Manor, were also thought to be imports, probably from France (Group 20). The other tile groups listed in Table 5.1 may have been made in the study area in the later 14th or 15th centuries. Further small and poorly dated assemblages of two-colour tiles made in the study area are discussed in Chapter 6, but only two of these are at all likely to date to c.1400 (Groups 25 and 26). All the evidence suggests that floor tile manufacture was only carried out sporadically and on a small and localised scale in the study area in the 14th and earlier 15th centuries.

Some of these small groups of tiles were made for Whalley Abbey, a Cistercian monastery that had not previously had floor tiles (Groups 21, 22 and 26). Whalley was a late foundation, of 1296, located in the Ribble valley on the east side of the Pennines. Building work proceeded very slowly here, with construction of the church started in 1330 but unfinished in 1345 and 1362 (see entry 92, Chapter 27). Tiling the church floor might, consequently, have only commenced in

the late 14th century. The several groups of tiles at this site, which also included several sizes of Plain-glazed tiles, suggested that there was a desire for similar furnishings to earlier foundations in the region but some difficulty in obtaining them. Supply on a larger scale was eventually secured in the 15th century, when substantial numbers of Transpennine Group tiles were made for the abbey (see Chapter 6).

The straight-sided mosaic tiles at the abbeys of Whalley and Rievaulx (Group 21) and perhaps another set of simple mosaic tiles, Group 34 at Fountains, may have emulated the old Plain Mosaic pavements. Only the tiles of Group 22 from Whalley Abbey differed from material previously known in the region, possibly forming part of a tomb cover. These tiles were decorated by hand, with an inscription and probably an effigy (Fig 21.3). Commemorations of this type, using tiles rather than stone or brass, are known in both England and France and dated variously between the 13th and earlier 16th century (see Chapter 21).

The tiles of Group 20 at Cowick Manor were of a series well known in Sussex and south-east England, in the area of Dieppe in Normandy, and around Bordeaux and Dublin (Norton 1993a). The site, just south of the Humber near Snaith, was thought to have belonged to Edward II (Hayfield and Greig 1989; 1990). The long distance supply of these tiles, like the many tile groups at Whalley, demonstrated how difficult it was for people in northern England to get access to decorated tiles of reasonable quality at this period. It is possible that they were only available to Cowick because of the royal connections of that site.

The manufacture of floor tiles in northern England, therefore, was much reduced and fragmented by c.1350 and remained so until c.1450. However, any suggestion that industries such as the Nottinghamshire and Penn tileries ended in the later 14th century through lack of demand for floor tiles ignores the evidence for the success of Plain-glazed tiles over this period. These impersonal, standardised, homogeneous floors were favoured by many religious institutions and wealthy families in northern England as elsewhere. Local producers of more traditional types of tiles struggled in the later 14th century, both at the urban sites of Hull and York and at rural monasteries. The dispassionate interiors created by the Plain-glazed tiles may have better expressed the aspirations of the majority of customers. The impact of Flemish manufacturing practices was evident in the revival of home production of decorated tiles in the later 15th century.

6 Revival in decoration and home production, c.1450

Two successful workshops making decorated tiles can be identified in the 15th and 16th centuries (the Transpennine and Huby/Percy Groups). The Huby/Percy Group was securely dated to c.1500, while the Transpennine Group was thought most likely to be operational from the third quarter of the 15th century. The physical characteristics of these two groups were markedly similar to each other (see Chapters 22–23) and also to those of the Standard Plain-glazed tiles of Grade 2 imported from the Netherlands (Chapter 20). Instead of the five nail holes of the imported tiles, the Transpennine and Huby tiles had four nail holes (found on c.20% of the quarries). Like the Grade 2 Standard Plain-glazed tiles, the slip was badly applied, often not confined to the stamped impression of the designs and smeared over much of the surface of the tile. Also like the Grade 2 Plain-glazed examples, the glaze was patchily applied and missing in places. Distinguishing features between the two decorated tile groups were the larger size of the Huby/Percy tiles, some of their designs and the layout of their pavements (see further below). However, the similarities between the two groups suggested that they were the products of related workshops, or perhaps the same workshop operating over a long period of time. Comparisons with the imported Plain-glazed tiles suggested that the Transpennine and Huby/Percy tilers used some manufacturing techniques known in the Netherlands.

Despite exhibiting features associated with continental manufacture, the Transpennine and Huby/Percy tiles were almost certainly made in the north of England. This was suggested by their inland distributions (Fig 6.1), which largely respected occurrences of Standard Plain-glazed tiles along the eastern seaboard (cf. Fig 5.1). It was also suggested by the tile designs – particularly those of the Huby/Percy Group – which included a high proportion with heraldry and epigraphs that referred to local figures (Fig 23.1). Of 40 Huby/Percy designs, 24 were heraldic (60%) and all but one of those had an epigraph in a band encircling the shield. Other designs were personalised through the inclusion of initials, a rebus or inscription.

Heraldry on tiles in c.1500

The attributions for the personalised designs and the dating evidence they provided are detailed in Chapter 23: *Huby/Percy Group*. Heraldry on tiles in the late 15th century identified specific, sometimes well-known, individuals or institutions rather than whole families. Several attributions related to the abbots and abbey of Fountains. Designs 24.1–24.4 displayed the arms, motto and initials of Marmaduke Huby, abbot of Fountains 1494–1526 (Fig 23.1). Designs 24.5–24.8

displayed a shield and the three horseshoes of Fountains Abbey. Designs 24.26 and 24.27 may have included the initials J and D and have referred to Huby's predecessor, John Darnton, abbot of Fountains 1478–1494. Several other designs had a crescent and shackle pin in the outer corners of the four-tile arrangements, which was a badge used by the Percy family (Fig 23.1; designs 24.9–24.16). Designs 24.14–24.16 showed the arms of Henry Algernon Percy, fifth earl of Northumberland, with the motto HONY SOYT QUY M[AL Y PE]NSE in the form of a garter. The fifth earl was made a Knight of the Garter in 1495 and died in 1527. The other Percy attributions were not precisely established. Design 24.40 (Fig 23.2), with the arms of Tunstall and Boynton, related to the Hildyard family from Winestead in east Yorkshire, and may have been commissioned by Sir Christopher Hildyard in the earlier 16th century. Design 24.30 referred to the Stanleys, earls of Derby, in this case probably to Thomas Lord Stanley, first earl of Derby KG, 1483–1504.

These designs were often complex compared to earlier examples, with the heraldry spread over four tiles and shown in some detail, and with the inscription expressing the allegiances and identities of those represented. The format of the Huby/Percy designs, with the shield encircled by an inscription, is seen on the single tile Nottinghamshire design Wh/129 (Fig 18.2). A few Nottinghamshire designs were also spread over four tiles although with the shield set on the diagonal and without any inscription (see for example the arms of England and Lancaster in Wh/23 and Wh/28; Fig 18.2). Unlike the Nottinghamshire heraldic designs, the arms of the Huby/Percy tiles were all correctly displayed, as far as is known.

Customers for decorated floor tiles in the 15th century

As shown in Figure 6.1, the Transpennine and Huby/Percy tiles were supplied to sites in the southern part of the study area, concentrated in Yorkshire but extending across the Pennines into Lancashire and south of the Humber into north Lincolnshire. Like the small groups of decorated tiles discussed in the previous chapter, the tiles of the Transpennine Group were mainly used to supply the rural monasteries, many of which had first had tiled floors in the 13th century (see Table 6.1). The sites with Transpennine tiles that had not previously had floor tiles were the Premonstratensian abbey at Cockersand, the Cluniac priory of Monk Bretton and, possibly, the Cluniac priory at Pontefract. Transpennine Group tiles were also used at late foundations such as the Carthusian house at Mount Grace (founded 1398) and the Cistercian abbey at Whalley

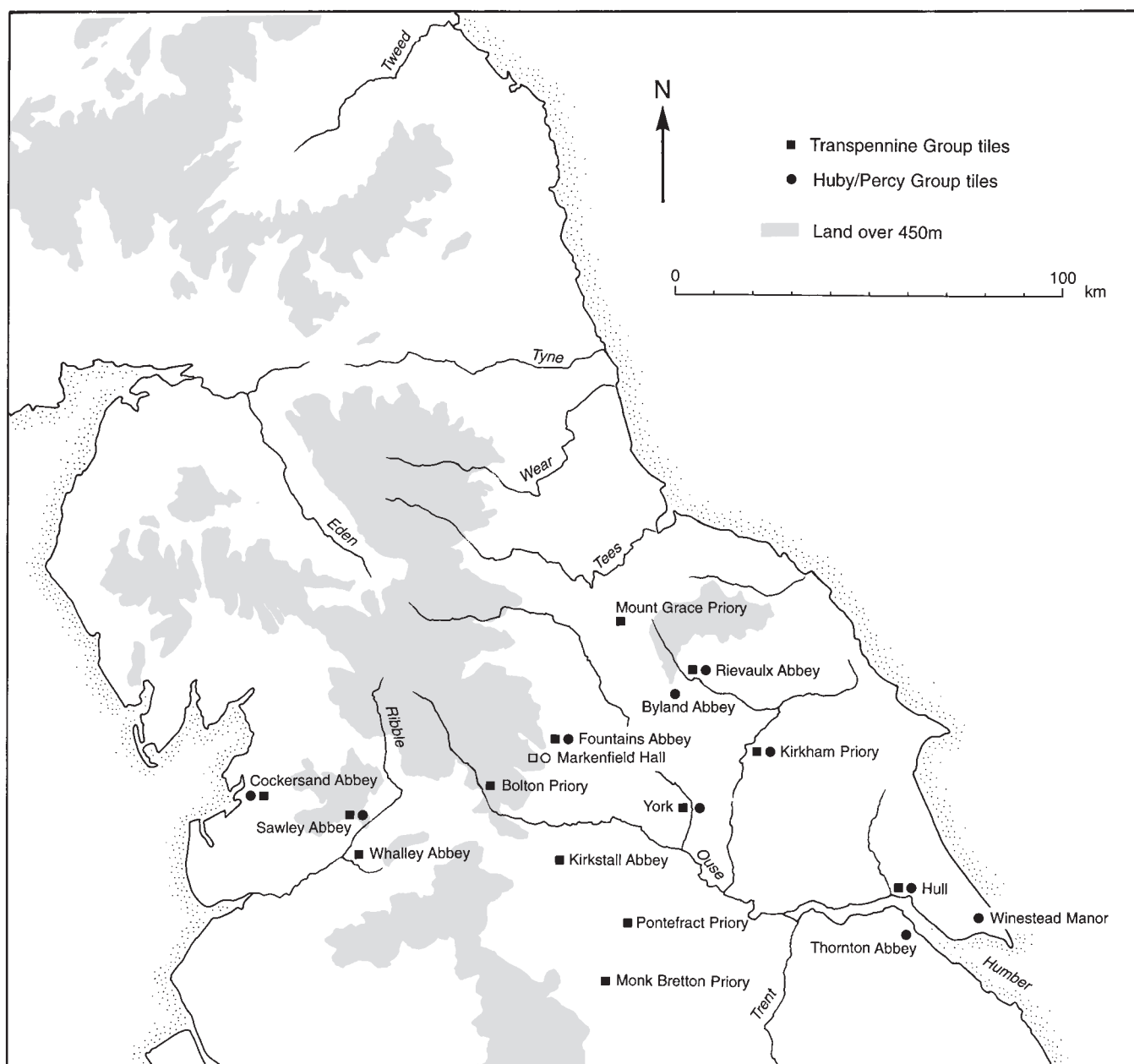


Fig 6.1: Sites with tiles of the Transpennine and Huby/Percy Groups. For details of sites in York and Hull, see Table 6.1. The tiles at Markenfield Hall may have been re-used from Fountains Abbey

(founded 1296; church built by late 14th century). There was a marked absence of Transpennine Group tiles from urban centres, manorial sites and parish churches when compared with distributions of the 14th-century Decorated Mosaic and Nottinghamshire Groups. In c.1500, the Huby/Percy tiles were similarly widely used on rural monastic sites, all of which had earlier tiled floors, but they were also found at several sites in the towns of York and Hull. It seems certain that the initial revival in floor tile production in the region was associated with the rural monasteries.

The findspots of the personalised Huby/Percy Group designs are listed individually in Table 6.2. All the designs thought to relate to Fountains and Abbot Huby were used at that abbey but the same designs were also found at other sites in the region.

The Hildyard design was only known from Winestead. The Percy designs were used at Byland and in York. It is possible that they were first made for one of the Yorkshire residences of the Percys. The fifth earl established households at Wressle and Leconfield from 1512 (Batho 1957; 1962). It seems likely that all these designs were made for a patron in the first instance but the stamps were retained in the possession of the tilers and re-used subsequently as part of the workshop's general design repertoire.

The most widely distributed Huby/Percy designs (Darnton and Stanley; 24.26, 24.27 and 24.30) were thought to date to the last quarter of the 15th century, while the Marmaduke Huby and Henry Percy designs, with a more restricted distribution, dated to c.1500 or to the first quarter of the 16th century – perhaps

Table 6.1: Sites supplied with Transpennine and Huby/Percy tiles

<i>Sites</i>	<i>Transpennine Group</i>	<i>Huby/Percy Group</i>	<i>Previously supplied with floor tiles</i>	<i>Denomination/type of site</i>
Bolton Priory	Y		Y	Augustinian
Byland Abbey		Y	Y	Cistercian
Cockersand Abbey	Y	Y		Premonstratensian
Fountains Abbey	Y	Y	Y	Cistercian
Hull				
High Street		Y		?
Augustinian Friary	Y		Y	Augustinian
Kirkham Priory	Y	Y	Y	Augustinian
Kirkstall Abbey	Y		Y	Cistercian
Monk Bretton Priory	Y			Cluniac/Benedictine
Mount Grace Priory	Y			Carthusian
Pontefract Priory	Y		Possibly	Cluniac
Rievaulx Abbey	Y	Y	Y	Cistercian
Sawley Abbey	Y	Y	Y	Cistercian
Thornton Abbey		Y	Y	Augustinian
Whalley Abbey	Y		Y	Cistercian
York:				
York Minster		Y	Y	Secular canons
North Street	Y	Y		?kiln site; church
Lord Mayor's Walk	Possibly	Y		?
Holy Trinity Priory		Y	Possibly	Benedictine
Elsewhere		Y		?
Winestead Manor		Y		House

Table 6.2: Distribution of personalised Huby/Percy Group designs

(There were no extant personalised designs from the abbeys of Sawley and Thornton)

<i>Designs</i>	<i>Attribution</i>	<i>Byland</i>	<i>C'sand</i>	<i>Fountains</i>	<i>Hull</i>	<i>Kirkham</i>	<i>Rievaulx</i>	<i>W'stead</i>	<i>York</i>
24.1–24.4	Huby	Y		Y			Y		North Street
24.5–24.8	Fountains			Y			Y		
24.26–24.27	?Darnton	Y	Y	Y	Y	Y	Y		
24.30	Stanley		Y	Y		Y	Y		Lord Mayor's Walk
24.13–24.16	Henry Algernon Percy	Y							North Street
24.9–24.12	Percy	Y							
24.17–24.20	?monastic	Y				Y	Y		Holy Trinity Priory
24.21–24.22	?								North Street; Archbishop's Palace
24.28	?								North Street
24.31	?				Y				
24.40	Hildyard							Y	

c.1512 for the Percy tiles. The Tunstall/Boynton design (24.40 in Fig 23.2) at Winestead was stylistically and circumstantially later, possibly c.1530.

Political and religious affiliations

The display of the Tunstall/Boynton arms (Fig 23.2; design 24.40) in the Hildyard's house at Winestead suggests a connection between supporters of the old religious institutions and users of decorated floor tiles. The Tunstall/Boynton tiles at Winestead were thought to have been commissioned by Sir Christopher Hildyard. They proclaimed his connection to the Tunstall family via an earlier generation. Members of the Hildyard and

Tunstall families joined forces in the first half of the 16th century in fierce opposition to the suppression of the monasteries and abandonment of the old religion (see Chapter 23). The rebels eventually fled to Scotland or, in Sir Christopher's case, died abroad. These tiles may have made a political point in a similar way to some late medieval badges (see, for example, Cherry 1991, 32–5). The long association between medieval floor tiles and the monasteries in northern England meant that floor tiles were a particularly appropriate material for demonstrating such an affiliation.

Other personalities identified on the Huby/Percy tiles were well known as supporters of catholicism and its institutions. The opposition of the Percy family to

the king resulted in the deaths of the sixth and seventh earls (Dodds and Dodds 1971; Batho 1962, xix). Marmaduke Huby, abbot of Fountains, was an energetic and zealous advocate of Cistercian ideals who, as commissary of the abbot of Cîteaux, played a leading role in Cistercian affairs (Talbot 1967). He made every effort to return the Order to earlier standards of discipline and commitment and was certainly one of the most influential people in northern England at this time. One of the letters extant from him to the chapter at Cîteaux showed that his attempts at reform extended to other Cistercian houses in the region (Talbot 1967, letter 125, p.239). It is possible that these attitudes were demonstrated materially in a revival of the use of floor tiles at some of these sites.

The Huby/Percy Group designs that remain unidentified may also have had a religious or monastic theme. Designs 24.21 and 24.22 in Figure 23.1 may represent a tun pierced by a crosier with an inscription intended to read *SIGNUM SCE CRUCIS* (sign of the cross; cf. Eames 1980, design 1407). The designs 24.17–24.20 (water bougets quartered with catherine wheels) might refer to the Espec and Roos families, the 12th-century founders of Rievaulx Abbey and Kirkham Priory. The badge of the Stanleys, who eventually took the royalist line and suppressed the rebels in 1536/7, seems inappropriate in this company, but this design is thought to be of late 15th-century date. The first earl of Derby pursued a successful, if cynical, policy of equivocation, which was also adopted by some of his successors (Coward 1983, 9–15).

Disjointed production

Although it seems certain that both the Transpennine and Huby/Percy tiles were made in Yorkshire, no definite kiln sites for their manufacture are known. In 1888, unused tiles of both groups were found together on what was thought to be a kiln site near the City walls in North Street, York. The tiles were found when workmen dug a hole to build the chimney of Rowntree's factory (see entry 110, Chapter 27, *York: Rowntree's Cocoa Works*). Little is known about the circumstances of the discovery and, although the extant tiles had a high shine and no mortar and had clearly never been used in a floor, they were not wasters. Several medieval kilns in and around York, including one at the end of North Street, have been identified by Ian Betts from documentary references but they are only known to have made brick and roof tile (Betts 1985, 334–9, 353, fig 61).

The other suggested kiln site for these tile groups was at Fountains Abbey (Raine 1891, 155). No evidence for this was given and the suggestion may have been made simply on the basis that some designs related to that site. However, manufacture local to Fountains was likely at this period. Design Un/16 (Fig 25.4), a variation on the popular design used in both the Transpennine (23.36; Fig 22.1) and Huby/Percy (24.33; Fig 23.1) Groups, was only found at Fountains

and at its grange at Brimham. This grange was well used as a hunting lodge by the abbots of Fountains in the 15th century (Platt 1969, 192). An additional stamp of the Huby/Percy design 24.33 was also only identified among the tiles from Fountains. The Non-Standard Plain-glazed tiles used in the church at Fountains were not dated but were probably made locally in the 15th century. Thin-section analysis of a very few tiles from Fountains and York, including some from the site of Rowntree's Cocoa Works, suggested that the fabric of the tiles from North Street bore a closer similarity to tiles from Fountains than to other material in York (Betts 1985, 479–80).

Some of the physical attributes, particularly of the Transpennine tiles, but also of the Huby/Percy tiles at Fountains, supported the idea that these groups were made by tilers moving between sites. In particular, the Transpennine Group assemblages varied slightly on a site by site basis in the size and decorative aspects of the tiles (see Chapter 22). Such variation was not so clear among the Huby/Percy tiles except at Fountains, where they were consistently smaller in size than at other sites (the Transpennine Group tiles at this site were also slightly smaller than elsewhere). The tiles at Fountains tended to have a partly reduced fabric, rather than the oxidised fabric of other examples. These minor variations in the details of manufacture might only indicate that the tiles for each site were made to order. However, they could suggest that the tilers worked in slightly altered circumstances and with different materials each time. The much greater depth of most Transpennine and Huby/Percy tiles (up to 40mm), as compared to the 14th-century material discussed in Chapter 4, also indicates that manufacture may have been carried out in the locality of the user sites.

While unconfirmed without scientific analysis of the clays, it is possible that manufacture of the Transpennine and, perhaps, Huby/Percy assemblages was carried out on a site by site basis, not unlike the production of Plain Mosaic. However, significant differences in production between the 13th and 15th centuries were apparent from the smaller scale of the later pavements, their haphazard layout and the poor quality of the tiles.

At some sites the Huby/Percy tiles were laid in previously unpaved locations, including the claustral walks at Byland, several bays of the nave at Rievaulx and in the infirmary hall at Fountains (see Figs 27.2, 27.31, 27.11). Considerable expanses of Transpennine Group tiles were laid at Whalley Abbey, in both the eastern arm of the church and the chapter house (see further below). However, elsewhere these tiles were used in areas to patch, repair and replace earlier paving. Although the areas of Transpennine and Huby/Percy paving were substantial at some monastic sites, they did not match the scale of the 13th-century Plain Mosaic paving.

Also, unlike 13th-century paving in the study area, the quality of the decoration of both the Transpennine and Huby/Percy tiles was poor – in some cases so bad



Fig 6.2: *Huby's arms and motto (Soli Deo Honor et Gloria) in a prayer book of 1516 (Christchurch Oxon, e 8.29) (cf. Huby/Percy Group designs 24.1–24.4)*

as to make the designs indistinct even when scrutinised closely (see Fig 22.3 for Transpennine examples and Fig 23.4 for Huby/Percy Group tiles). About 70% of the tiles of both groups were recorded as of poor workmanship. This was usually a result of carelessly applied slip, which was smeared across the tile. Another fault was badly applied glaze, with some unworn areas of the tiles without slip or glaze. As shown in Figure 23.4, this shoddy workmanship also applied to the Huby/Percy tiles that had personalised designs. Even fragments with the Marmaduke Huby monogram had a poorly applied slip.

The poor quality of the material is difficult to explain. The Marmaduke Huby tiles at Fountains seem certain to have been designed and made for use at that site in the first instance. The high profile role of Abbot Huby and his active promotion of Cistercian life have already been noted. Huby was heavily involved in building programmes in and around Fountains. His buildings were often labelled with the same mottos and insignia that were found on the tiles, as, for example, in the stonework of the tower in the north transept of the abbey church, on a moulding in the south aisle and on the overmantel to a fireplace (Coppack 1993, 71 and 77; for a documentary example, see Fig 6.2). Huby's inscriptions and insignia also appeared on several buildings in the vicinity of the abbey (at How Hill, Winksley, Beverley, Brimham grange and perhaps also the Ladykirk, Ripon, and Marton-le-Moor). It might be expected that Huby's status and standards would be reflected in the quality of the materials bearing his name and high quality workmanship was, indeed, a feature of the inscriptions on all these buildings. The high calibre work carried out by Huby's masons was in marked contrast to that of the tilers.

A distinction was apparent between the poor quality of the slip decoration of the tiles and the much higher quality of some of the design stamps. The design stamps were well cut in most cases – particularly given their intricacy. The ability of the stamp makers was further shown by the varied writing styles they employed, which included black letter as well as several styles of Lombardic capitals (Fig 23.1, designs 24.1–22, 24.28, 24.31, 24.34). A similar range of lettering styles was found on the masonry with Huby's inscriptions, with both black-letter and Lombardic capitals known from Fountains and at Brimham

grange (Lombardic capitals on re-used stone at Brimham read ADELLA+ and ATURME-, and similar fragments to these, with the letters A and I, were once known from the abbey; EH/FOA 1119). The high proportion of inscriptions that were the right way round on the finished tiles also indicated competence on the part of the stamp makers. The design stamps were made so that the lettering was glazed brown against a yellow background, perhaps imitating the colour of ink on parchment (exceptions being the AVE MARIA of design 24.34 and the initials on designs 24.26 and 24.27). The Huby/Percy stamp makers were competent craftsmen and probably literate.

To produce good quality tiles with the Huby/Percy stamps, the clay needed to be sufficiently well prepared to take the fine detailing of the stamp, and the slip and glaze needed to be carefully applied so that the edges of the design remained sharp. It seems unlikely that someone who took the trouble to make the stamps could have taken so little trouble with making or laying these tiles. It is possible that a specialist who was not otherwise involved in the tile manufacturing process made the stamps for the tile makers – perhaps in the case of the Huby examples they were provided by craftsmen working at Fountains. The uniform style and high quality of the inscribed stonework that is a feature of Huby's buildings suggests that the same skilled masons worked on many of his projects. The inferior quality and wider distribution of the tiles with Huby/Fountains designs implies that the relationship between the tile makers and the abbey was a more detached and temporary one.

Layout of pavements

What little is known about the layout of Transpennine Group paving suggests that it was usually coherently set out in accordance with a plan. The Transpennine Group designs included several sixteen-tile arrangements as well as single, repeating and four-tile designs (Fig 22.1). Although the size and complexity of these arrangements was slight compared to the large and elaborate circles of the earlier Plain and Decorated Mosaic series, an understanding of their overall layout was needed to set the tiles correctly in a floor. The only area of Transpennine Group paving that has survived in something like its original setting is the now re-buried floor in the chapter house at Whalley Abbey

(Fig 22.5). A central band with diagonally placed nine-tile arrangements, possibly flanked by four-tile sets, was contained by a single line of dark plain-glazed tiles set on the square. On either side of this band, light and dark coloured tiles were laid in a chequered arrangement, which has survived as a relatively coherent arrangement, especially on the west side. Decorated tiles were laid as yellow tiles in the chequer, supporting the view that some of these were intended as one-colour examples with the design in slight counter relief (see Chapter 22: *Transpennine Group*). Elsewhere in the church at Whalley Abbey, G.K. Beulah remembered seeing tiles of design 23.37 laid together in a block.

In contrast to the Whalley Abbey floors, the extant examples of Huby/Percy pavements suggest that by 1500 the designs on the patterned tiles were completely ignored by those laying the floors, who treated them like plain tiles and laid them anyhow. When excavating the infirmary at Fountains in the 19th century, Walbran noted that the infirmary floor was made up of tiles laid haphazardly, not according to their designs (Walbran 1856, 98–9; Fig 27.10). A similar observation was made when the floor was again uncovered in 1936 by the Office of Works. The 1936 report described the tiles as in good condition with a glazed surface but noted that the patterned tiles were laid indiscriminately. The flooring was thought to be still on its original bed, covering an area of about 46 square yards. As shown in Figure 27.11, the remains of this floor has a coherent overall arrangement, with the tiles laid on the diagonal to the building and divided into rectangular blocks by single lines laid on the square, running north–south or east–west. However, within these sections the few tiles that are not now completely abraded are laid without regard for orientation or linking designs.

The same was the case with the Huby/Percy paving along the west claustral walk at Byland (see Fig 23.4). Again the tiles were laid haphazardly in terms of their design sets, but in coherent overall order, aligned with the cloister wall for six courses before changing to a diagonal arrangement. At Rievaulx, the Huby/Percy tiles in the nave were laid in three east–west bands, with the tiles in the middle laid on the diagonal and those on the outside laid on the square (Fig 27.31). The tiles are now completely worn and the arrangement of the designs is not known.

It seems likely that someone who had been involved in making the tiles was also involved in laying the Transpennine Group tiles in the chapter house floor at Whalley Abbey. In contrast, someone who had never seen the tiles before, and may have been unaware of their intended designs, seems to have laid the Huby/Percy pavements. The overall inconsistency in the stamps, manufacture and layout of these tiles suggested that by 1500 production had been broken down into separate processes, with manufacture detached from marketing and delivery. It is possible that production was organised by someone not physically involved in any of the work.

Non-heraldic design themes

The initial revival of decorated tile manufacture in the north was not associated with the use of heraldry and personalised designs. Only three or four examples out of 39 Transpennine Group designs were heraldic (Fig 22.1; designs 23.21, 23.22, 23.37 and possibly 23.33), as opposed to at least 23 out of 40 Huby/Percy designs. Eight Transpennine designs were copied by the Huby/Percy tilers (see Table 24.2). These included designs 24.26 and 24.27, in which the J and D were added to versions of the Transpennine designs 23.12–14. Design 24.30, attributed to the Stanleys, was a copy of Transpennine design 23.29. The Huby/Percy versions of these designs were thought to have been relatively early in the c.1500 series, with the more elaborately individualised designs being of later date.

The non-heraldic design subjects of both groups followed traditional English themes. They included a high number of deer park or chase scenes and religious motifs. The deer park designs tended to be sixteen-tile arrangements with the park pale or fence forming the enclosing band of the designs (Transpennine sixteen-tile deer park scenes: Fig 22.1, designs 23.1/23.2/23.3, 23.4/23.5/23.6; Huby/Percy examples: Fig 23.1, 24.23/24.24/24.25). Religious motifs in the two groups included the MARIA dedications of designs 23.25 and 24.24 and the lily motifs of designs 23.30–23.32 and 24.38.

Religious and story-telling themes were popular among designs of two of the small assemblages of late medieval decorated tiles (listed in Table 6.3, p.61). Groups 25 and 26 had several designs common to both groups (Figs 24.1 and 24.2). These included AVE MARIA inscriptions in black letter and Lombardic styles (designs 25.10 and 26.1). Design 26.4 illustrated the story of the annunciation. Design 25.2 may have told the popular fable of the dog and its reflection, known in various guises from bestiaries dating from the 12th century onwards. The woodcut of 1498 in Figure 6.3 suggests a possible source for such tile designs. The version of the story illustrated by the woodcut goes:

‘In time past was a dog that went over a bridge, and held in his mouth a piece of meat, and as he passed over the bridge, he perceived and saw the shadow of himself and of his piece of meat within the water. And he, thinking that it was another piece of meat, forthwith thought to take it. And as he opened his mouth, the piece of meat fell into the water, and thus he lost it.

He that desires to have another man’s good often loses his own.’

Design 25.2 (Fig 24.1) may illustrate the next stage of the story, when the dog drops the meat. Another fable that might be relevant to this design is that of a tigress who could easily chase and catch the thief who has stolen her cub but she is outwitted by a huntsman



Fig 6.3: Italian woodcut of 1498 illustrating a translation of one of Aesop's fables reproduced in McKendry 1964, © Metropolitan Museum of Art, Rogers Fund 1921 (21.4.3)

throwing a glass ball to the ground. She sees her reflection in the ball and is delayed, thinking that her cub has been found (White 1954, 12–13; also in a margin illustration in the Psalter of Queen Isabella at Munich dated 1303–8, Bayerische Staatsbibliothek MS Cod. gall. 16, fo. 29, published by Randall 1966, pl CXXXVIII, no. 662). As the animal on the tile was depicted wearing a collar, the design probably illustrated the tale of the dog rather than that of the tigress. Stories involving reflection were particularly appropriate to tile designs as the more complex arrangements often included mirrored images.

A fabulous theme may also be seen in the 'green man' of designs 25.7 (Fig 24.1) and 26.5 (Fig 24.2), which was popularised in a variety of media from the 13th century onwards. The most direct parallels on tiles are from the south-west, at Bordesley Abbey, Worcestershire, Hailes Abbey, Gloucestershire, and at the Carmelite monastery in Bristol. These designs were dated to the 14th or 15th centuries (Eames 1980, BMD/1844, BMC/1583 and 11648). A 'green man' in stone in the east wall of the church at Fountains was dated by a scroll to 1483 (Coppack 1993, 67).

Tiles illustrating stories and moralising fables, popular pastimes and religious themes are well known on English tiles from the mid 13th century onwards.

Designs with musicians and acrobats are known from the 14th century (for example Decorated Mosaic design 7.100; Nottinghamshire design Wh/109) and examples showing dice are found in the midlands (Stopford 1990a, 124). Tiles illustrating the stories of Tristram and Isolde and Richard and Saladin are known from Chertsey Abbey (Eames 1980, 1, 141–50) and the cock and fox of Aesop's fables are found on tiles in Westminster Abbey chapter house (Eames 1985, 42).

Regional interaction

The 15th-century decorated tile groups had extensive connections with material in other regions of England. The adoption of heraldic motifs by the Huby/Percy tilers was broadly paralleled at an earlier date in the south-west midlands. Best known from the south-west are the tiles of c.1455 at Malvern Priory and Gloucester Cathedral (Eames 1980, 1, 236–9; Kellock 1989). Several of these were made as four-tile sets, displaying the arms and an inscription relating to Abbot Sebrok of Gloucester, 1450–1457. The designs of the northern heraldic tiles do not bear any detailed resemblance to these examples, but the intention, with the commemoration of the abbot and community, and their general stylistic resemblance, suggests that the Huby/Percy tiles drew on an established fashion. A broadly contemporary – and much closer – parallel to the Percy designs is a four-tile set with a garter and motto that celebrated Edward Stafford, Duke of Buckingham KG (Wight 1975, 150; Cherry 1991, 34–5, pl 43). These tiles came from the duke's castle at Thornbury in Gloucestershire and are dated to before Edward Stafford's execution in 1521. A major difference between the Gloucestershire and Yorkshire tiles is their quality, with many of the personally dedicated tiles in the south-west made to a higher technical and artistic standard than those of the Huby/Percy Group.

The closest design parallels for the Transpennine Group were in the north-west midlands of England, particularly Cheshire, but extending into Staffordshire, Shropshire and north Wales (for details, see Chapter 22: *Transpennine Group*). Difficulties of access, as well as the small numbers and poor condition of extant examples, have meant that stamps in the two regions have not yet been compared directly. However, in at least some cases the designs were definitely copies and were not made using the same stamps. At present, therefore, it seems that the Transpennine Group tilers were probably travelling about in the study area, but were not moving to, or sending tiles to or from the north-west midlands or north Wales. The designs were clearly well known over a wider area. Their origins in the north-east might be indicated by one arrangement (designs 23.12–14; Fig 22.1) which included several Yorkist motifs. The fetterlock was used by Edward IV, 1442–1483 (Lewis 1999, 95), the hearts may have referred to Elizabeth of York, and the white (Yorkist) roses occurred in both this arrangement and on design 23.27.

Table 6.3: Small assemblages of late medieval date

<i>Tile group no./design no. prefix</i>	<i>Chapter reference for group details & dating</i>	<i>Fig</i>	<i>Sites supplied</i>	<i>Possible dating</i>
25	Chapter 24	24.1	Fountains Abbey, Meaux Abbey and Bridlington Priory	Later 14th century on
26	Chapter 24	24.2	Whalley Abbey	Later 14th century on
27	Chapter 24	24.3	York	?15th century
28	Chapter 24	24.4	Carlisle Cathedral Priory Holm Cultram Abbey	?15th/16th century
29	Chapter 24	24.5–24.6	Beverley Minster and church Thornton Abbey	15th or early 16th century
30	Chapter 24	24.7	Furness Abbey	15th century
31	Chapter 24	24.8	Meaux Abbey	Early 16th century
32	Chapter 25	25.1	Shap Abbey	–
33	Chapter 25	25.2	Carlisle Cathedral Priory	–

Direct links with the north-west midlands were also found among some of the small assemblages thought to be of later 15th-century date (Table 6.3). In particular, the line impressed tiles of Group 30 at Furness Abbey are known from several sites in the Cheshire area including Norton Priory, near Runcorn (Greene 1989; Rutter 1990, no. 2/81; Lewis 1999, no. 751; see Chapter 24). The Furness examples were made in the same way, using the same stamps, as those excavated at Norton. They appear to be at the northern tip of the distribution of this tile group.

Four designs of Group 29, found in the south-east of the study area at Thornton Abbey and at sites in Beverley, were paralleled by material in the north-west midlands at Norton Priory, Cheshire, and Hulton Abbey, Staffordshire (Greene 1989; Craddock and Boothroyd 1997). However, despite apparent similarities in manufacture, it is possible that different design stamps were used in the two areas (Noel Boothroyd pers comm). At Whalley Abbey, there were several tiles not assigned to a specific group that have design parallels in the north-west midlands (especially unallocated designs Un/13 and Un/14; see Chapter 25).

The importance of trading links between Carlisle and York and Newcastle in the 15th and 16th centuries were not apparent, however, in floor tile assemblages of the north-west. Tiles of Group 28 at Carlisle Cathedral and Holm Cultram Abbey, Cumbria, are not paralleled elsewhere, although part of the motif of design 28.1 is comparable with a Chester design (Rutter 1990, 99/124). Two other groups of material from Cumbria consisted of hand-decorated tiles at Carlisle and the isolated Premonstratensian abbey at Shap. These were roughly made and crudely decorated, using a compass-type implement and sticks or knives. These amateurish attempts at producing decorated tiles demonstrate the continuing difficulty of obtaining such material in the north-west of the study area.

The distributions of the Transpennine and Huby/Percy tiles to the abbeys at Sawley, Whalley and Cockersand show that, for the first time, the tilers worked on both sides of the Pennines. Some western

sites, like Furness Abbey, gained access to the products of tileries based further south. Those in the far north-west commissioned work from local, sometimes extremely inexpert, suppliers or made the tiles themselves.

The more extensive distribution of the Transpennine and Huby/Percy tiles in northern England compares with the distribution of Malvern tiles from Gloucestershire to Nottinghamshire in the later 15th century (Eames 1980, 236–54). A trend towards fewer potteries with wider market areas in the 15th century has also been noted (McCarthy and Brooks 1992, 36). A national distribution network for Tudor Green and Cistercian wares in the late 15th century was thought to show the impact of continental imports on the English pottery market (Gaimster and Nenck 1997, 178). Although the Transpennine and Huby/Percy tiles were used on both sides of the Pennines, their distribution was more limited and regionalised than that of some contemporary pottery. However, similar designs were used over a much greater area than the products of any one workshop. In an increasingly bookish age, reference to standardised design drawings, like the woodcut in Figure 6.3, must be a strong possibility.

English tiles made by continental tilers

From a technical standpoint, the manufacturing characteristics of the Transpennine and Huby/Percy tiles were similar to the Plain-glazed tiles that had been imported from the Netherlands for more than a hundred years. In terms of design the tiles were English, shown in particular by the personalised and heraldic motifs and inscriptions. Their distribution also suggests that they were made in England. However, the poor quality of the decoration and incoherent layout of the Huby/Percy tiles suggests that, by *c.*1500, production was divided up between different workforces, with only the stamp cutters showing signs of being skilled specialists in traditional methods. A decline in the quality of decorated tiles was also a feature of material

made in Denmark after plain-glazed tiles had become popular from the mid 14th century (Hansen 2001, 100). The disregard for the quality of the decorated tiles suggested that the tilers had few connections with their customers. This might be explained if the manufacture and laying of the tiles was carried out by tilers from the Netherlands who were experienced in making Plain-glazed material but for whom the English decorated tradition had little significance.

The Transpennine and Huby/Percy tiles are therefore interpreted as having been inspired by English designs and made in England but using some Netherlandish labour. As noted in Chapter 5, craftsmen emigrated to England from the Netherlands, particularly to London but also to East Anglia and elsewhere along the east coast, setting up manufacture in these areas. This sequence, with the import of foreign goods followed by the settlement of foreign craftsmen and the evolution of home production, has been proposed in relation to several commodities including brick, maiolica and relief-decorated stove tiles (for example Ward-Perkins 1937; Drury 1981; Moore 1991; Gaimster and Nenck 1997).

The time lag between importing particular manufactured goods and making similar products in England seems to have varied considerably. Although stoneware jugs and mugs were imported by the hundreds of

thousands in the 15th century, they were not made in England until many centuries later (Jennings 1992, 34–5). On the other hand, brick may have been made in the study area at an early date. Brick production in the Netherlands is thought to have become established in the 13th century and early instances of brick building in eastern England are often assumed to have involved the use of imported bricks. This is supported by documented instances of brick imports, known particularly for royal building works in London and the south-east (for example Salzman 1952, 140; Drury 1981, 126–8), and also by the clay of early brickwork in Hull, which was not thought to be from a local source (Armstrong and Ayers 1987, 263–7). However, there is evidence to suggest manufacture of brick in the south-east of the study area at a fairly early date. Urban brickworks, noted in Chapter 4, were in existence by the 14th century and perhaps earlier in some cases. Brick making was mentioned in the Meaux Chronicle for 1221–1235 (Bond 1866, 411; Beulah ‘Extracts ...’ nd) and a small early 14th-century kiln was excavated at Thornholme Priory (Moore 1991, 221). The time lag between importation and home production of brick may not have been great. With the floor tiles in northern England, however, the importation of Flanders tile could have preceded manufacture using continental techniques by several decades.

7 Floor tile usage in the Late Middle Ages

The uses made of both decorated and Plain-glazed tiled floors in the late Middle Ages are discussed together here. The question being asked is whether different types of tiling, with different connotations, were used in distinct ways. Discussion of Plain-glazed imports in Chapter 5 suggested that this type of tiling might have been associated with a more urban and impersonal world. Discussion of the decorated tile groups in Chapter 6 suggested that the 15th-century revival of decorated production was predominantly a result of demand from rural monasteries, many of which had first used tiled pavements in their churches in the 13th century. The layout of some Huby/Percy pavements indicated that by 1500 the tilers made little distinction between decorated and Plain-glazed paving. However, the designs of the Huby/Percy tiles might show that the customers for these floor tiles were families with strong allegiances to the monasteries and opposed their suppression. How far were any of these features reflected in the location of the pavements?

Additional questions were raised by the interpretation of the contexts in which tiles were used. It was not known, for example, where the Hildyard tiles were laid in the manor at Winestead – whether they formed a pavement in the chapel, dining room or elsewhere. If this type of information were available, how should it be interpreted further? Would use in domestic or other overtly secular interiors mean that such locations were being upgraded symbolically and that domestic life was being sanctified? The display of stoneware and maiolica pottery as religious symbols in Netherlandish paintings of domestic interiors was thought to suggest that this was the case (Gaimster 1997). Or would it mean that ceramic floor tiles were being re-valued as a building material with properties that had ‘utilitarian’ gains, perhaps assisting in a re-ordering of domestic life? Some practical or utilitarian gains that could be claimed for tiled floors were that they were fire resistant, washable, and that they provided a flat surface for furniture. More storage may have been required in an age with an increasing number of personal possessions, particularly items such as paper and soft furnishings that needed protection from light, damp, dirt and insects or rodents. Cupboards, chests and tiled floors would have helped serve these purposes. The use of a particular tiled floor in a particular area was probably the result of several preferences. While it is possible that the Huby/Percy tiles at Winestead represented a political point of view, displaying allegiance to Catholicism, the floor was probably also a means of demonstrating the wealth and status of the family and served to structure the household.

The length of time over which Plain-glazed pavements were made and the lack of dating evidence for

many sites made it difficult to compare contemporary floors or different types of tiles. The Plain-glazed assemblages certainly included paving that was laid when decorated tiles were not available. Among the Plain-glazed tiles there was the added complication that imported, Standard, types might have been viewed differently from home made, Non-Standard, examples. The Non-Standard Plain-glazed tiles used in the church at Rievaulx, for example, were not made in distinct colours and were not laid in a chequerboard arrangement. Instead they appear to have been used with earlier floor tile types to continue a floor of Huby/Percy tiles into the west end of the nave (see further below). Comparisons were also complicated by the strong topographical influences on the distributions of the various tile groups (Figs 5.1 and 6.1). The distributions showed that imported Plain-glazed tiling predominated almost entirely along the east coast. In many cases, preference may have been predetermined by availability or by marked differences in the cost of tiles. It was possible, however, to note some trends in late medieval floor tile usage and to frame some questions for further work. It is important to note how crucial detailed contextual information is for artefact-based research – even where the nature of the archaeology means that the available information cannot be interpreted unequivocally. Details of the locations of tiled floors are given in Chapter 27.

Use of floor tiles on monastic sites

Many monasteries that laid tiles in their churches in the 15th century already had earlier tiled pavements in parts of these buildings. The new tiles were used as replacements for earlier work, in programmes of alteration and refurbishment, or as extensions to existing paving. The earliest cases of re-paving seem to have been a result of alterations to the monks’ choir, perhaps made because of reduced numbers of monks. From c.1300 onwards the area in and around the choir was reorganised at several sites. At Rievaulx, Usefleet tiles were laid in the choir and north transept, possibly replacing Plain Mosaic paving (Fig 27.34). At Gisborough Priory, antiquarians recorded paving of the Nottinghamshire Group just west of the central tower. Plain Mosaic paving had previously been used at this site, probably in the east end of the church, although none was found *in situ*. Finds of Plain Mosaic tiles in a pit in the choir at Meaux indicated that there had also been alterations at some point at that site (Fig 27.23). At Sawley Abbey, another site that had 13th-century Plain Mosaic paving, tiles of the Transpennine Group were found *in situ* ‘in front of the three chapels in the south transept, and within that next the choir

entrance' (Harland 1853, 57). Although not *in situ*, Nottinghamshire Group tiles were also found in the choir of St Mary's Abbey, York, during excavations in 1912. Tiles of the Transpennine Group were laid in the crossing at Bolton Priory although, as at St Mary's, it is not known whether there had been a pavement of earlier date in that location.

At Fountains Abbey more extensive alterations to the east end of the church included the screening-off of the chapels as well as various repairs and, possibly, the replacement of the Plain Mosaic floor with Plain-glazed tiles. The north transept, excluding the tower built at the behest of Abbot Huby, was also paved with Plain-glazed tiles (Fig 27.10). Construction of the tower may have necessitated the replacement of the earlier floor in the rest of the north transept. However, Plain Mosaic paving continued in use in at least one of the north transept chapels and in the south transept and south crossing aisle (Fig 27.17). Late medieval decorated tiles of various types were associated with the insertion of burials through the Plain Mosaic floor in the south transept and were also used in repair works in the chancel.

Attempts by some of the reformed monasteries to upgrade and find new roles for the western half of their vast and under-used churches might be suggested by late medieval tiled paving at Fountains and Rievaulx. Alterations carried out in the nave at Fountains are difficult to date but some, including the installation of screen walls and altars in eastern bays of the nave, have been attributed to Abbot Huby's time (Hope 1900a, 302–11). It is possible that the tiles now re-set against the pier bases in the nave related to the setting up of altars (Fig 27.10). Walbran, who excavated here in the mid 19th century, certainly thought this was so in one instance (1846, 10). However, the extent of subsequent disturbance and landscaping work makes all present tile locations at Fountains unreliable.

More certainly, 26 stone slabs incised with a circle were found during excavations in the nave, first by Walbran in 1854 (*Memorials II*, 64) and then by Hope in 1887 (1900a, 307–8; 311). The stones, which were of the distinctive limestone associated with works during Huby's abbacy, were regularly spaced and interpreted as marking the positions of members of the convent 'before they moved in procession on high days to meet their patrons or benefactors' (*Memorials II*, 64). Similar processional markings were recorded before they were destroyed by the 18th-century paving of several urban cathedrals including York, Lincoln, Canterbury and Wells (Hope 1900a, note 1). Incised lines, probably for a similar purpose, remained on the stone floor slabs of the nave at Easby and Shap Abbeys, two Premonstratensian houses in the study area. They were also known at other sites, such as the Cistercian abbey of Bardney in Lincolnshire (Wilson and Hurst 1957, 153–4; Brakespear 1922, 32). At Canterbury, two parallel lines were cut in the cathedral floor about 2.4m (8') apart (Hope 1900a, 308, fn 1). The elaboration of

processions and ceremonies was recorded in 15th- and 16th-century manuscripts from Salisbury Cathedral and Durham Cathedral Priory (Wordsworth 1901; Fowler 1902). The floor in the nave and nave aisles at Rievaulx might suggest that the tiles at this site were used in the same way as the stone markers. The western half of the church at Rievaulx was paved throughout by c.1500, using Transpennine, Huby/Percy and Non-Standard Plain-glazed tiles (Fig 27.31). The Transpennine tiles were laid around the doorway leading to the west claustral walk. The rest of the nave was laid with Huby/Percy tiles in the eastern bays and the Non-Standard tiles to the west. Dividing lines of tiles, c.2.8m (9') apart, were maintained across the different types of tiling and, like those cut in the stone floor at Canterbury, may have been intended for processional purposes. Active use of the length of the nave and increased interaction and involvement with secular patrons were also suggested by the burials in the porch and westernmost bay at Rievaulx and Byland (Walbran noted that a burial in this location at Byland was requested in a will of 1426; *Memorials II*, 204).

New paving in monastic churches allowed some earlier tiling to be removed for use elsewhere in the monastery. The re-laid floors were made up of the least worn parts of the old pavement and, in consequence, their arrangement was not that originally intended by the makers. This can be seen at Kirkstall Abbey, where a Decorated Mosaic pavement was re-laid in the refectory in the later 15th century (Wrathmell 1984). Tiles of the Decorated Mosaic Group, now completely worn, appear to have remained in use in the west end of the nave throughout the life of the church. Transpennine Group tiles were the likely replacement for the re-laid Decorated Mosaic tiles at Kirkstall, although no examples were found *in situ*. At Newminster Abbey, late medieval Plain-glazed tiles were found in the transepts of the church and it is possible that they replaced a pavement in Decorated Mosaic style found in the abbot's house. The floor in the abbot's house was laid incoherently, suggesting re-use in that location (Fig 27.29).

Where late medieval tiles were laid in monastic churches that had not previously been paved, decorated tiles seem more often to have been reserved for the east end of the church, with Plain-glazed tiles laid further west and/or elsewhere in the monastic complex. At Pontefract Priory, tiles of the Transpennine Group were found *in situ* in the crossing of the church, while Plain-glazed tiles were in use in the cloister, chapter house and infirmary. The decorated tiles were also found in the abbot's house but were not *in situ*. At Tynemouth Priory, decorated tiles of Group 19 were laid in the Lady Chapel while what were probably Plain-glazed tiles were set in the nave. The many phases of paving at Whalley Abbey, discussed in Chapters 5 and 6, culminated in substantial areas of Transpennine Group tiles being laid in the choir and chapter house at this site, while Plain-glazed tiles were set in the nave. Both Huby/Percy and

Plain-glazed paving were in use in the church of the Benedictine priory in Micklegate, York, but the location of the different types of tiling is not known.

The only type of tiling known from the Franciscan friary, Hartlepool, was Plain-glazed. Several patches of these tiles were found *in situ* and the pavement was thought to have been laid throughout the church (Daniels 1986). This would have emphasised the lack of division between the chancel and congregation in a church intended for preaching. Plain-glazed tiles were also extensively used in the church and cloisters of the Dominican priory, Beverley, in the church and possibly the chapter house of the Gilbertine priory, York, and in the north transept of the Augustinian priory at Thornholme, Lincolnshire. Plain-glazed tiles may have been the first type of paving laid in the canons' chapel at the Gilbertine double house of Watton. Decorated Mosaic tiles had been used in the church and chapter house of the nuns' monastery at this site from *c.*1300. It is possible, therefore, that the maintenance of the nuns' and canons' quarters was organised separately.

Burial practices

The disturbance of the Plain Mosaic floor at Fountains as a result of the insertion of late medieval graves and the setting up of chapels has already been noted, as has the increased use of the west nave and porches for burials at Byland and Rievaulx. The many types of tiles found in the nave chapels at Rievaulx indicated the extent of alterations and patchings in these areas. Plain-glazed tiles found in the fill of many graves in the church of the Franciscan friary at Hartlepool showed that these were dug after the floor was tiled.

Traditionally, abbots were buried in chapter houses, particularly at Cistercian sites. This may be reflected by the many types of tiles found in the chapter house at Rievaulx. Burial of abbots in the church became more usual practice during the 14th century (Butler 1993, 86). As a result, chapter houses paved at a later date, such as the Transpennine Group floor at Whalley Abbey, remained largely undisturbed (Fig 22.5). A floor in another polygonal chapter house was recorded at the Cluniac priory at Pontefract. The 1950s excavator noted that the floor of plain tiles of unknown size but 'laid in chequer fashion' had been found in 1932 (Bellamy 1965, 7). Any burials in the chapter house at this site may have been removed to the church.

In a few cases floor tiles on northern monastic sites were specifically used as grave covers. Tiles found in 1713 covering a tomb in the cloister of Kirkstall Abbey were probably re-used examples of the Decorated Mosaic Group (Thoresby 1725, 600). The coffin was made of stone and there was a stone over the head, with tiles covering the body (Hunter 1830, II, 201–2). Outside the study area, waste tiles are known to have been used to line a grave filled with sand at the important 14th-century tilerly at Penn, Buckinghamshire (Eames 1980, 1, 89). Fragments of tiles, with an

inscription and possibly an effigy, were probably made as a commemorative tomb cover for use at Whalley Abbey (Group 22; Fig 21.3). Similar tiles are known at several widely distanced sites, the nearest to Whalley being Norton Priory in Cheshire where tomb tiles were being made in the earlier 14th century (Greene 1989; Stopford and Wright 1998, 307–22). Finds of tin-glazed tiles in the choir of Meaux Abbey were thought by the 19th-century excavator to be inappropriate in a Cistercian church. However, these might have been used as an early 16th-century grave marker, particularly if they had been brought back from the continent as souvenirs by pilgrims. The only crypt in the study area with ceramic floor tiles is at York Minster, where the paving is dated from building accounts to 1415.

'Domestic' monastic buildings

Refectories of the reformed orders were frequently tiled at an earlier date than other ostensibly domestic monastic buildings, perhaps because monastic meal-times were symbolic re-enactments of the Last Supper (Fergusson 1986; 1989). Outside the study area, a later 13th-century floor survives in the 'old' refectory of the Cistercian abbey at Cleeve, Somerset, and a 14th-century pavement was excavated in the Franciscan nuns' refectory at Denny Abbey, Cambridgeshire (Poster and Sherlock 1987). In the study area, a possible early example was the wealthy Augustinian house at Thornton where Decorated Mosaic tiles may have been laid in a second-storey refectory in the earlier 14th century. Other instances in northern England are of later date. A Plain-glazed tiled floor was laid in the refectory of Durham Cathedral Priory in *c.*1500 but this might have replaced an earlier tiled floor in this location. The re-use of the least worn Decorated Mosaic tiles at Kirkstall in the revamped two-storey refectory at Kirkstall Abbey in the later 15th century has already been mentioned. At Fountains, the dais was paved when a room between the monks' infirmary and the abbot's house was converted to a dining room in the 15th century (Walbran 1851, 23; Hope 1900a, 300–1; Coppack 1993, 72–3). At Rievaulx, Plain-glazed tiles laid in the westernmost bays of the church were also used in the abbot's house in *c.*1500. The paving in the abbot's house was laid in the dining room – listed as such in an inventory together with the furnishings of tables and benches (Fergusson and Harrison 1999, 132). The re-use of tiles in the abbot's house at Newminster has already been noted. The building was interpreted as the abbot's chapel but, in light of the Rievaulx example, it may have been a dining room – with a dais, as in the misericord at Fountains. At Brimham, a grange of Fountains much used by the later abbots, the remains of a tiled floor was found in a substantial hall.

The higher status of abbots and their increased involvement in secular affairs may have prompted the refurbishment of many abbot's houses in the late

Middle Ages, bringing them in line with the houses of their aristocratic counterparts (Coppack 1993, 73–7; Fergusson and Harrison 1999, 132–5). Similarities in the lifestyles of lay and monastic ruling classes might be emphasised by the high proportion of deer park and hunting scenes among the non-personalised designs of the Transpennine and Huby/Percy Groups. Changes in abbatial accommodation were accompanied at several sites by a remodelling of infirmary blocks in the 14th and 15th centuries, and it is possible that changes in the status of abbots were combined with an increased obligation towards the provision of care for members of their communities. Tiled floors were often included in these alterations. At Fountains, the extant Huby/Percy tiled floor was set in the infirmary hall in c.1500 (Fig 27.11). This large aisled building (c.51m × 25m) was partitioned into a number of different rooms, each with its own fireplace, and an internal staircase (Hope 1900a, 278–9). At Pontefract Priory, Plain-glazed tiles were found *in situ* in a room to the east of the polygonal chapter house and in buildings around the lesser cloister, thought to be part of the infirmary. In the Dominican priory, Beverley, Plain-glazed tiles were found in the vicinity of the north and west ranges of the lesser (infirmary) cloister. These rooms were interpreted as possible corrodian accommodation (Armstrong and Tomlinson 1987). The north range included a particularly high-status residence, with painted window glass and a formal decorative fireplace. Benches set around a warming hearth indicated that there were some communal aspects to this accommodation. At Tynemouth Priory, Plain-glazed tiles remained re-set in the warming room (Fig 27.41). Located in the centre of the room away from the walls, they were probably surrounded by benching. In the Dominican Friary at Newcastle, tiled floors were found in most of the ground floor rooms round the cloister (Harbottle and Fraser 1987). Following the Dissolution, these rooms were divided up and used as meeting houses by nine craft companies. The medieval tiles remained in use into the 18th century in the rooms of the Bakers and Brewers, the Saddlers, the Taylors and possibly the Butchers. Tiled pavements in impressive domestic accommodation at these sites contrast with the absence of tiled floors in earlier comparable accommodation, for example, in the prestigious guest house at Fountains. It is possible that some monasteries may have specialised in providing long-term care for the elderly and infirm just as others specialised in education or industry.

Plain-glazed and Huby/Percy tiles were also used at some monasteries to delineate spaces probably intended for private prayer in areas otherwise used for domestic or working activities. Tiles were, for example, found in one of the window recesses in the monks' dormitory at Fountains. A similar arrangement of re-used 13th-century tiles can be seen at Cleeve Abbey, a Cistercian house in Somerset, where they were associated with 15th-century alterations dividing the dormitory into a

series of cubicles (Gilyard Beer 1970, 20). These modifications might indicate increased provision and prominence for private devotional practices by individuals.

On the sites mentioned above there is a high incidence of tiled floors in rooms with fireplaces. The use of roof tile as a fire prevention measure was well established in the 13th century (Salzman 1923, 174) and roof tile quarries were often used in medieval fireplaces and in kiln constructions, probably because unglazed roof tiles were more readily available than floor tile or brick. It is likely that fire in domestic accommodation such as living rooms or bedrooms became more of a hazard when these spaces included more in the way of hangings and furniture, and perhaps when they were occupied by individuals rather than being used communally. However, it should be noted that floor tiles were rarely found in monastic kitchens in the study area. Unglazed 'hearth' tiles were used to pave the floors of fires in the warming room and meat kitchen at Kirkstall Abbey (Le Patourel 1955, 39). In an industrial context, part of one of the upper floors of the woolhouse at Fountains is thought to have been paved (Coppack 1986b, 70). A few tiles were also laid in an irregular manner on a dais in a room, perhaps an office, added to the east side of this building (Coppack 1986, 61). Floor tiles in areas of manufacture involving fire were found *in situ* at the Archbishop's palace, Trondheim, Norway, where Plain-glazed tiled floors were confined to the mint workshops, an armoury and a possible kitchen in the buildings arranged around the main courtyard (Fig 7.1). Other rooms were not paved (Chris McLees, pers. comm).



Fig 7.1: The first mint workshop (c.1480) at the Archbishop's palace, Trondheim (looking north). Photograph © E. Baker, reproduced by permission of Riksantikvaren and The Norwegian Institute for Cultural Heritage Research

Some instances of paved monastic spaces specifically given over to storage include a cupboard north of the chapter house at Kirkstall, where a floor was made up of re-used square Decorated Mosaic tiles. A cupboard in the infirmary kitchen at Rievaulx was paved with re-used Inlaid tiles. The tiled central room of three vestries on the south side of York Minster is of uncertain use, but the storage of vestments is one possibility. This room is sometimes referred to as the Consistory Court but there is no evidence that it was actually used as such in the 15th century. However, the tiles in the muniment or court room at Fountains Abbey were re-set there following Walbran's excavations in the 19th century (Fig 27.12). There is no evidence for a medieval pavement in this location.

The other area where tiles were widely used at monastic sites in the late Middle Ages was in the claustral walks. Fire, furniture and furnishings were not issues here. Claustral walks were covered corridors linking the main monastic buildings and the inside and outside environments. They were spaces used for exercise and reading and a laver or ceremonial washing place was often located on the south side near the entrance to the refectory. Tiling these areas may have been part of a move towards paving spaces that were particularly subject to wear. They might also demonstrate a greater interest in controlling the dirt brought into buildings – a way of keeping the outside world at bay. Paved floors in Netherlandish paintings of the period often extend from interiors into areas partly open to the outdoors. A patch of decorated tiles (design 29.1), perhaps of 15th-century date, remains in the east claustral walk at Thornton, while Plain-glazed tiles were laid in the carrels of the west walk at this site (Fig 20.2). The relative lack of wear on the latter suggests that the tiles were laid shortly before the Dissolution and/or that the carrels were not much used. Plain-glazed tiles of different sizes were found *in situ* in the east and west claustral walks at Bridlington Priory, in the north-east corner of the cloister at Pontefract Priory, in the east and west claustral walks at Meaux (Fig 27.27) and at the Carmelite friary and Blackfriars in Newcastle. Tiles of the Huby/Percy series were laid in the west claustral walk at Byland (Figs 23.4 and 27.2).

Greater interest in cleanliness is also suggested by the re-use of floor tiles to pave the 15th-century infirmary lavatory at Meaux and, perhaps, by the tiles in the kitchen cupboard at Rievaulx. The paving around doorways now visible in the church at Fountains was probably a post-medieval use of the tiles. However, the patches of Transpennine Group tiles in the area of the doorway from the nave to the west claustral walk at Rievaulx might have been prompted by increased wear in this area. The doorway to the hall at Brimham grange was also paved.

An instance where tiles may have been manufactured to solve specific functional difficulties may be seen in some unusual tiles from outside the study area at Jesus College, Rotherham. The college had a life of

about 50 years. It was founded by Archbishop Rotherham in about 1482/3 and suppressed at the Dissolution (Bennett 1901). A striking feature was its construction in a locally produced, bright pink brick. Large numbers of floor tiles of the same fabric were apparently used to pave a courtyard. The tiles are very large, thick, unglazed slabs with uneven ridges running across the upper surfaces. The ridges may have been to prevent slipping rather than for decoration.

Use on non-monastic sites

Similar trends of use, with the paving of traditional religious locations as well as some domestic spaces, can be seen in the much more limited evidence for floor tiles on non-monastic sites (Tables 7.1 and 7.2). All the *in situ* tiles, apart from the decorated tiles re-used in the kitchen at Epworth Manor, were Plain-glazed but it can be seen from Table 7.1 that decorated tiles were also in use at non-monastic sites.

The use of floor tiles in the chapels of aristocratic houses, seen at Helmsley and Scarborough in the 13th century, was revived in the late Middle Ages with Plain-glazed floors in the chapels of Warkworth and Pontefract castles.

Similarly, the early or mid 14th-century use of floor tiles in churches at Hull, Winterton, Burnham and Reedham was repeated at a later date, but with the north aisle apparently a favoured location for paving. Plain-glazed tiles donated in 1411 were laid in the north aisle of St Mary's parish church, Beverley. The north aisle and several bays of the nave of St Peter's, Barton-upon-Humber, were also paved with Plain-glazed tiles, possibly in the later 14th century. There were further phases of tiling at St Peter's in the east bay of the nave and patching in the north aisle, possibly in the earlier 15th century. Two decorated tiles were found but were unstratified (unallocated design Un/19; Fig 25.4). It seems likely that any decorated floor was in the chancel but this area was not excavated (Warwick Rodwell, pers. comm.). In some cases, tiled floors in civic churches might have been associated with appropriation of the living to a monastic house. This may have been the situation at Burnham, where the church was appropriated to Thornton Abbey. Both sites had tiled floors of the Decorated Mosaic Group.

The best example in the study area of a tiled floor in a domestic context comes from Barley Hall, York, where the impressions of the tiles, plus a few Plain-glazed pieces, survived throughout the hall and service area (Figs 5.4 and 5.5). This floor is dated between 1440 and 1536, at which point it was taken up for re-use (Beryl Lott, pers. comm.). At Hylton Castle, Sunderland, tiles were laid in a 15th-century floor in a building interpreted as part of the guest accommodation, perhaps a reception or dining room. Tiles found in a house in Lurk Lane, Beverley, may have been used in a domestic floor before re-use in the consolidation of a 16th-century garderobe. The earliest date in the

Table 7.1: Non-monastic use of 15th/16th-century decorated tiles

<i>Sites</i>	<i>Context if known</i>	<i>Tile groups</i>	<i>Date</i>
?Carlisle, Scotch Street	—	use or re-use of Group 33	?15th century
Epworth Manor	kitchen	Nottinghamshire tiles	re-used in ?15th century
Hull, High Street	—	Huby/Percy	c.1500
Winestead Manor	—	Huby/Percy	c.1500
York			
All Saints Church, North Street	—	Transpennine or Huby/Percy; Group 27	?later 15th century
North Street	?kiln site	Transpennine and Huby/Percy	?later 15th century
Lord Mayor's Walk elsewhere	—	Huby/Percy and possibly Transpennine Huby/Percy	?later 15th century c.1500

Table 7.2: Non-monastic use of Plain-glazed tiles

<i>Site</i>	<i>Context if known</i>	<i>Type</i>	<i>Date</i>
Ayton Castle	In the peel-tower	Standard	c.1400 or later
Barton-upon-Humber, St Peter's Church	N aisle and nave Chancel arch	Standard	later 14th? earlier 15th century?
Beverley			
St Mary's Church	N aisle	—	1411
	Priest's room	—	—
Lurk Lane	?House	—	Possibly 15th century
Howden Bishop's Palace	Stairwell of tower	?Non-standard	Before c.1400
Hull Old Town	—	Non-standard	By early/mid 14th century
	—	Standard	—
Hylton Castle	?Guest accommodation	Standard	After c.1400
Newcastle Old Town/castle	—	Standard	Late 14/early 15th c. onwards
Pontefract Castle	Chapel	?Non-standard	—
Prudhoe Castle	—	Non-standard	By end 15th century
Scarborough Castle	—	?Standard	—
Stockton Castle	—	Non-standard	—
Warkworth Castle	Chapel – altar platform	Standard	1390s or later. Discarded
	—	Dump	before c.1455
Winteringham Church	—	Standard	—
York			
Bedern	Chapel	Non-standard	14th–early 16th century
Barley Hall	House: hall and service area	Standard	c.1440–c.1536
St Mary's Bishophill	?parish church	Non-standard	—
St Mary's Hospital	—	—	14th–mid 15th century

study area for use of Plain-glazed tiles in a domestic location comes from tiles in the stairwell of a tower in the Bishop's Palace at Howden, laid before c.1400. Tiles dumped in Blanket Row, Hull, possibly in the 16th century, could have been discarded from nearby houses. A tiled floor was laid in the first floor priest's room, above St Michael's Chapel, in St Mary's Church, Beverley, in the 14th century or later (the tiles may have been re-used from the church).

Although these are several examples of Plain-glazed floor tiles used in domestic contexts, the only case where there was no link with a religious institution was at Hylton Castle. At Lurk Lane, Beverley, the house is thought likely to have been the former Bedern/Provost's house, or a prebendal residence (Miller *et al.*

1982, 12). Although the ownership of Barley Hall, York, in the later 15th century is not known, it may have been similarly used. In the 14th century this property was owned and rented out by the Nostell Prebends and the area of Stonegate, where Barley Hall was located, was used for prebendal housing. Ownership of Blanket Row, Hull, is not known.

Presentation, politics, safety and cleanliness

It is clear that in the later 14th to early 16th centuries, as in previous centuries, floor tiles of all types tended to be used in locations devoted to the greater glory of God. The churches of some urban friaries, and some

Benedictine and Cluniac sites which had not previously had tiled floors, were paved for the first time. Private chapels and parish churches continued to be paved. At the old reformed monasteries, alterations were made to the monks' choirs, continuing a 14th-century trend, and in some cases worn pavements in the chancels were replaced. Paving was extended into the nave and re-laid around graves and in chapels. Increased use of the naves of monastic churches for the secular community, through burials, chantries and ceremony, may have been intended to encourage greater support for monastic life from local communities. The conversion of the naves of several monastic churches for parochial use after the Dissolution (for example at Bolton Priory) may partly have been a consequence of this policy.

The use of floor tiles in monastic buildings other than the church probably also had religious symbolism, especially where they were laid in refectories or dining halls, and used in the creation of personal shrines. As discussed in Chapter 6, leading figures such as Abbot Huby were urging reform on their fellow Cistercians in the late 15th century, imploring them to return to the fervour of their predecessors. The revival in the use of decorated floor tiles was thought to have begun at these sites. It is possible that the inclusion of floor tiles in late medieval monastic building programmes was a deliberate reference to their manufacture and use in the early, glory years of the reformed orders. If this is so, it would appear that the increased comfort (particularly warmth) and privacy that the building alterations brought about were not perceived as a weakening or abandonment of religious ideals. The Huby/Percy tiles at Fountains, for example, were laid in the old infirmary hall which was divided up into a number of separate rooms with fireplaces. The tiles must have been laid with the consent of Abbot Huby, who undoubtedly worked hard to promote a highly disciplined monastic lifestyle.

Recognition of some intrinsic qualities of floor tiles – that they are hard-wearing, cleanable/waterproof, flat, and fire resistant – probably led to use in some new locations. Greater value was placed on the qualities of the tile quarries than on their decoration. In some domestic locations, the use of tiled floors may demonstrate a greater duty of care towards individuals, more interest in personal safety and a general upgrading or refinement of individual status. There may have been more concern with domestic order, with the smooth running of room functions (perhaps showing a greater emphasis on domestic ceremony), and with maintaining a distance from dirt and decay. An expansion in tile use may have been part of a move towards more intensive house-keeping regimes. Tiled floors could not only be swept, they could also be washed. However, such possibilities were not always taken up. The church floor in the friary at Hartlepool was splashed with plaster near the walls and this, together with worn areas and poor repairs, would have made for a shabby appearance during the later life of this building (Daniels 1986).

Doubtless there were many nuances in the status and symbolism of particular types of tiles in particular contexts. As has been noted, where decorated and Plain-glazed tiles were both used in churches, the decorated tiles appear to have been located towards the east end, with Plain-glazed tiles further west. Some hierarchy in pavements and locations might also be shown by the re-use of tiles, which became much more widespread during the 15th century. The best of the old decorated tile pavements at Kirkstall and Newminster Abbeys were laid in the refectory and abbot's house respectively. At Kirkstall, these might have been replaced by Transpennine tiles, while at Newminster Plain-glazed tiles were found in the transepts. Worn decorated tiles in the nave at Kirkstall may have been left where they were. The nave aisles at several sites were never paved (at Meaux and Gisborough, for example). The tiles in the lavatory at Meaux were a hotch-potch of different sizes of Plain-glazed tiles, either leftover odds and ends or re-used material. The mixture of tile types found in the woolhouse at Fountains, a building used for various industrial purposes, suggests that they were also re-used. At Epworth manor, decorated tiles of the Nottingham Group are thought to have been re-used with bricks in the kitchen in the 15th century. These tiles, which celebrated an earlier owner of the house, may have been re-set because of their inappropriate design. At Barley Hall, York, the status of different rooms was shown by variations in the layout of the Plain-glazed floor, with a simpler arrangement at the service end (Figs 5.4–5.5).

Comparison with other regions

Use in domestic contexts is known in southern England at earlier dates than in the study area, particularly at royal sites. The mid 13th-century pavement in the Queen's chamber at Clarendon Palace is the best known instance (Eames 1957–8, 95–106, pls xxxii–xxxv). Tiles of the same series were also used to pave the King's chapel at this site (Eames 1963, 40–50, pls xxvii–xxx; 1972, 71–5). Penn tiles, made in Buckinghamshire in the 14th century, survive in the Aerary at Windsor Castle and documented instances show that tiles were being widely used in storage, manufacturing and washing areas on royal sites at this date (Eames 1980, 1, 221–3). Payment was, for example, made in the 1380s for paving and repairing the pavement below the private garderobe of the King in the Tower of London, for paving the King's bathroom with decorated tiles and, in the 1360s, for paving buildings housing the King's wardrobe in Baynard's Castle, London. These rooms accommodated the King's clothing craftsmen, including 'tailors' and 'skinners'. In 1352 the Warden's Hall was paved, along with the chapter house and vestry of the College of Canons in Windsor Castle.

There are a few examples of tiled floors in domestic locations on non-royal sites dating from the 14th

century in southern and eastern England. Much of the evidence was summarised by Elizabeth Eames in 1975. An excellent survival is the large decorated pavement in Clifton House, King's Lynn (Eames 1975, 7–8; 1980, 1, 208). The floor is thought to be of 14th-century date. The room was a large hall and both the scale of the pavement and the coherent arrangement of the tiles suggest that they were not re-used in this location. The paved floor of a domestic site at Seal House in the City of London was initially dated to c.1260–1300 but reassessment suggested that re-use of the tiles in the 14th or 15th centuries was more likely (Eames 1980, 1, 208; Eames 1985, 58, pl 74; Betts, pers. comm.). Tiles found *in situ* on a house site in Lower Brook Street, Winchester, await publication. This area of the city had a mix of stone and timber houses and workshops and was predominantly engaged in the textile industry (James 1997, 63 and 72). The house with the tiled floor was a substantial one, occupied by mayors of Winchester in c.1400 (Eames 1975, 6–7). In another case, adjacent rooms in a manor house at Hempstead, Norfolk, were tiled, but with the designs haphazardly arranged – possibly re-used (Rogerson and Adams 1978, 55–72). Fourteenth-century tiles were thought to have been used in domestic apartments in Pleshey Castle, Essex, although they were not found *in situ* (Drury 1977, 92, 113, 115). Bawsey tiles, of the 14th century, were found at another merchant's house in King's Lynn, in Norfolk Street in 1968 and, also of 14th-century date, were the Penn floor tiles found at Northolt Manor, Middlesex (Wilson and Hurst 1967, 298; Eames 1975, 8–9). Fifteenth-century pavements on secular sites are well known, particularly from sites in and around Bristol, for example at William Canynges' house in Bristol and at the Poyntz' house, nine miles to the north-east at Iron Acton (Eames 1951; Williams 1979). The tiles from Thornbury Castle, the Gloucestershire home of Edward Stafford, Duke of Buckinghamshire, were noted in Chapter 6 (Wight 1975, 150; Cherry 1991, 34–5, pl 43).

Examples from monastic sites include the 'Westminster tiler' pavement in the muniment room of Westminster Abbey, but this would now be re-dated to the 13th century (Eames 1980, 207–8; Degnan and Seeley 1988). Tiles, possibly of later 13th-century date, were found in 1880 somewhere in the cloister at the Benedictine house at Muchelney, Somerset, before being re-laid in the parish church (Eames 1985, 50, pl 63) and a few 14th-century tiles were found by the Duke of Rutland in the reredorter of Croxton Abbey (Whitcomb 1956, 20). However, with antiquarian examples like these, it is always uncertain whether the

tiles were found *in situ* and/or whether they were re-used in these locations. Whitcomb reports, more reliably, that 14th-century Nottinghamshire tiles paved the east claustral walk of Leicester Abbey. William Langland envisaged Piers Plowman visiting a 'friary' in 1394 and finding the cloisters 'ypaved poyntyll, ich poynt after other'.

Comparison of the use of floor tiles in northern England with that in other regions suggested, therefore, that a wider range of uses were adopted at an earlier date further south. It is unclear whether this was due to the partial nature of evidence from northern England or because of real regional differences. The continuation of floor tile use in traditional, religious contexts in the north, the links in ownership between domestic houses with floor tiles and religious institutions, and the preference for heraldic tiles among secular supporters of the monasteries in the earlier 16th century do suggest that floor tiles were strongly associated with religious life throughout the medieval period in the north. This association may have been an important factor in the decline in popularity of this material in the region following the successful suppression and outlawing of the old monastic institutions. There are instances of the re-use of tiles from monastic sites in manor houses after the Dissolution, for example at Markenfield Hall. The tiled floors at Rievaulx were also considered of sufficient second-hand value to appear in the audit (Coppack 1986c; Fergusson and Harrison 1999, 132). However, in many cases, tiles at northern monastic sites were left for re-use in road building and repairs at a much later date (for example, Tickell 1796, 179; Nichols 1865, 500–7).

The absence of new tiled floors in churches following the Dissolution might also be explained by the poverty of the church at this period. Cheaper and lighter flooring materials, particularly boards, were used increasingly in houses in the 16th century (Schofield 1993, 9 and 166). Decorated alternatives to floor tiles included the painted plaster floors of Tudor Palaces, which could simulate marble in timber-framed buildings, unsuited to carrying the weight of stone or tiles (Thurley 1993, 230, pls 282 and 293; the examples are from paintings thought to depict actual royal interiors). This alternative would give a more temporary display but one that could easily and frequently be replaced or updated. In northern England floor tiles were strongly connected with an outmoded religious order. Good quality decorated tiled floors were a long-term investment, unsuitable for periods of rapid change. In the later 16th century they could hold inappropriate and potentially dangerous associations.

8 Conclusions

Monastic inspiration

The overwhelming impression gained from this study is that the adoption and use of ceramic paving in the north of England was strongly influenced by the monasteries of the 12th-century reform movement. It is clear, despite biases in the evidence that favour these rural monasteries, that the huge and complex schemes of Plain Mosaic tiling of the 13th century were introduced through the religious houses of the Cistercians (see Chapter 2). However, the distribution of Plain Mosaic tiles in the study area was not a consequence of mother-daughter connections between these houses. The other sites supplied with these tiles were institutions with close ties and empathy with the Cistercians, in particular some of the Augustinian and other reformed houses in the region. With the exception of York Minster, which had close associations with Fountains Abbey, the Benedictine sites and the old minsters in the study area did not pave the floors of their churches or other buildings with ceramic tiles at this time.

The design of Plain Mosaic is not directly paralleled elsewhere. It was a regional adaptation of earlier *opus sectile* pavements (made of stone) and tapestry designs of southern Europe. The design of Plain Mosaic was derived from the Mediterranean and Arab worlds, bypassing the Paris schools and spheres of thinking. It is argued in Chapter 2 that these flooring schemes were highly symbolic representations of the medieval cosmos (and see further below). Ceramic paving, of similar date to Plain Mosaic and with a comparable layout, was in use in the Rhineland. Possible architectural links between Yorkshire and the area of Normandy, where there was a strong tradition of tile-making, suggest one route, although precise links and dating sequences are difficult to establish (see, for example, Norton 1984a and 1986b; Coldstream 1986; but see further below for expertise in ceramic manufacture in Yorkshire).

Whatever the precise route or nature of these influences, it seems certain that the northern pavements were devised separately from ceramic flooring of this date in southern England. The adoption and popularisation of floor tiles in the south is thought to have been promoted by royalty and to have resulted from royal connections with France in the first half of the 13th century (Eames 1980). The strong influence of the reformed monasteries in the introduction of ceramic paving in the north of England suggests a distinct tradition that resulted in different perceptions of this material in the region at a later date. The impact of the huge paving schemes of geometrically arranged dark green and yellow tiles in the abbey churches of northern Britain must have been considerable – in line with the impact of the buildings themselves. Like the buildings,

many areas of Plain Mosaic paving remained in use until the Dissolution, serving as a lasting reminder of the movement's tradition and ideology.

At a later date, the small assemblages of simple mosaic tiles found at the Cistercian abbeys of Fountains, Rievaulx and Whalley (Groups 21 and 34; Chapter 5) might suggest a late medieval movement to revive the mosaic floor tile tradition. Although the range of customers for floor tiles in northern England widened at certain times during the medieval period (especially *c.* 1300 and in the later 15th century), many of the later tile groups were supplied to the same monasteries that had adopted tiled paving in the 13th century. This is illustrated by a count of the number of tile groups represented at each site (see Table 8.1). It seems that the Cistercians and others of the 12th-century reform movement played an important role in keeping the tradition of ceramic paving alive throughout the medieval period.

The revival in the indigenous decorated floor tile industry in the study area in the 15th century, possibly in the third quarter of that century, was again almost certainly motivated by monastic demand. Floor tile manufacture above the smallest scale had not been carried out in northern England since the first half of the 14th century. Decorated tiles had been brought in from Nottinghamshire in the 14th century or were made on a localised basis at various times for one or two sites. From the later 14th century onwards undecorated, Plain-glazed tiles were imported from overseas. Most customers for decorated tiles in the later 15th and early 16th centuries were, again, monasteries on inland sites. They patronised the Transpennine and Huby/Percy workshops in preference to transporting Plain-glazed imports overland from the coast.

It is possible that this revival was part of a general campaign to restore and revitalise the old monastic buildings and revive the monastic ideals of an earlier age. Cistercian involvement in the introduction and manufacture of floor tiles in the 13th century would have made the installation of new tiled pavements an appropriate way of demonstrating such intentions (see further below). Fountains Abbey and Marmaduke Huby, abbot of Fountains and one of the leading

Table 8.1: Sites with more than four tile groups

Site	No. of tile groups	Denomination
Rievaulx	8	Cistercian
Fountains	7	Cistercian
Meaux	7	Cistercian
Thornton	6	Augustinian
Whalley	5	Cistercian

Cistercian figures of his time, were prominently represented among the heraldic designs of the last major tile workshop operating in the north in *c.*1500. Other designs may have referred to the original founders of the monasteries and to local families that continued to support them in the face of opposition from the crown. Both the Percy and Hildyard families, who are represented on these tiles, were vehemently opposed to monastic suppression and campaigned against it in the years leading up to the Dissolution. Ceramic floor tiles may have been furnishings that held a particular appeal to those with a conservative attitude towards the church in the earlier 16th century (see Chapter 6).

Monastic manufacture

Kiln sites for making Plain Mosaic tiles in the 13th century have been identified on granges belonging to the Cistercian monasteries of Rievaulx (Wether Cote) and Meaux (North Grange). It seems certain that kilns were set up on the lands of several of the big Cistercian houses in Yorkshire. The mobility of the Plain Mosaic tilers was confirmed by the manufacturing characteristics of the tiles, which strongly suggested that the same tilers were involved in making these tiles for several sites, and by the results of chemical analysis of the clay fabric of the tile quarries, which showed that several different clay sources were used (see Chapter 2). However, the similarity in the fabric of tiles from some far-flung sites, particularly from Newbattle Abbey in Scotland, with material definitely made in Yorkshire, might suggest that there was some transshipment of tiles from Yorkshire to sites along the north-east coast.

The tilers making Plain Mosaic were clearly mobile or itinerant to some degree. The kilns used in the manufacture of the tiles were of a small size and the manufacturing processes were extremely time-consuming, ensuring a high quality product. It is estimated from experimental work that several years would have been needed to produce the huge number of tiles required for the paving schemes at each of the Cistercian houses. The tilers might, therefore, have moved from site to site on a long-term basis, rather than moving back and forth from a settled land holding (see Chapter 1). Domestic arrangements would clearly have been greatly facilitated if the tilers were attached to the monastic communities as either monks or laybrothers. No direct evidence was found to support this idea, and the distance of Wether Cote from the abbey church at Rievaulx would have made it difficult for a monk to attend the required services. However, two instances of Cistercian monk-tilers of this period are documented (Norton 1986a; France 1998) and many aspects of tile making and the constituents of floor tiles might be seen as concurring with Cistercian ideals regarding the spirituality of labour (see Chapter 2). These qualities – together with access within the Order to the necessary means and knowledge of tile making – might explain the high incidence

of floor tiles on Cistercian sites in general in 13th-century Europe, noted by Christopher Norton (1986a).

There is some evidence to suggest that the tilers making Plain Mosaic at Cistercian sites worked closely with masons. In many cases the Plain Mosaic pavements installed in monastic churches in the 13th century were part of substantial building campaigns. Co-operation between masons and tilers is shown by the stone steps that were specially cut with rebates to hold Plain Mosaic floor tiles. The tiles were set into the vertical and horizontal planes of these steps. At Wether Cote the tilerly was located immediately next to one of the stone quarries used by the abbey. Both roof and floor tile was produced at Wether Cote and at the Meaux Abbey tilerly. The clustering of manufacturing processes has been noted on monastic sites outside the study area, for example at the Augustinian priory at Norton in Cheshire (Greene 1985; 1989). Several features of the production of Plain Mosaic might be thought typical of an estate-based seigneurial industry (see Chapter 2). Comparison with production on secular estates was prevented by the lack of archaeological evidence from those sites.

Some specialisation in tile-making by particular monastic houses is possible in the 13th century (see Chapter 3). Rievaulx Abbey had by far the greatest number of designs of both the Inlaid Group, of the mid or later 13th century, and the Usefleet Group, of *c.*1300. Only a few of the best designs of these groups were distributed to other monastic sites. Copies of the Inlaid Group, possibly later 13th century in date, were also made exclusively for use at Rievaulx. Tiles of the Usefleet Group were made at the Wether Cote kiln site, which belonged to Rievaulx. Chemical analysis suggested that the same clay source was used to supply Inlaid and Usefleet tiles to several sites, implying that some of these tiles were supplied by tilers working from a fixed base. The designs made by the Inlaid and Usefleet workshops formed simple arrangements that would not have required any great skill to lay in a floor. Several of the sites supplied already had large pavements of Plain Mosaic tiling and it is possible that the Inlaid and Usefleet tiles were used in relatively small quantities at those sites.

Changes in both the manufacture and designs of the Inlaid and Usefleet tiles were evolutionary (Chapter 3). Many of their characteristics showed continuity with the traditions of the Plain Mosaic workshop, but features typical of Plain Mosaic were present on a smaller proportion of the Inlaid and Usefleet assemblages as time went on. Although the distribution of the Inlaid and Usefleet tiles was restricted to monastic sites in North Yorkshire, the John Usefleet inscription on some of the Usefleet examples might indicate that, by *c.*1300, production was linked in some way with secular patronage.

The success of the largely monastic-based floor tile industry in Yorkshire through the 13th century may

have been supported by an existing high level of ceramics expertise in this part of the study area. An earlier tradition of ceramic paving is represented by the innovative Polychrome Relief tiles, possibly of the 11th century, found in the church of All Saints', Pavement, York (these tiles were not included in this study; see the introduction to Chapter 27 and Keen 1993). Ceramic manufacture in the region in the 12th century is thought to have been more advanced than elsewhere (Bellamy and Le Patourel 1970, 119). Scarborough, a trading place and harbour on the east coast, was an important pottery making centre between the 12th and mid 14th centuries. Scarborough Ware was widely distributed along the British east coast and in the Netherlands (although possibly derived from more than one production site; Farmer 1979; Farmer and Farmer 1982, 100–9). A Scarborough Ware head, possibly a roof finial, found at Hoeke, north-east of Bruges, might suggest that other types of building ceramics were among these exports (Hillewaert 1992).

Scarborough was also important in the maintenance of contacts between the big Cistercian monasteries of Yorkshire and continental Europe. The town would have been the most likely outlet to the sea for the monasteries of Fountains, Rievaulx and Byland, with access along the Vale of Pickering, south of the North York Moors. Although no Cistercian monastery is known in the town, a Proctor was established there from 1198 by the Cistercian mother house of Cîteaux (Talbot 1960, 95–158). Fountains Abbey owned land and had fishing interests in the town. The importance attached to Cistercian control may be seen in the strong opposition of the Order to the foundation of Franciscan and Dominican friaries in Scarborough in the 13th century (summarised in Midmer 1979, 278–9). Control of the churches in the town was eventually taken from the Cistercians by the Crown in 1312.

Three different types of floor tile of *c.*1300 date have been found in and around Scarborough – an unusually high number of tile groups for a town without a monastery at this time. Tiles of Group 3 (possibly Inferior Plain Mosaic) may have been manufactured in the vicinity (see Chapter 11). Usefleet tiles were found on church property in the town and tiles of the Decorated Mosaic Group were used in the chapel of Scarborough Castle. The widespread distribution of some Decorated Mosaic tiles along the eastern seaboard of Britain is reminiscent of Scarborough Ware pottery, although the tiles found in Scotland and Norfolk may have been shipped from the Humber region rather than from Scarborough (see Chapter 3). It is possible that the Decorated Mosaic Group developed from a monastic industry to an independent enterprise supplying a variety of types of site (see further below).

The next time that a tile workshop based in the study area was engaged in making decorated floor tiles on a substantial scale was in the 15th century (Transpennine Group). The tiles were distributed to

monastic sites as in earlier times, mainly to houses of the Cistercian and Augustinian Orders, but also to Premonstratensian, Carthusian and Cluniac sites (see Chapter 6). Much less is known about the manufacture of these tiles than their 13th-century counterparts. It is possible that the tilers were moving between monasteries in a way that was reminiscent of the makers of Plain Mosaic. Although chemical analysis of the tile fabrics was not carried out, the manufacturing characteristics of the Transpennine Group tiles showed more variation from site to site than, for example, was apparent among Inlaid tiles thought to have been made and distributed from a fixed base. However, the Transpennine Group tiles at Rievaulx were not made on the earlier monastic kiln site at Wether Cote. It is possible that any kiln site was located much closer to the abbey buildings. Several industrial activities were set up in the vicinity of the hub of the monastery at Rievaulx in the late medieval period, including iron smelting (McDonnell 1999) and a tannery. The brick-built tanning vats were actually inserted into the undercroft of the east claustral range. The Huby/Percy workshop, which grew out of the Transpennine Group in *c.*1500, may have been similarly organised. Although this late medieval decorated tile industry was once again closely linked with the monasteries, there are some features which might indicate that these tiles were the products of an independently organised operation (see further below).

Cistercian abbeys to the west of the Pennines may have been inspired by the magnificent pavements in the churches of many of their easterly brethren. Very little is known about the source of the floor tiles from Holm Cultram Abbey in Cumbria, but it seems that various types of tiling were made for this Cistercian monastery that were not distributed elsewhere (Chapter 4). Surviving drawings suggest that some of the material was loosely based on 13th- and early 14th-century tile groups known at monasteries further east. It is possible that the abbey set up its own tilery to produce this material.

Tiles decorated individually, by hand, for use as a tomb cover at Whalley Abbey (Group 22; Chapter 5) and also the amateurish products of Group 32 from Shap Abbey and Group 33 at Carlisle Cathedral Priory may have been produced within monastic confines. These small assemblages may have been the work of individual members of the community.

Independent and/or commercially driven enterprise

The monasteries were such important customers for floor tiles in the north of England, particularly decorated floor tiles, that identifying production of this material by an independent enterprise in the study area is not straightforward. Such production might be indicated by a workshop supplying tiles to a wide range of unrelated customers. Several workshops in the study area, and those exporting material to it, were thought

to be commercially operated. It is feasible that some of these were under monastic ownership, rather than being independent enterprises. Features that might be indicative of independence from the monasteries are noted below.

After supplying monastic properties at Jervaulx, Scarborough and Kirkstall in the later 13th century, the Decorated Mosaic workshop distributed tiles from a fixed base to a variety of sites around the Humber and along the eastern seaboard in the earlier 14th century. Several of the sites supplied from this base were monasteries. Monastic influence might also be seen in the supply of the tiles to the church at Burnham, since Burnham was owned by Thornton Abbey and Thornton Abbey also had Decorated Mosaic tiles. However, apparently for the first time in the study area, the square two-colour tiles of this group were also supplied to manor houses (at Habrough and Winthorpe). In addition, they were distributed to a variety of sites over considerable distances along the eastern seaboard (Dornoch Cathedral, Scotland, and Reedham Church, Norfolk). It would seem that the Decorated Mosaic workshop developed into a successful commercial operation. It may have been supported by the economic stimulation of the area around the Humber following the development of Kingston upon Hull as a royal port from 1293 and, as noted above, by the organisation of the contemporary pottery industry in the region.

The tiles of the Nottinghamshire Group, thought to have been brought into the study area along the River Trent during the 14th century, were used at a similar range of sites, including manor houses and parish churches (see Chapter 4). North of the Humber, these tiles were restricted to the urban centres of York and Hull, with Gisborough Priory the only more northerly outpost. The location of kilns used to make the tiles that were shipped northwards is not known, although various kiln sites making Nottinghamshire tiles have been identified in the north-east midlands, including Nottingham itself. Comparison of the Nottinghamshire and Decorated Mosaic industries suggested that they might have been similarly organised, setting up kilns on estates to supply larger pavements, while shipping smaller quantities of tiles further afield from a fixed base. However, the Nottinghamshire industry was probably the larger enterprise of the two and may have been more orientated to distribution via urban sites.

At a later date (probably 15th century) and on the other side of the Pennines, tiles at Furness Abbey were outliers to an industry supplying many sites in Cheshire and the north-west midlands. Like the Nottinghamshire tiles, those at Furness were probably transported from further south, in this case along the western seaboard to Barrow-in-Furness (Group 30, Chapter 6).

Despite access to the Nottinghamshire tiles, demand in York and Hull was sufficiently strong to support some small local industries, probably set up in the

vicinity of these towns in the 14th century (Groups 16, 17 and 18; Chapter 4). The products of the local workshops showed a lack of technical expertise in their decoration, perhaps suggesting that they were made by independent potters or roof tilers who had turned their hand to making floor tiles. The first Plain-glazed tiles, thought to be continental imports, were also found in York and Hull at this time. A feature of all these 14th-century industries was the much lighter weight (reduced depth) of the tiles as compared to those made by the tilers moving between monastic sites. These 14th-century tileries were clearly concerned about gaining access to supplies of raw materials and/or about reducing the cost of making and transporting the tiles.

Production of decorated floor tiles in the study area in the later 15th and early 16th century appears to have been initiated by monastic demand and it is clear that the Transpennine and Huby/Percy workshops were heavily dependent on monastic patronage (as noted above and see Chapter 6). Chemical analysis of the fabrics of these tiles was not carried out but slight variations in the manufacturing characteristics of tiles from different sites were thought to show that the tilers were mobile. The distribution of the tiles from coast to coast across the country shows that they travelled long distances across difficult terrain. In order to facilitate this mode of production, it is likely that some of the monasteries provided the tilers with temporary housing, workshops and materials. There were marked differences in the production of these tiles and those of the makers of Plain Mosaic in the 13th century. The scale of the late medieval paving schemes varied, being substantial at the abbeys of Rievaulx and Whalley, but possibly much smaller at other sites. The tiles were manufactured as quickly as possible with almost no regard for the quality of the decoration. The tilers are unlikely to have spent the long periods of time that the Plain Mosaic workers spent at each site. The lives of the late medieval tilers would have been much more mobile than that of their earlier counterparts, perhaps resembling that associated with gypsies.

Although working itinerantly, the Transpennine and Huby/Percy tilers were not tied to the monasteries in the same way as the Plain Mosaic tilers and they may have been organised as independent commercial enterprises. While the rural sites supplied by the Transpennine and Huby/Percy workshops were usually monastic, and included several Cistercian sites, a wider range of sites were also supplied, particularly in some of the main towns. In some cases the workshops may have operated, on a temporary basis, from urban tileries. Several aspects of the production of the later tiles showed a lack of cohesion when compared to the earlier, monastic production of Plain Mosaic. There was, for instance, a disparity between the carefully made, personalised design stamps of the Huby/Percy workshop on the one hand, and the poor quality decoration of the finished tiles on the other. Also, once the

tiles were made, they were not laid according to their designs, but set in pavements in a haphazard manner. The disjointed nature of late medieval tile production in the study area might suggest a more complicated manufacturing system than seen previously, with the various processes being carried out by different people and a number of different facilities being used. One possibility is that the stamps were cut by members of the estate or community referred to by the design, while the actual making and laying of the tiles was carried out by an independent tilery. The manufacturing methods used at the tilery combined poor quality two-colour decoration with features only previously known on Plain-glazed tiles imported from the Netherlands. It is possible that some of the tile makers were immigrants who were unfamiliar with making and laying decorated tiles. Some of their customers may have been un-impressed with the end product. The lack of communication or greater distance between the craftsmen involved in making the late medieval pavements contrasts with the close working relationship identified between stone masons and tilers at Cistercian sites in the 13th century.

Features of a group of professionally made mosaic tiles with line impressed decoration at Bolton Priory in Wharfedale suggested that an attempt had been made to minimise the amount of equipment needed by the tiler (Group 10; Chapter 4). Such a strategy might characterise the work of an independent, itinerant worker. However, although these tiles were reminiscent of material known from several sites in the midlands, the same products have not been identified at any other sites. Broadly similar material was in use at the Dominican friary, Lancaster, but it was of lesser quality and not made by the same tiler (Group 11; Chapter 4).

There were several other small-scale workshops of late medieval date that supplied a few monastic sites in the region. The lack of any obvious connection between the sites they supplied might suggest that they were operating as commercial enterprises. Unlike the small workshops of the 14th century, the deep and therefore heavy tiles suggested that access to raw materials or transport was not a problem. Perhaps raw materials were provided by the monasteries. It is possible that these operations were dependent upon practical support from their customers in the same way as the Transpennine and Huby/Percy Groups. In some cases they may have supplemented those larger workshops, helping to meet the late medieval revival in demand for decorated floor tiles. Possible examples are the tiles of Group 28, supplied to Carlisle Cathedral Priory and Holm Cultram Abbey, sites which lay outside the distribution area of the Transpennine and Huby/Percy Groups (Chapter 6). Other small industries may have been set up as new initiatives when floor tiles were otherwise unavailable. This may have been the case with the tiles of Group 29 supplied to sites in Beverley and to Thornton Abbey (Chapter 6). This workshop was much less parochial than those set up

around York and Hull in the 14th century. The designs of Group 29 were also known in the north-west midlands and the tiles were competently made.

Large-scale commercial production was suggested by the imports of Standard Plain-glazed tiles from the Low Countries to sites along the east, south and south-west coasts of England and elsewhere around the North Sea (Chapter 5). In the study area, these tiles are thought to have been imported in the later 14th, 15th and earlier 16th centuries. Documented examples of imports to Hull in the later 15th century show that they were shipped from the Netherlands in relatively small quantities but at regular intervals. They were included in a variety of mixed loads, sometimes being used as ballast for cargoes that included teasels or hops, but tiles were probably also carried in their own right. The location of the kilns making these tiles is not known and little work on Plain-glazed tiles has, as yet, been done in the Netherlands. The tiles were highly standardised in many aspects of their manufacture and were clearly made within the same tradition, over a long period of time. The duration, as well as the scale of manufacture, of Plain-glazed tiles contrasts with the short-lived and limited output of the indigenous medieval industries of northern England. A crucial factor in the success of such long distance supply lines was the absence of decoration on these tiles. They could be laid in a pavement by anyone – no specialist knowledge was needed.

Decorated floor tiles were rarely imported to northern England and, in the few known instances, were probably a result of special circumstances. Tiles of Group 20 were products of a very successful industry of c.1400, possibly based in Normandy and distributed to sites in that area, around Bordeaux, in southern England and in Ireland (Chapter 5). In north-east England, these tiles are currently only known at the royal manor of Cowick, and their presence there may have depended on the extraordinary reach of royal connections. The few tin-glazed tiles of Group 31 found in the church at Meaux Abbey, while nominally imports, seem likely to have been pilgrimage or other personal trophies (Chapter 6). Tiles of Group 19 at Tynemouth Priory were designated possible imports on the basis of the manufacturing characteristics of the very few extant examples. However, no other occurrences of these tiles are known at present (Chapter 4).

Availability of medieval floor tiles

It can be seen from the above that there were several factors that limited the availability of floor tiles in the north. In the 13th century, this included the location of production within a network of monastic institutions and, probably, within a particular ideological sphere. The symbolism of the Plain Mosaic pavements may have made these tiles inappropriate to most other settings. More generally, access to floor tiles on inland rural sites may have depended upon having the necessary infrastructure, contacts and access to raw materials

to support itinerant tilers. Both secular and monastic estates could have provided these features. However, even in the 15th century most supply to inland, rural sites in the north was to monastic houses rather than secular ones. This appears to be the case despite the high number of Percy family designs among tiles of the *c.*1500 workshop. It seems probable that these tiles were, in fact, used at one or more of the Yorkshire castles of the Percys. Nonetheless, castles near the east coast made use of Plain-glazed tiles supplied from overseas and, consequently, did not have to cater for itinerant tilers. It is possible that housing itinerant workers remained a tradition that was specific to the monasteries.

In order to supply people in other spheres, such as the owners of rural manor houses or the occupants of rural parish churches, the floor tiles generally had to be produced by industries operating from a fixed base, with their own sources of raw materials. In the study area, the industries identified as of this type depended on water transport to distribute the tiles. The Decorated Mosaic workshop, probably operating from a fixed base in the earlier 14th century, supplied sites including manor houses and parish churches around the Humber and related waterways. The tiles were distributed over a distance of *c.*70km and were also transhipped long distances along the east coast. The Nottinghamshire tilery supplied a similar range of sites, distributing its products via the River Trent and the Humber-Ouse system. Most widely distributed of all the tile groups were the Plain-glazed imports along the east coast or on river systems connected to the coast. Some of these tiles were redistributed to monastic sites further inland but probably in relatively small numbers.

The 13th-century Inlaid and Usefleet workshops seem to have supplied some floor tiles overland from a fixed base, although distribution along the coast from Scarborough is possible, as is some level of mobility among these tilers. In any event, both these tile groups were heavily connected with Rievaulx Abbey and were largely located within the monastic sphere. As far as is known, the tiles were only supplied to monasteries, mainly to those that already had Plain Mosaic tiles. The availability of floor tiles to other types of sites appears very limited before the end of the 13th century. It seems that it was only when tiles were distributed using water transport by tileries with their own premises and resources, in the 14th century, that a wider range of customers could be supplied. Supply to some urban sites may have improved in the late 15th century, as a result of itinerant tilers making use of existing tileries on the edge of the larger towns.

Access west of the Pennines

Alongside the constraints outlined above, topographical factors must have been largely responsible for the limited access to floor tiles in the west of the study area. The few towns and absence of navigable waterways, combined with inhospitable terrain and formidable

distances between sites, prevented even the Cistercian monasteries from inclusion in the distributions of most of the larger tile groups. The operations of the Plain Mosaic tilers extended as far west as Sawley Abbey, Lancashire, and were only exceeded by the movements of the Transpennine and Huby/Percy tilers in the later 15th century. As has been noted, most sites west of the Pennines had to find their own local sources of supply and the extant material is often of poor quality. Although the Cistercian abbey of Holm Cultram appears to have been inspired by floor tile design further east, other sites referred to decoration known in the north-west midlands or invented their own styles.

Access on the eastern seaboard

The east coast ports with floor tiles before the 14th century were Whitby and Scarborough. At Whitby, the abbey was one of the few Benedictine monasteries with 13th-century and *c.*1300 tiles (Inlaid and Usefleet), perhaps suggesting links with the Cistercian site of Rievaulx at that period. The importance of Scarborough to the Cistercians in the 13th century has already been mentioned. The decline of its role as a port may be shown by the customs accounts for Hull, which included Scarborough as an outpost. While volumes for Scarborough were as high or higher than for Hull in the early 14th century, they were very much reduced in the second half of the 15th century (Childs 1986, xix–xx). Bricks were being shipped to Scarborough from the Netherlands in the later 14th century, by which time ceramics manufacture in the town had declined (Bellamy and Le Patourel 1970, 118, fn 50). Imported Plain-glazed tiles, but no late medieval decorated tiles, have been found at both Whitby and Scarborough.

North of the River Tees, floor tiles were rare before the 14th century. The distribution of Decorated Mosaic tiles along the coast to sites outside the study area might suggest that this was the result of a lack of demand in *c.*1300. Tynemouth Priory gained access to decorated tiles of 14th-century or later date. Otherwise the coastal sites with floor tiles had Plain-glazed imports from the Netherlands. At Newcastle, imported redware pottery from the Netherlands is found in early 14th-century contexts, with discards of Plain-glazed tiles in the town thought to date from the late 14th century (Harbottle and Ellison 1981, 171). Licences to ship lesser quality wools may also have been relatively late in date north of the Tees, granted to Berwick perhaps from 1378 and to Newcastle by 1423 (Munro 1972, 86 fn. 55).

Access in the south-east

The involvement of the Yorkshire monasteries in the production and distribution of floor tiles in the 13th century has already been noted. The importance of river transport in the distribution of tiles in the 14th and much of the 15th centuries, also noted above,

ensured that this part of the region continued to enjoy greater access than other areas. The network formed by the Rivers Humber, Hull and the Ouse, which was navigable up to and beyond York, was the busiest water system in the region, particularly after the development of Hull as a port from *c.*1300. Despite these advantages, tiles would still have been expensive and time-consuming to obtain. These waterways were tidal, with high water at Hull corresponding with low water at Selby (Briden 1997). The strength of the tides meant that the movement of all goods was dependent on the tide timetable. It was not possible to ship goods between Hull and York on a single tide and, in consequence, Selby is likely to have been one of several important storage and transshipment points along the route. The inevitable delays and additional handling charges involved in using this water system may have been part of the reason for the high cost of buying small quantities of imported tiles in York in 1415 (see Chapter 5).

Transportation along the Trent, linking the Humber-Ouse waterways with the north-east midlands, was also a time-consuming process. Corn transported along the Trent from Adbolton, Nottingham, to Gainsborough, Lincolnshire, a distance of *c.*55km by modern road, took two days in 1316 (Stevenson 1882, 89, no. xliv). If the Nottinghamshire tiles in the north of England were brought in along the Trent, as is probable, the journey to Hull would have been a matter of at least three days, with four or five days likely to York. Tiles of this type sent on to Guisborough would have taken longer, presumably waiting for a suitable vessel travelling up the coast.

Despite the inherent costs and delays, these waterways ensured that people living in the Humber zone had greater access to floor tiles than anywhere else in the study area. It is possible that heavy, bulky, non-necessities such as floor tiles are not indicative of medieval transport more generally. However, a fairly wide range of raw materials might fall into the same category as floor tiles. Overland transport may often have been confined to short distances and foodstuffs in this region. Road and bridge construction may have been more politically motivated, intended to facilitate the movements of people as much as the movement of materials.

Changes in technology

Assimilation and adaptation

On present evidence it must be assumed that the first Plain Mosaic tiles were made in the north by people with existing skills. No evidence has been found to suggest that there was a period of experimentation in the manufacture of these tiles. The high level of skill in ceramic production in Yorkshire would allow the tilers to be indigenous to the region. However, the techniques used – such as inlay – were already known in France (Norton 1984; 1986b). It seems likely that

some of the knowledge of the northern tilers was imported from the continent, via the Cistercian monasteries that received so many of the first pavements. It is possible that the tilers were themselves immigrants, but there are no direct continental prototypes for the paving and its inspiration is thought to be from further afield.

The techniques used by the Plain Mosaic tilers were modified gradually through the later 13th century. Various aspects of the manufacturing process were altered or adapted by different workshops. For instance, the proportion of keyed tiles among the Plain Mosaic square tile assemblage was, effectively, 100%, while 55% of the Inlaid tiles were keyed and only 11% of the Usefleet Group (the keys are the same, typologically, for all groups). Keys were almost certainly more important as an aid to drying and firing tiles successfully than as a means of providing purchase when they were laid. There was a clear correlation between Inlaid tiles made without keys and those with cracked quarries. These problems did not occur to such an extent among later tile groups, some of which were of similar depth to the Inlaid and Plain Mosaic series but without keys. Presumably the issue was resolved by technological improvements in the drying and/or firing of tiles.

The inlay technique also went out of use gradually, with the depth of the white clay becoming shallower during the thirteenth century and eventually being applied as a slip. The use of slip was first adopted in the north by the workshops producing tiles of lesser quality in the later 13th century (the Inferior Plain Mosaic Groups and the Inlaid Copies; Groups 2, 3 and 5). Slip may have been preferred to inlay as it would have reduced the amount of white clay required and it would have taken less time to apply. In some cases the slip seems to have been applied by dipping the tiles face down in the solution, leaving a ‘tide mark’ around the sides of the tiles. The disadvantages of slip as compared to inlay were that the designs were often smeared and would wear less well. However, the use of slip could have qualitative advantages. It avoided the problems associated with inlay, which tended to shrink more than the tile quarries and consequently crack and fall out. White clay was often mixed with a proportion of red clay to prevent this happening (Eames 1980, 1, 46). The use of slip would also have facilitated the production of more intricate designs. The depth of slip varied among the later workshops and the quality of the finished tiles often depended on how carefully the slip was applied.

Other modifications made over a period of time included a marked decrease in the number of shapes made. Exceptions to this were the instances of simple mosaic from Fountains, Rievaulx and Whalley Abbeys (Groups 34 and 21), thought to be of late medieval date. The only shapes made by most workshops from 1300 onwards were square tiles, with triangular tiles made from diagonally scored square tiles. The tiles to

be split into triangles were scored with a knife to half way through their depth and broken after firing. At an earlier date, some Plain Mosaic and Inlaid tiles had been cut additionally right through at the corners, probably to prevent the corners getting broken when the tiles were split (Fig 10.22). The tiles of the Usefleet Group were not scored and split but were shaped from the outset as either squares, triangles or rectangles. These 13th-century variations were standardised and further refined by later workshops. For example, no scored and split triangles are known among the patterned tiles of the Huby/Percy Group of *c.*1500 (Chapter 23). Only the plain tiles of this series were treated in this way. This may also have been the case with the Nottinghamshire tiles.

The adaptations made over the course of the 13th century can be seen as a way of speeding up production and reducing the use of some materials, particularly white clay. Although these features can be shown to have evolved indigenously in Yorkshire, the use of similar techniques elsewhere in the country shows that adaptations made by the northern tilers were in line with trends elsewhere. From the 14th century, the use of slip was very widespread on English tiles, a limited range of shapes was produced, tile sides were not trimmed or otherwise specially treated and keys were rare. These adaptations resulted in widely standardised products. The limited range of shapes also made it simpler to lay the pavements.

A new range of tile-making techniques was introduced from the 14th century through the importation of Plain-glazed Netherlandish material. These techniques included the use of a nailed board, to hold the quarries still or move them around, and the use of a brush to apply the slip. Two glazes were used to produce the differently coloured tiles, shown by the medium brown of the glaze on the body fabric of poorly slipped examples, as compared to the dark green, brown or black of the glaze on the body fabric of tiles intended to be glazed without slip. Two glazes had been used by the Plain Mosaic tilers of the 13th century. Strongly contrasting colours may have been a priority for tiles without other decoration. The tiles had a high gloss, thought to have been achieved by firing the tiles twice, both before and after applying the glaze. Despite being produced over a long period, the Plain-glazed tiles were a remarkably standardised product. The majority of the tiles were, for example, a regulation depth of 25–30mm, they were produced in a specific range of sizes and the fabrics were uniformly prepared and fired. Apart from some variation in the quality of slip application, a strikingly similar product was distributed over huge distances.

The sequence of assimilation and adaptation apparent in the 13th century was not repeated following the introduction of Netherlandish tiles. The new techniques were not adopted and modified by 14th-century tile makers supplying the north of England. In the later 15th century, the Transpennine and Huby/Percy tile

makers combined some Netherlandish methods with a range of decorative techniques known from earlier periods in England. The features adopted from the Plain-glazed Netherlandish tiles included the use of a nailed board and a brushed slip. However, the tilers probably did not adopt the technique of firing the tiles twice. Two glazes were used, although the wider range of colours recorded for the Transpennine and Huby/Percy tiles might show that the preparation of the glazes was more haphazard than on Plain-glazed imports, perhaps a result of variation in the quality of available materials. The decorative techniques used by the Transpennine and Huby/Percy tilers combined several different traditions, with production of two-colour, shallow counter relief and line impressed tiles. The manufacture of shallow counter relief and two-colour decorated tiles by the same workshop was a feature of some 14th-century industries in the south of England (Eames 1980, 1, 221). The manufacture of line impressed tiles was a feature of some 14th-century workshops in the midlands, and tiles of this type had already been used in the west of the study area.

This eclectic combination may have been intended to represent the full range of medieval paving in floors of *c.*1500. However, the decorated tiles made by the Transpennine and Huby/Percy workshops cannot really be compared with 13th- and 14th-century material. This is because the Transpennine and Huby/Percy tilers were actually making inferior Plain-glazed tiles but with a design stamped on the quarry surface. They did not remove the slip from the background of the design and often the slip and glaze did not coat the whole of the upper surface of the quarry. The end product was a broadly familiar, but low quality, paving that, nonetheless, was accepted by customers. These tiles were made with a quite different mind set from 13th century material.

Loss of skills

There was no progressive change from good to inferior material over the medieval period. Some of the small groups of 13th-century tiles, interpreted as less skilled copies of the main workshops, were of the poorest quality. In particular, the tiles of Inferior Mosaic (Groups 2 and 3) were inaccurately cut out and suffered from a reaction that separated the glaze and the white clay. At a later date, the Netherlandish Plain-glazed tiles also included two standards. Where the slip and glaze on these tiles was well applied, the simple chequered pattern made by alternating light and dark examples made as effective a floor as much decorated paving. The isolated groups of poor quality material in existence in the later 13th and earlier 14th centuries probably show that there were an insufficient number of skilled tile makers at that time. The widespread use of the poor quality decorated tiles of the 15th century may, however, indicate a more general loss of skills and reflect the absence of an existing industry in the region.

It might be expected that knowledge of two-colour decoration would have been retained within Cistercian monasteries and this may be demonstrated by some better quality material at Fountains Abbey (in the poorly defined and dated Group 25). At Rievaulx Abbey, however, where tile making may have been a specialism in the 13th century, the late medieval material did not include two-colour decoration and was of fairly dismal quality (Non Standard Plain-glazed tiles and those of Group 21).

Among the smaller, more localised, producers a lack of technical expertise is apparent among the Nottinghamshire copies, probably made around Hull and York in the 14th century. The makers had difficulty achieving two-colour decoration (for example Groups 16 and 17 and some Unallocated tiles from York), with the designs on some of these tiles barely visible because the colour of the glaze over the slip was indistinguishable from that over the body fabric. They were not the work of a specialist but, as they were competently fired, they may have been made by a craftsman producing roof tile or other ceramics. Small-scale workshops showing competence include the isolated products from Bolton Priory (Group 10 and Unallocated tiles), tiles of Group 29 at Beverley and Thornton and those of Group 28 at Carlisle and Holm Cultram.

The eventual revival in home-produced decorated tiles in the 15th century was associated with close parallels in the tile designs in use in different regions, as opposed to the general stylistic influences of earlier material. There were parallels between several of the northern tile groups with material in the north-west midlands (Cheshire, Staffordshire and Shropshire). The decorated tile making tradition may have shifted westwards as Plain-glazed tiles were adopted along the eastern seaboard. Production in the north and that in the west midlands appears to have been carried out separately, without the same tilers being involved in the two regions. In these circumstances, the close copies of the 15th-century designs suggest that design books were available to the tilers by this period. Some anomalies might be explained in this way, in particular the single tile of a Penn design attributed to St Mary's Abbey, York (see entry 112, Chapter 27).

In contrast to the poor decoration on most of the late medieval material in the north, there were improvements in some specialist skills, particularly in making the design stamps. The skills of the stamp makers, particularly in understanding the necessity for reversing asymmetrical designs and inscriptions on the stamps, improved over the medieval period, with few errors on the Huby/Percy stamps of c.1500. This may be attributed to technical developments in other spheres, possibly associated with the development of printing and wider knowledge of the preparation of woodcuts and moveable type. These techniques required some of the same skills as stamp making.

One factor hampering the revival of skills at a later date may have been a change in the status of tile makers.

It seems likely that the status of the 13th-century tilers, who were introducing a new and esoteric product, was higher than that of their later counterparts. The characteristics of the 15th-century material might suggest that there were greater choices for the more skilful craftsmen (for example in printing) and that the more tedious, uncomfortable and lower status aspects of the work were done by less able people. The value put on the durability of floor tiles may also have declined over the period. The possibility that short-term effects could be achieved more cheaply and quickly in other media may have contributed to the demise of the industry in the 16th century (see Chapter 7).

Innovation and experiment

Most evidence for experiment in tile manufacture and decoration is from the 13th and earlier 14th centuries. Attempts to achieve a particular effect or resolve technical difficulties, in addition to those already noted, can be seen in the various methods used to produce two sets of designs, one with the pattern coloured yellow on a dark background, and the other with the colours reversed and the pattern dark on a yellow background. The Plain Mosaic tilers achieved this using a reverse inlay technique, involving layers of differently coloured clays (see Chapters 2 and 10; Fig 10.19). The reverse inlay technique has occasionally been identified elsewhere, at Saint Pierre-sur-Dives, Calvados (Knight and Keen 1977; Norton 1986b) and among tiles from Revesby Abbey, Lincolnshire (Eames 1980, 1, 69), but there are no parallels among the designs at the various sites. The Decorated Mosaic tilers, wishing to achieve the same effect but with a much larger number of patterned tiles, chose to cut two stamps of each design, one with the pattern in relief on the stamp and the other with it in counter relief (see Chapters 3 and 14). Once a second stamp had been cut, the use of two stamps would have been a much simpler method of achieving two versions of a design.

Various ways of cutting out the tiles were tried. Again, the most time-consuming methods were used at an early date. Convex shapes in both the Plain and Decorated Mosaic Groups were trimmed by hand with a knife, but the Plain Mosaic shapes were trimmed more finely. Some Plain Mosaic shapes were marked out with twine before they were cut out, and this was done after the white clay had been applied (Fig. 10.20). Diamond-shaped tiles of the Inferior Plain Mosaic Group were made by scoring the shapes out on a large slab of clay, to be broken up after firing. These tiles, with their partly broken sides, would have fitted poorly in their eventual mosaic arrangement. Other experiments involved impressing the stamps of some later 13th-century designs on a large slab of clay several times before the tiles were cut out (occasionally found on examples of the Inlaid and Usefleet Groups, and Group 3, and possibly on Plain Mosaic tiles of design 1.13). In some cases these tiles were fired as large slabs.

In other cases they were marked out with a knife before stamping and then cut out as individual tiles before firing. The practice of stamping the clay before cutting out the quarries might explain why the concave profile of tile sides was less apparent in the north than on some later medieval decorated tiles elsewhere in the country. The concave profile is probably caused by the pressure of the stamp on the upper surface of a quarry that has already been cut out.

The most successful innovations among the English tile groups should probably be attributed to the Decorated Mosaic and Nottinghamshire tiles of the late 13th and 14th centuries. This was seen in the adaptation of assemblages to the needs of different customers, for example in the reduced range of tile shapes supplied by the Decorated Mosaic tilers to secular customers for smaller scale pavements. The Decorated Mosaic tilers had begun to work from a fixed base and this development would have made laying the tiles feasible as a separate process from manufacturing them. These tilers and those making the Nottinghamshire tiles produced many good quality design stamps and innovative designs. The slip was not too thinly applied and usually was not smeared. The tilers appear to have gained a higher level of control of the oxidation process than previously. The tiles tend to be highly fired, either fully oxidised or fully reduced, something which is reflected in the more restricted range of glaze colours recorded for the Nottinghamshire Group. The strong contrast in the colours on these tiles created a different look from anything seen previously in the study area.

The Decorated Mosaic and Nottinghamshire tilers also reduced the depth of their tiles. This would have had a number of practical implications, reducing the amount of clay used, the drying time, space in the kiln and the transport costs. However, combined with their other properties, this lighter weight, harder appearance also contrasted with the softer coloured quarries and 'chunkiness' (a substantial depth in relation to the surface dimensions) of earlier material. Some of these features may have been intended to improve the intrinsic appeal of the tiles and, if so, would have reflected more general changes in fashion.

The idiosyncrasies and experiments found among the 13th-century material have been explained in relation to buildings as a consequence of training through an apprentice system, as opposed to training through the use of instruction manuals (Marks 1997). The apprentice system was associated with close links and well-developed communication channels between the producers of raw materials, the designers and the builders. Similar explanations are possible for tile-making before 1300. The great achievement of the Decorated Mosaic and Nottinghamshire tilers was that they managed to deliver a good and clearly defined product without such close links. Their innovations were in marketing as much as in manufacturing expertise. In the end, the efforts of the 14th-century tilers to

deliver over a wide area from a fixed base (though they probably moved to individual sites to carry out larger jobs) were difficult to reconcile with the desire for personalised designs prevalent among their customers. This problem was resolved by the absence of patterns on the Plain-glazed tiles imported from the Netherlands.

It is notable that, although many of the adaptations in tile making can be explained as intended to make manufacture more economical and reduce the number of stages involved (i.e. to speed up production), there was a commitment to quality among many of the most successful workshops. This was apparent among the Plain Mosaic, Decorated Mosaic and Nottinghamshire Groups and also among the better quality Plain-glazed tiles. The absence of designs on Plain-glazed tiles would clearly have greatly simplified the manufacture and the laying of these pavements, but not all the manufacturing techniques associated with these tiles were economising features. In particular, the practice of firing the tiles twice, producing a glossier, glassier surface, would have greatly increased handling and fuel requirements. It also meant that the tiles did not last as well as those of earlier tile groups, with the glaze tending to flake off from the quarry before the tiles were worn. The manufacture of a shiny, attractive product was clearly of greater importance than hard-wearing qualities. Double firing was used in continental pottery production from the mid 14th century onwards, with re-firing and glazing sometimes occurring at different locations and suggesting 'fairly complex forms of competition' (Verhaeghe 1997, 31).

Design and symbolism

Mosaic paving

It has been argued in Chapter 2 and noted above that the complex geometric patterns made with Plain Mosaic tiles were derived from representations of the cosmos found in antique stone floors and tapestries. The style of this paving is thought to have been adapted by monastic tilers to suit the ideologies of Cistercian and Augustinian houses in north-east Britain. Plain Mosaic style consisted of alternating, then reversing, light and dark coloured tiles, either shaped or square, in a wide variety of geometric patterns. Mosaic paving and the reversing of patterns remained a feature of floor tiling in the study area into the 14th century. The Decorated Mosaic pavements introduced complex interwoven designs across large circular arrangements. The continuing inspiration of the world view of Plain Mosaic tradition may be seen in the inclusion of panels illustrating the story of Adam and Eve in mosaic pavements of the earlier 14th century outside the study area, at Prior Crauden's Chapel, Ely (Keen 1979). The admiration felt for the achievements of the northern tilers, and empathy with their work can also be seen in another early 14th-century pavement, made for the

Cistercian foundation of Warden Abbey, Bedfordshire (Baker 1982; 1987; 1993). Elements of Plain Mosaic design were clearly incorporated in the elaborate layout of the Warden floor.

Personal references and patronage

From *c.*1300, most new motifs in tile designs involved references to people (local, royal and religious). As discussed in Chapter 3, the castle and lion designs of the Decorated Mosaic Group were a possible heraldic reference to Eleanor of Castile and Leon (designs 7.91–7.93, 7.98 and 7.99; Binski 1995, 108, pl 148). Laid alternately they would replicate the design on Eleanor's tomb in Westminster Abbey. These designs may have been paralleled by design 6.17 (double headed eagle and griffins) of the Usefleet Group at around the same time, but in this case the two designs were on the single tile (the family or institution to which they refer has not been identified). The Usefleet Group of *c.*1300 also had the first inscriptions referring to a known person from the region (designs 6.1 and 6.3) and the first dedications to the Virgin (the AVE MARIA designs, 6.9 and 6.10). The heraldic shields from Newminster Abbey may date from the later 13th century (Chapter 15; Group 8). Other designs of the *c.*1300 and 14th-century tile groups (Decorated Mosaic, Nottinghamshire and Group 17) included human and anthropomorphic figures.

Personal references account for a high proportion of the later medieval tile designs in the north. Formal references to families through heraldic designs were particularly popular in the mid 14th century and in *c.*1500, accounting for more than 50% of designs among both the Nottinghamshire and Huby/Percy assemblages. These were the times when the range of customers for floor tiles was at its broadest. It is notable that only *c.*10% of the 15th-century Transpennine Group tiles, whose customers were predominantly monastic, had heraldic designs. Many of the other new motifs of the late medieval tile groups were probably rebuses (puns on people's names), monograms or badges (emblems of family or other affiliations). It is possible that these designs referred to people who did not have the right to bear arms, although it has not been demonstrated that this was the case.

The two phases of popularity in heraldic design in the north-east corresponded with similar fashions in the south-west of the country but were of slightly later date. Heraldry was particularly prominent in the south-west in the late 13th and mid 15th centuries. The 14th-century fashion for these designs may have been inspired following the promotion of heraldry, knighthood and romance by Edward I and his successors (Wagner 1956, 50; Denholm-Young 1965, 45–54; Brault 1997, 18–54). The revival in the use of heraldic decoration by the nobility of the early Tudor period may have been similarly conceived (Howard 1987, 42;

Cooper 1999, 24–5). However, while heraldry might at some periods show allegiance to the Crown, it could also indicate periods of political instability or upheaval, encouraging people to advance their own status. In this regard it is notable that heraldry is most often found on floor tiles in the farther flung regions of the realm.

On the 14th-century tiles in the north, the royal arms were well represented and monastic references were absent (see Chapter 4). Most of these designs were originally made for landowners to the south of the study area but some northern families were probably also represented. The inaccuracy of some of the heraldry on these tiles may demonstrate the difficulty of long-distance communication between the tile makers and their customers. It is possible that some of the designs were produced as a marketing ploy, to appeal to potential customers, rather than being commissioned by the families concerned. The designs did not have to relate specifically to the sites at which they were used, but were popular or fashionable for their own sake.

In contrast, the heraldic designs in use north of the Humber in the early 16th century did not include the royal arms. They celebrated leading members of both the monastic and secular aristocracies. These tiles are thought to have appealed to those opposed to the suppression of the monasteries (Chapter 6). There was a long association between the monasteries and the use of floor tile in this region. A different political point would have been made by the new tiled floor of *c.*1550 laid at Lacock Abbey, Wiltshire, following the change of ownership of the site at the Dissolution. Sir William Sharington was the first lay owner of the convent and the tiles combined his arms and those of his third wife, Grace Paget, with novel Renaissance motifs (Gaimster and Nenck 1997, 187–8, fig 13.14). These tiles, reflecting the new order, replaced medieval examples used earlier by the monastery.

Some specific interpretations of late 13th and 14th-century heraldic pavements are also possible (see Chapter 4). The later 13th-century pavement at Hailes Abbey, Gloucestershire, was an opportunity for local patrons to associate themselves with the great figures of their time. The high quality heraldic pavement laid in the chapel at Ludlow Castle, Shropshire, may have commemorated Mortimer's escape from the Tower in *c.*1328 and demonstrated the righteousness of a rebel's cause. Fourteenth-century examples from the study area suggest that heraldic floor tiles were popular among those who were either newly promoted or recently returned from disgrace. The tiles enabled these people to advertise and confirm their new-found status.

These motives may also have prompted patronage of religious institutions and might partly explain the occurrence of apparently secular designs on monastic sites. From the later 13th century there was a change at monastic sites from the huge Plain and Decorated Mosaic schemes to smaller numbers of tiles, making them more suitable as gifts from secular patrons. The

tiles inscribed with the name of John Usefleet might represent such a bequest. The Nottinghamshire tiles in York Minster recorded as laid in St Nicholas' chapel might represent another example. The various areas of stone and tiled paving at Furness Abbey could also reflect input from patrons (see entry 30, Chapter 27). A bequest for Plain-glazed paving of the north aisle of St Mary's Church, Beverley, is known from documentary sources (see entry 10, Chapter 27). Several other documented examples are known from elsewhere in the country (for example, Keen 1972, 140–51).

Hunting or chase scenes were the other most popular design motif on tiles of the late Middle Ages. A high number of these occur on Transpennine Group tiles, which were widely used by the monasteries. While these designs may illustrate the convergence of secular and religious lifestyles in the 14th and 15th centuries, it is possible that chase scenes also had a moralistic interpretation or religious symbolism in the same way as some of the story-telling designs. Themes among material of the later 14th century onwards included illustrations of fables and religious stories (see Chapter 6).

Plain-glazed anonymity

The chequered Plain-glazed pavements associated with imports of tiles from the continent from the 14th century onwards contrasted dramatically with traditional English decorated floors. It is possible that, like heraldic tiles, they were open to various interpretations (Chapter 5). In some contexts they may have symbolised a less personalised and more sophisticated continental lifestyle. In the reformed monasteries of northern England they could also have had fundamentalist overtones. Plain Mosaic paving, which had included a simple chequered arrangement, was still in use in parts of the old abbey churches at the Dissolution and Plain-glazed tiles are thought to have replaced Plain Mosaic in some cases, for example in the church of Fountains Abbey. The plain chequered tiles brought a new ordered uniformity to ceramic paving.

Inscriptions and literacy

Inscriptions were found in a high proportion of floor tile designs in *c.*1500, suggesting that the fashion for writing, or at least labelling, burgeoned in the late 15th century in north-east England (Chapter 6). Literacy among tilers is most clearly demonstrated by the hand-written scrawl on a tile of the 15th century commemorating an abbot of Sawley Abbey (Transpennine Group design 23.34). Design stamps with lettering or inscriptions occurred in the study area from the later 13th century onwards and give some indication of how the tiles were going to be used and, perhaps, how familiar the tilers were with lettering. There was some very limited evidence to suggest that some of the Decorated Mosaic tiles of *c.*1300 were laid as an alphabet, a possible reference to the expertise of the

monasteries in this sphere and the power of literacy (Chapter 3). Three variations on the alphabet theme were identified among later, Nottinghamshire, tiles and discussed by Norma Whitcomb (Whitcomb 1956, 19, nos 132, 133, 134). On one, the alphabet with the letters correctly shown on the tiles is spread over three tiles, with scoring between the letters so that they could be split up and used individually. In the second example (Wh/133) the whole alphabet is shown on a single tile, like a horn book, and the letters are the right way round but run right to left across the tile. The third version appears to be a poor copy of design Wh/133 with the letters on the finished tile appearing the wrong way round but running from left to right. Whitcomb's illustration of this design suggests that someone copied the general shapes of the letters without knowing what they were. She concluded that the stamp maker of the first example was literate but that the mistakes and illegibility of the third example showed that the stamp maker had simply made a 'slavish copy' of design Wh/133 (Whitcomb 1956, 19). The difficulties of showing the alphabet correctly on stamped tiles might mean that these were intended as apprentice pieces demonstrating the skill, or otherwise, of the tilers.

The lettering on all these stamped tiles appeared in yellow on the finished tiles, unlike sgraffiato examples in which the lettering appears dark on a yellow ground, like ink on vellum. One of the changes that had occurred by *c.*1500 was that the stamped inscriptions were carved so that the lettering appeared dark against a light background on the finished tiles, like the sgraffiato examples. Another change in the later 15th century was that the epigraphy, like the heraldry, was divided between four tiles, allowing space for longer inscriptions and more detailed designs. Several writing styles are used by the stamp makers of *c.*1500, and all of these inscriptions appeared the correct way round on the finished tiles. It seems that, from the later 13th century onwards, some of those closely involved in the tile production process understood lettering. However, there is a sense of greater ease with lettering among the 15th-century examples. The monogram designs are, after all, a type of game, while both the scrawl of the Sawley tile (design 23.34; Fig 22.1) and the skilfully formed Whalley sgraffiato tiles (Group 22; Fig 21.3) exhibit a boldness that contrasts with the 13th-century examples of Group 2 or the difficulties encountered by the John Usefleet stamp cutter.

Changes in use

As has been seen, huge numbers of floor tiles were laid in the churches of monasteries in the north of England. Tiles were also occasionally laid in private chapels and parish churches. Discussion of use outside these spheres is hampered by the lack of contextual evidence from secular and urban sites. Frustratingly, the available archaeological evidence does not show where the tiled floors on 14th-century manorial sites in the study

area were located. At a later date, the use of tiles in urban domestic contexts was identified in a few cases, particularly at Barley Hall, York, where the Plain-glazed tiles were laid in both the hall and service area between 1440 and 1536, and possibly at Lurk Lane, Beverley. However, there is a strong possibility that both these sites were owned by religious institutions and were used for prebendal housing.

Evidence was more widely available for an extension of the use of floor tiles to domestic and other buildings within monasteries. Tiles were eventually laid in chapter houses and refectories, abbot's houses, warming rooms, claustral walks and lavatories. These locations suggest increased delineation of space in domestic buildings, greater concern for the safety of persons or possessions from fire and more interest in decorum, cleanliness and utility. Where dated, these instances are attributed to the 15th century. In some cases, as at the abbeys of Meaux and Kirkstall, earlier pavements were re-used in new locations. In other instances, as at Rievaulx Abbey, new tiled floors were laid in the dining hall of the abbot's house and the west bay of the abbey church. At Fountains Abbey, the hall of a grange was paved.

It is difficult to estimate the extent to which this wider use by the monasteries reflected practice in secular buildings. However, current evidence suggests that tiled floors were usually restricted to the chapels of castles in northern England, even in the 15th century. To date, only Hylton Castle, Sunderland, is thought to have had a Plain-glazed tiled floor in the reception or dining room of a guesthouse. Although the evidence is sparse, the use of floor tiles in less overtly religious spheres rarely occurred before the 15th century in the study area. This contrasts with the evidence for the use of floor tiles in a wide range of rooms on royal sites in southern England from the 13th century onwards.

A resource for the future

This study shows the huge impact of the reformed monasteries in the north of England, not only in terms of the use of materials and the control of some areas of manufacture but also in a lasting influence on people's ideas and attitudes. The 13th-century pavements were associated with a new wave of expansion, enlargement and agrandissement of the monastic churches. They were achieved once the religious houses and their landscapes were firmly established and organised. The pavements were a demonstration of the intellectual superiority and international connections of these houses. The impact they made reverberates in the imitative material of *c.*1325 found on sites further south. The apparent involvement of the religious in the manufacturing process may have influenced attitudes towards production, investing a spiritual element to the labour and technology that was involved. The close association between ceramic floor tiles and the

monasteries was retained throughout the medieval period in the north.

The regional approach employed for this study has allowed the identification of different phases and spheres of use in northern England. The overview achieved by inclusion of all material in the study area showed that there were expansions in use in *c.*1300 and in the late 15th century. These varied in character as material became available from different sources, or as a result of changes in the organisation of manufacture and perceptions of value. In general, usage appears to have been limited by the difficulties of supply rather than by a lack of demand, although the personalisation of designs may have been used by the Nottinghamshire and Huby/Percy tilers to win custom. A broadening of people's attitudes towards the value of the material in buildings and as a fashion item may have been encouraged by the more homogeneous imports of Plain-glazed tiles from the Netherlands.

The use of a rigorous recording methodology enabled sufficiently close comparison of the material to identify the products of individual workshops. As a result, comparisons were possible between different parts of the study area, showing the huge differences in what was available to sites east and west of the Pennines, between landlocked sites and those on navigable waters and between those on the eastern and western seaboard. It was possible to identify some aspects of the nature of long-distance contacts, showing where interaction involved the movement of ideas or styles, rather than the movement of people. Combined with scientific analysis of the tile fabrics, the methodology also allowed identification of significant differences in the organisation of manufacture.

Many of these aspects await clarification in the future. Fabric analysis of material from the late medieval workshops would be instructive, particularly if combined with experimental work aimed at improving interpretations of ICP-AES data. Further discoveries in the region, of kiln sites and tiled floors, especially those from sites with good contextual information, will lead to new and improved interpretations. Studies of other regions will enable closer comparisons to be made. In particular, there is considerable scope for collaborative work with specialists in the Netherlands.

It is hoped that this study shows that floor tiles, with all their variations in design, manufacture and distribution, are of value as a means of identifying and illustrating many aspects of medieval life and thought. The existing assemblages are the tangible remains of the workshops defined here. Preservation of these assemblages is essential for future studies, to allow comment on new questions and to make new comparisons. Among the most pressing issues in relation to material held in loose collections are the sheer bulk and weight of these finds, and the consequent storage and curation costs. However, it is unfortunately the case that large samples are necessary in order to carry out meaningful analyses. Sampling of assemblages should

not be carried out by non specialists. Of equal concern is the fact that much of the material now in storage, including some from recent excavations, cannot be confidently provenanced. It can also be difficult or impossible to obtain contextual information for excavated finds. There seems to be little general understanding that unprovenanced material is of relatively little value in research terms. Improvements to existing systems are urgently needed to avoid the loss of material following excavation and to retain the provenance and contextual information of material in storage.

The conservation of material re-set on site poses different challenges (Fig 8.1; see also Figs 12.1, 22.2 and 22.4). The particular value of the re-set tiles is that they retain the contextual link with the buildings in which they were laid. The re-set tiles not only retain their provenance to the site but, because they are thought to have been re-set in approximately the location in which they were left at the Dissolution (see Chapter 26), they preserve information about the layouts of pavements, the uses of different types of tiles, and the extent of paving at different periods in these buildings. The degree of wear on tiles at Byland Abbey preserved traces of evidence of the medieval use of this church. The association of the tiles with particular buildings also helps to date several of the workshops. Many of the sites with re-set tiles are ruined abbeys that are open to the public. The tiles are therefore on public display on a scale that would be difficult and expensive to achieve in a museum or exhibition. All of the above are reasons to attempt to conserve the re-set tiles on site as far as is possible. There is no doubt, however, that this material will eventually be eroded



Fig 8.1: Worn and shattered Huby/Percy Group tiles in the nave of Rievaulx Abbey, early spring. Late medieval tiles are prone to shattering, while earlier material wears down and loses its decoration. See also Figs 12.1, 22.4 and 27.8

away. Tiles that were re-set for display at an early date, for example some of those at Fountains Abbey, are now completely worn out or broken up. Deterioration of the condition of material at other sites is demonstrable, particularly as a result of frost action and grass mowing. In view of the significance of some of the paving, selective retrieval and/or reburial would seem to be justified. However, the qualities of the various types of tiles, their locations and the conditions on site make generalised recommendations inappropriate. Individual conservation and maintenance strategies are needed for each site that has re-set material, in particular for the abbeys of Byland, Rievaulx and Fountains.

The Tile Groups

9 Introduction to the tile groups and the recording methodology

The following chapters set out the details of each of the 34 tile groups identified in the study area (plus Plain-glazed and unallocated tiles), together with drawings of their designs, mosaic shapes and arrangements. For each group, the sites where the tiles were found are listed and numbers of extant tiles are given. The physical characteristics of the tiles and their condition are detailed. A conclusion discusses how each group can be interpreted. In most cases the groups are thought to represent the products of a particular workshop, with the same tilers making the tiles from the various sites. However, in the case of Plain-glazed tiles (see further

below), and some of the smaller, less well-represented groups, such a specific interpretation is not possible. The conclusion also notes any clear variations between assemblages from different sites or areas that might, for example, represent sub-groups of the material. Any comparative material is also discussed here and the dating for each of the tile groups is set out, based on an amalgamation of the information gained for each site given in Chapter 27. The tile groups and their chronology provide the framework for the chronological survey and thematic discussions of Chapters 1–8.

Discussion of the tile groups is prefaced below by a brief explanation of the recording methodology and the main terms used. The 34 tile groups are listed in Table 9.1, in chronological order as far as this is known. The dating of some groups, particularly those represented at only one or two sites, is very tentative. The least well dated are prefixed with a question mark. All the tile groups were identified by numbers but names were also given, and are used in the text, particularly for the largest groups (shown in bold in Table 9.1). These are simply labels, used instead of the group numbers because they are more memorable.

Table 9.1: The numbers, names and dates of the tile groups

<i>Group no.</i>	<i>Name</i>	<i>Dating (as far as is known)</i>
1	Plain Mosaic	<i>c.</i> 1220–1270
2	Inferior Plain Mosaic	1249–1269
3	Possibly Inferior Mosaic	1249–1269
4	Inlaid	<i>c.</i> 1250
5	Inlaid Copies	after <i>c.</i> 1250
6	Usefleet	<i>c.</i> 1300
7	Decorated Mosaic	later 13C–earlier 14C
8	Other decorated mosaic	?later 13C–earlier 14C
9	Unprovenanced decorated mosaic	–
10	Line Impressed Mosaic	<i>c.</i> 1325
11	Other line impressed mosaic	<i>c.</i> 1325
12	Holm Cultram 1	?later 13C–earlier 14C
13	Holm Cultram 2	?later 13C–earlier 14C
14	Holm Cultram 3	?earlier 14C
15	Nottinghamshire	<i>c.</i> 1320–1370
16	Nottinghamshire Copies	?14C
17	Faces	?14C or later
18	Hull	?14C
19	Tynemouth	at or after <i>c.</i> 1326
–	Standard Plain-glazed	14C–16C
–	Non-standard Plain-glazed	14C–16C
20	Dieppe/Sussex	<i>c.</i> 1400
21	Straight-sided mosaic	?late 14C or later
22	Tomb cover	?late 14C or later
23	Transpennine	mid or later 15C
24	Huby/Percy	<i>c.</i> 1500
25	Fountains	?late 14C or later
26	Whalley	?late 14C or later
27	Rowe – York	?15C or later
28	Carlisle and Holm Cultram	?15C
29	Hulton	15C on
30	NW line impressed	15C
31	Hispano-Moresque	earlier 16C
32	Shap	–
33	Hand Decorated	–
34	Other mosaic	–

Recording and grouping medieval floor tiles

The manufacture of medieval floor tiles has often been described as a series of established steps or processes. In fact many different ways were used to make ceramic tiles, with tools and methods varying between workshops. The practices of different workshops are evidenced by the physical characteristics of the tiles. As a result, grouping tiles with the same physical characteristics can identify the products of individual workshops. This is the main objective of recording the tiles.

The closest links in manufacture can be demonstrated by the use of the same design stamp (usually a wooden block with a design cut out on its surface) on different tiles. The use of the same design stamp on tiles at different sites is a strong indicator that the same workshop was producing tiles for more than one site. However, many other characteristics of floor tiles are valuable as identifiers of the products of a workshop. For example, aspects of the tiles that had to fit together to form a coherent layout in the floor can often be used to group material, particularly the shape and size of the tiles and designs that were spread over several examples. Often, the products of a particular workshop will be characterised by a combination of working practices.

Recording floor tiles also generates other useful information. For example, the re-use of tiles and patching of floors can be indicated by finds of tiles of different

groups together, by the coherence of tile designs and arrangements, the use of broken tiles, more than one type of mortar and variations in wear.

A detailed recording methodology was used to allow adequate characterisation and comparison of assemblages (Stopford 1990b). The methodology included 24 recording categories for plain tiles, 27 categories for decorated tiles and 29 for mosaic shapes – although, in the nature of archaeological material, information was rarely available for every category. The tiles were recorded onto a computer database (Borland International, dBASE, later transferred to Microsoft Access) and grouped first by instances of the use of the same stamp, then by design, shape and size, and then by frequency counts of all other characteristics. The main recording categories, and definitions of the terms used, are set out below. Illustrations of many of the characteristics were published with the recording methodology (Stopford 1990b, pls 1–10).

It should be noted that some of the distinctions made by tile specialists when recording tiles do not equate with the tile groups eventually identified. For example, to speed up the time-consuming and expensive process of recording a large tile assemblage, a broad distinction is usually made between **shaped** and **square** tiles. Square tiles are the commonest shape and many workshops only made square tiles, scoring their upper surfaces on the diagonal before firing so that they could be split into triangles later if needed. **Scored and split** triangles were often used to form a straight edge where square tiles were laid on the diagonal in a building. Shaped tiles, on the other hand, refer to more complex shapes, which were made to fit together in the manner of a jig-saw. Tile groups that include shaped tiles in their assemblages are called **mosaic** tile groups. However, **all mosaic groups also include square tiles**. Similarly, when recording tiles it is quicker to divide them into **decorated** tiles and **plain** tiles (tiles glazed but without patterns). This is simply the speediest way of dealing with an assemblage. Again, although the division between decorated and plain is made when recording, **almost all tile groups with decorated tiles also had plain tiles**. The plain tiles were often used as spacers between blocks or sets of decorated tiles. In the late medieval period, plain tiles were made for use on their own, without decorated tiles. Such tiles were often laid in a chequered arrangement of light and dark coloured examples. The absence of designs on these tiles means that they are less well characterised, and therefore less closely grouped, than decorated examples. Plain tiles that were made for use on their own, without decorated tiles, are assigned to a large and very general tile group called **Plain-glazed**, and are always referred to as Plain-glazed tiles in the text. For further discussion of Plain-glazed tiles and the possibilities of grouping them, see Chapters 5 and 20.

In summary, categories assigned during recording are solely a convenient method of sorting tiles initially

and speeding up the recording process. The assignment of tiles to groups is done later, and the tile groups that are eventually identified cross-cut some of the earlier recording categories.

Making medieval floor tiles

The main processes involved in tile manufacture are described here, with some broad definitions of the terms used. More detailed discussion of tile manufacturing processes, the various decorative techniques employed and some information on regional variations can be found in Elizabeth Eames' catalogue of the tiles in the British Museum (1980, 1, 17–140). A diagram illustrating the most usual methods has been published by Christopher Norton (1992, 31, fig 13).

The clay used to make the tile quarries (**quarry** = the tile body) might have been prepared by exposing it to frost over the winter. Other preparatory work could have involved removing pebbles and other unwanted material either by mixing the clay with water, leaving it to settle out and discarding the material at the bottom, or by passing it through a sieve. The large pebbles found in the fabric of some floor tiles show that preparation could have been perfunctory and sieving seems unlikely in most cases. Temper of various kinds, but most often quartz sand, might be added to the clay. This would have necessitated kneading or mixing, a process that could have been carried out more or less thoroughly, with consequent effect on the structure of the clay.

Subsequent processes would have depended on the type of tile being made. Square tile quarries could be formed either by rolling out the clay and cutting around a wooden block, or other form, with a knife, or by cramming lumps of clay into a mould. The layer of sand found on the base of most tiles suggests that, in either case, the work was carried out on a surface coated with sand. Few square tiles have any trimming or other subsequent tidying up of their sides. Most have bevelled sides, where the tile sides are angled so that the base is smaller than the upper surface. Bevelled sides might suggest that the tiles were cut out with a knife, as angling a knife would be easier than making a mould of this shape. The use of moulds has been suggested in some specific cases, for example among tiles made for Chertsey Abbey, where it was noted that the design was impressed to exactly the same depth each time and the fabric was slightly stratified, with finer clay near the upper surface (Gardner and Eames 1954, 32; Eames 1980, 1, 154). It is difficult to see how this could have been achieved other than in a mould. The use of moulds might also be indicated by irregular cracks or lines in the fabric. These appear to be the outlines of individual lumps of clay, pushed into a mould and not amalgamated with the rest of the fabric. Some distortion of the shape of the quarry and sand on the sides of the tiles might be expected to result from the use of moulds but these features were not found.

Nail holes are a feature of some late medieval floor tiles, visible in the corners and sometimes the centres of the upper surface of the quarry. It is generally accepted that these holes were made by nails knocked through a wooden board but it is not known whether this board served as the form for cutting out the tiles or was a separate piece of equipment used for moving the tiles about. Two sets of nail holes are occasionally visible on the same tile.

Preparation of the quarries of shaped tiles was a more time-consuming process. Shaped tiles of the Plain Mosaic Group were cut out individually by hand, with the planes of the knife clearly visible on the convex sides of the tiles. In the case of some simpler shapes of lesser quality, such as the small diamond shapes of the Inferior Plain Mosaic Group, a large piece of clay was rolled out and cut part way through with diagonal lines. After firing, the tiles could be split up individually. In this case, large numbers of one shape were being made together, rather than the tiles being made with others of their eventual mosaic arrangement.

Medieval tilers applied decoration to floor tiles in a variety of ways and most of the specialist terminology used today refers to these methods. The terms can be confusing as, in some cases, they describe the look of the decoration, while in others they describe the technique. However, as they are well established and no satisfactory alternative has been found, they are used here. For non-specialists, only three main points need be understood:

1. By far the most common method of decoration was to carve a design in relief on the face of a wooden block and to stamp this down on to the tile quarry, leaving an impression of the design in the clay. If the design was asymmetrical, it would appear back to front on the quarry. The wooden block is called a **design stamp**. One stamp would obviously have been used to decorate many tiles. Individual design stamps can be identified either through cracks as the wooden blocks split, or through details in the carving of the design. As noted above, the use of the same design stamp on tiles at different sites provides strong evidence for the distribution of products of a single workshop.
2. A quarry stamped with a design could simply be glazed and fired to produce a dark (brown, black or green) shiny surface, or it could be coated with a white clay before being glazed and fired to produce a light (yellow) shiny surface. These tiles can be described as **one-colour** tiles (i.e. they are same colour over the whole upper surface) or as tiles with **counter relief** decoration (i.e. the design is pressed into the quarry surface). Where the design is linear (i.e. carved on the stamp as a thin line), the tiles are said to be **line impressed**.
3. Tiles are described as **two-colour** where a white clay was used to fill the impression left by the stamp

but not to cover the rest of the upper surface of the quarry. When coated with glaze, the tiles fired yellow over the white clay and brown or black over the red clay, giving a light coloured pattern on a dark coloured background. This is by far the most common type of decoration found on medieval floor tiles in England.

There are several variations on the theme of two-colour decoration. Variation is found in the level of plasticity of the white clay applied to the quarry. Where white clay is applied in a plastic state, the tiles are said to be **inlaid**. Where the white clay is applied in solution, it is called **slip** and the tiles are sometimes said to be **stamped and slipped** or **slip decorated**. In practice it is not always possible to distinguish between these techniques and, in this study, the depth of the white clay was recorded as a possible indicator of the technique used. Differences in the preparation and quality of the white clay were also recorded.

Other features of some tile groups identified in the north of England were a consequence of the desire of the tilers to produce the same design but in reversed colours on different tile, so sometimes the design would be in a light colour on a dark background (as in the process described above) and sometimes it would be in a dark colour on a light background. One group of tilers achieved this effect by using **reverse inlay**, in which layers of red and white clay were applied in various permutations (see Fig 10.19 and Chapter 10), while another used two sets of design stamps, one with the design carved in relief, the other with the background carved in relief (described as **reversed colours** or as **negative/positive** versions of a design; see Decorated Mosaic, Chapter 14).

Another method of producing a dark design on a light background was to coat the whole of the upper surface of the tile with white clay and then to scrape off the white clay by hand to form the design. This technique, known as **sgraffiato**, would have been extremely time consuming and it was generally used to make inscribed or commemorative tiles, which were not going to be replicated.

It is usually thought that the tile quarries were formed before any decoration was applied but it is clear that this was not so in some instances. Some tiles of the Plain Mosaic Group have marking-out lines on the white clay coating, showing that the white clay was applied before the tiles were cut out (see Fig 10.20). Although rarely found in the study area, Paul Drury has identified cases where the quarries of two-colour tiles were coated with slip **before** being stamped with the design (Drury 1979; leading to terms such as stamp-over-slip and slip-over-stamp methods). Among the Usefleet Group tiles, there are examples with lines scratched onto the clay before the quarries were cut out but after the white clay was applied. In the Inferior Plain Mosaic Groups there are a few instances where pieces of clay had several designs

stamped on them. It is uncertain whether these were later split up.

Keys were sometimes cut into the bases of the tiles. They were probably more important as an aid to drying and firing than as a means of improving the grip of the tiles in a mortar bed. In the north of England, they usually consist of a single scoop of clay removed with the point of a knife. There is a sandy coating on the flat bases of these tiles but no sand in the keys, indicating that the keys were cut at a fairly late stage in the manufacturing process.

The glaze used on medieval floor tiles was made of quartz glass with metal additives, usually lead oxide. A lead-based glaze has a low melting point and, when fired, gives the yellow and brown finish frequently found on medieval tiles. Higher quantities of lead or iron could be incorporated to give a darker colour and other metals or alloys, such as copper or bronze, were used to give a green glaze. While some workshops used the same glaze on all the tiles, others used glazes with different constituents to coat the light and dark coloured tiles. In these cases, the two-colour tiles appear to have been coated with the same glaze as used on the plain yellow tiles. Variations in the glaze on some tiles might suggest that a mix of scrap metals was used. Glaze can be applied in either powder or liquid form. There is little evidence to suggest which method was used at any given time but the patchiness of the glaze on some late medieval examples might indicate the use of a powder (for example among tiles of the Transpennine and Huby/Percy Groups).

After preparation, the tiles would be left to dry and then fired in a kiln. In some working traditions, the quarries were fired once at a low temperature, the slip and glaze were then added and the finished tiles were re-fired (see for example Chapter 20). This **double-firing** (or **biscuit firing**) method is thought to have produced a tile with a high gloss but with a tendency for the glaze to flake off from the quarry, rather than wearing down (Korf 1963, 12–13; Eames 1980, 1, 19). It is a possible indicator of tiles made in the Netherlands. Tiles made in England are usually thought to have been fired only once. Square tiles seem always to have been stacked on their sides in the kiln while shaped tiles may have been placed on special racks (see Plain Mosaic Group, Chapter 10). A temperature of about 950°C would have been needed to fuse the glaze.

Several characteristics of the tiles were influenced by conditions in the kiln. In particular, they could be either **oxidised** (when clay containing iron will turn red) or **reduced** (when clay containing iron will turn grey) or be partly oxidised and partly reduced (often with oxidised edges and a reduced core). Over-firing results in distortion and vitrification, with the fabric effectively melting. Over-fired tiles often turn purple or black with a metallic sheen. The quality of all aspects of the finished tiles is a useful indicator of tile group.

The main recording categories

Sites

Information about the provenance of the tiles is contained in the individual site entries in Chapter 27 (the Site Gazetteer) and is not replicated in the tile group descriptions. However, where a large number of sites is involved, the evidence for provenance is graded according to whether medieval use at the site is thought certain, likely, possible or whether post-medieval re-use is suspected.

Sample

The sample size for each site refers to the numbers of extant tiles in loose collections used in the analysis. Precise counts of extant tiles can be given in the case of decorated tiles, as these were recorded individually. The large numbers of, often worn, mosaic and plain tiles were recorded in batches and only approximate numbers can be given. Re-set tiles – either on site or in a display – were not included in the sample counts as they provide no information for several recording categories (treatment of the tile sides, bases, fabric, firing and depth).

Condition

The condition of the sample is evaluated by looking at the number and size of fragments and the level of wear of the tiles. Wear is graded from 1 to 4, where 1 is a pristine tile and 4 is a completely worn one. Completely worn tiles are often wrongly assumed to have been plain. Fragments are tiles with no complete upper surface dimensions. Their surface size is recorded using a template, graded A, B, C etc., where A is smallest. So, for example, 96% of the Inlaid Group had at least one complete upper surface dimension. This means that the assemblage is predominantly made up of complete or near complete tiles. In addition, all the fragments (10) were graded B or C, which means that they are equivalent to between a quarter and half tile in size. The wear grades are also reasonable, with 52% of tiles graded wear 1 or 2 (i.e. unworn or only slightly worn), and 19% wear grade 4 (very worn). Given a reasonable sample size, the information from these tiles should accurately characterise the group. It is noted where condition appears to vary on a site by site basis. Factors influencing the condition of assemblages from individual sites are noted in Chapter 27.

Shape

The shapes of square tiles, or of tiles scored and split from squares, were recorded as ‘square’, ‘triangle’ or ‘rectangle’. The shapes of mosaic pieces were recorded following the shape number series devised and published by Elizabeth Eames (1980, 2, S.1–S.328). Only

drawings of the additions to the British Museum series are published here. Clearly the same shape might be produced by different tile workshops, particularly where simpler shapes are concerned. Shape 23 of Group 1 (or Group 1, S.23) would therefore be the same shape, but differ in other respects to tiles of Group 18, S.23. The tile shapes were recorded by drawing around the tile with the upper surface face down. Slight differences in the size of tiles can be the result of variations in shrinkage during drying and firing. Experimental work suggests that a quarry will shrink in the region of 6% in firing (Keen 1969, 149–50; Eames 1980, 1, 44). Tiles assigned the same shape number are within 5mm of the shape drawings (and usually less than this). Shape numbers preceded by a ‘?’ are uncertain identifications of broken tiles.

Mosaic arrangements

Mosaic arrangements are only included where their medieval existence is supported by some independent evidence other than the interlocking shapes of the tiles themselves. Where this is the case, the arrangements were recorded following, or adding to, the mosaic arrangement number series devised and published by Elizabeth Eames (1980, 2, I–LXXIX). For ease of reference, however, the Roman numerals used by Eames have been converted to Arabic numbers and prefixed with an ‘M’. Also following Eames, the term ‘**roundel**’ was used to refer to the circular arrangements of shaped tiles, set in a square frame, that are a feature of some of the mosaic tile groups of northern England.

One group of mosaic tiles (Group 11; Chapter 16) was published in 1982 by Penney *et al.* As some of these tiles are no longer extant, the tile shapes published in 1982 have been reprinted here and numbered P.1–33.

Size

Only complete dimensions were recorded. On square tiles, two upper surface dimensions and the depth of the tiles were measured. On shaped tiles and fragments, only depth was measured. Tiles of wear grade 4 (see *Condition*, above) may not have a complete depth measurement. All dimensions are given in mm. Where antiquarians have given imperial measures these are quoted with conversion to mm given in brackets.

Designs

Each design is allocated with a number as a sub-set of the group. Where designs of the Decorated Mosaic Group were made in two colour ways (i.e. the colours were reversed by cutting two sets of identical or similar stamps), not all the reversed variations are illustrated or given separate design numbers. They are indicated instead by an ‘R’ before the design number of the version that has been illustrated. Designs listed under a

tile group but in brackets preceded by ‘?’ are known to be from the site but are uncertainly attributed to the tile group. Uncertainly provenanced designs are listed as ‘probably’ or ‘possibly’ from the site.

Numbered design sequences already existed for the Nottinghamshire Group, defined and published by Norma Whitcomb (1956, nos 23–147; reproduced here as Fig 18.2) and the Sussex/Dieppe Group, defined and published by Christopher Norton (1993a, nos 1–68). The established number series have been retained for these two groups, as described in Chapter 1, p.8. Where clearer examples of the designs were found in the north, they have been redrawn. Drawings of the Sussex/Dieppe designs found in northern England have been reproduced from Norton 1993a. These drawings, like the Whitcomb examples, illustrate the group as a whole and were not made from the tiles found in the study area. The conventions used for the design drawings are discussed further below.

Where several different square-tile designs fit together to form a larger pattern, there is a number for the whole set or arrangement. There are only 13 such design arrangements among tiles from sites in the north of England and the numbers are mainly used to identify tile fragments which could belong to any design in the arrangement (the same motifs are often repeated in the outer corners of these designs and, therefore, fragments are not always attributable to a single design although the arrangement is known).

Decoration

The decorative technique is noted as well as the depth of any white clay and the colour(s) of the glaze.

Design stamps

The condition of the stamp, for example whether it was cracked or not, is noted. Individually identifiable stamps were traced and identified with a number.

Nail holes

The presence or absence of nail holes, their number, location, size and shape are noted. They are usually small, only *c.*2mm across, and difficult to see. Nail holes are rarely visible on yellow tiles because the slip tends to fill up the holes. On dark tiles, the glaze has often run down into the nail hole – a feature which helps distinguish it from a void in the fabric or abrasion. The holes also often have a quite definite shape, either round, square, jagged or rectangular in outline. However, nail holes are difficult to distinguish on badly abraded tiles.

Firing

The extent of oxidation or reduction of the tiles is noted. The core is only visible on broken tiles.

Table 9.2: Fabric codes and description

<i>Code</i>	<i>Description</i>
1	Red or grey. Slightly laminated. 20% quartz of less than 1mm diam. 5% voids.
2	Pink/beige or grey. Jagged fracture. Smooth sharp edges. Quartz fine (less than 0.5mm diam) and of unknown frequency. 5% grog, pieces of variable size 0.5–5.0mm.
3	Orange. Well mixed, homogeneous. 20% quartz of less than 1mm diam. Sometimes with 5% voids and grog.
4	Pink/beige, red, black or grey. Quartz fine (less than 0.5mm diam). Lots of other inclusions: <ul style="list-style-type: none"> – hard, angular, red or grey, 3–6mm diam – white clay, lumps – roundish silver/grey, c.2mm diam
5	Orange. Slightly laminated. Quartz fine (less than 0.5mm dia). 5% hard white inclusions, 1–2mm diam. 5% hard red inclusions, 1–2mm diam. Few voids.
6	Colour variable. Well mixed. Quartz fine with few (less than 5%) large metallic-looking inclusions.
7	As (1) with 1–2mm diam hard black inclusions.
8	Laminated, quartz variable size, up to 2mm diam and more than 20% frequency. No other inclusions.
9	Pink/grey when not overfired. Quartz c.1mm diam and 20% frequency, black and white. Occasional large 3–4mm diam white lumps.
10	As (1) with distinctive angular white inclusions, c.10% frequency and 1–4mm diam.
11	Dark red, purple, black. Well prepared, close, even texture. Quartz fine with no other obvious inclusions.

Fabric

A record was made of the colour, structure and constituents of the clay fabric of the tiles (visible by eye or $\times 10$ magnification). This information is only available from broken tiles. The main fabric types were allocated codes as described in Table 9.2

Scientific fabric analysis (ICP-AES) was carried out by the British Museum using a small sample (c.12 tiles) from each site with Plain Mosaic, Inlaid or Usefleet Group tiles, and from known kiln sites. The results for the whole analysis are given in Appendix 1 and are discussed in the text in relation to the relevant tile groups.

Treatment of tile sides

The degree of bevel of the tile sides is noted as well as any other treatment of the sides, including the trimming of mosaic shapes and marking of some shapes to aid their identification for setting out in a floor. Variations in the way tiles were scored for splitting are also noted.

Treatment of bases

The presence or absence of keys (including shape and size), sand and mortar are noted.

Quality

The technical quality of the tile as manufactured is assessed (i.e. the condition of the decoration and fabric other than the damage, wear and abrasion suffered since firing). There tends to be little evidence from worn tiles and fragments.

Drawing conventions

Counter relief or line impressed designs have been illustrated as line drawings. The lines have been faded out in areas where the tiles were worn. For two-colour designs, the dark part of the design is shown black and the light part white. Worn or unclear areas are stippled – they could be either light or dark. Drawings of designs known only from antiquarian records have been done in tone. There are no extant examples of these designs and the antiquarian drawings may have been made up from fragments or stylised after the conventions of the time. The outlines of all the designs have been squared up.

The mosaic shape drawings show an outline of the upper surface of the tile. The outlines have been smoothed. The shape drawings are at a scale of 1:3, as are the design drawings.

10 The Plain Mosaic tile group (c.1220–1270)

Tile Group 1 (Figs 2.1–2.6, 10.1–10.21, 27.4–27.8, 27.13–27.17, 27.21, 27.24–27.26, 27.33, 27.35–27.36, 27.47–27.52)

The Plain Mosaic Group is the earliest group of floor tiles in the study. It includes large numbers of shaped or small square tiles that were not patterned, relying for their decorative effect on the juxtaposition of light and dark tiles of different shapes. Other characteristic features of the group are the keys cut into the bases of the tiles, the largely reduced fabrics, the depth of the tiles and the depth of the white clay. A small number of tiles were decorated using various techniques, including reverse inlay. These survive in insufficient numbers to demonstrate from the design stamps that there were close links in the manufacture of tiles at different sites. However, some other unusual characteristics, particularly the treatment of the sides of the tiles, provide strong evidence for links in the manufacture of the tiles at several widely dispersed sites. Plain Mosaic is illustrated elsewhere in this volume in Figures 2.1–2.6, and in Chapter 27.

Sites, sample and condition: Tables 10.1–10.3 set out the numbers of tiles from each site that either certainly or possibly had Plain Mosaic in the medieval period (these sites are shown in Fig 2.1, Chapter 2). Table 10.4 lists sites where the occurrence of Plain Mosaic is known, or thought likely, to result from post-medieval re-use of the material. For all details regarding provenance, see Chapter 27, Site Gazetteer (note that the entry for Newbattle, outside the study area, is at the end).

The unusually good sample sizes for Plain Mosaic, particularly from Byland, Fountains, Meaux and Rievaulx, allowed comparisons between sites to be made with some confidence. However, several characteristics of the larger assemblages varied according to the history of the finds. The British Museum holds large numbers of Plain Mosaic tiles from Byland and Rievaulx, including many of the highest quality, while tiles from these sites in the English Heritage loose collection tend to be worn. The assemblages from Meaux in the British Museum and English Heritage collections include many types not represented anywhere else. The full range of types is not duplicated in the two collections but the Meaux tiles held by English Heritage are less worn than those in the British Museum. A problem with the Meaux tiles is that a high proportion of examples in both collections are set in panels of mosaic arrangements. While this preserves the suggested layouts, which are often complicated, it also means that the sides and bases of tiles are not visible.

The samples of extant tiles from Sawley, Thornton and Newminster Abbeys and York Minster are comparatively small and comparisons involving these sites are, therefore, less reliable. A majority of the tiles from

Table 10.1: Sites known to have had Plain Mosaic tiles in the medieval period

<i>Sites</i>	<i>Approx no. of tiles</i>	<i>No. of shapes</i>
Byland Abbey	>15,000	99
Fountains Abbey	>5,000	66
Gisborough Priory	1,500	32
Meaux Abbey	4,000	238
North Grange kiln, Meaux Abbey	16	2
Newbattle Abbey	250	46*
Rievaulx Abbey	>10,000	134
Sawley Abbey	500	19
Thornton Abbey	50	18

* Newbattle: over 60 different mosaic shapes were identified by Richardson (1929)

Table 10.2: Sites thought likely to have used Plain Mosaic in the medieval period

<i>Probable sites</i>	<i>Approx no. of tiles</i>	<i>No. of shapes</i>
Ellerton Priory	–	–
Helmsley Castle	448	27
Newminster Abbey	17	10
Wether Cote kiln, Rievaulx Abbey	4	2
York Minster	12	7

Table 10.3: Sites that may have used Plain Mosaic in the medieval period

<i>Possible sites</i>	<i>Approx no. of tiles</i>	<i>No. of shapes</i>
Brinkburn Priory	6	1
Easby Abbey	3	1
Keldholme Priory	–	–
Laskill Farm	–	1
Louth Park	–	–
Selby	1	1

Table 10.4: Sites where post-medieval re-use of Plain Mosaic is known or thought likely

<i>Sites</i>	<i>Approx no. of tiles</i>	<i>No. of shapes</i>
Coxwold, Manor Farm	1000	1
Markenfield Hall	25	2
Newburgh Priory	2500	2
Old Byland Church	1000	14
Helmsley, Canon's Garth	1000	Not counted
Rievaulx Terrace	1000	Not counted



M.3



M.4



M.6



M.7



M.8



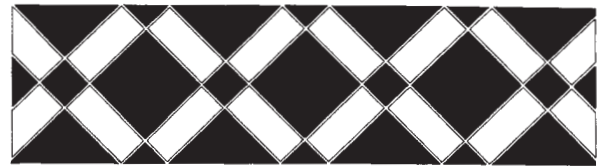
M.15



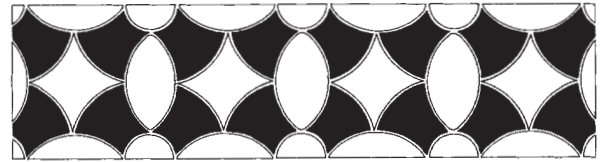
M.19



M.61



M.24



M.50



M.37



M.84



M.86



M.87



M.88

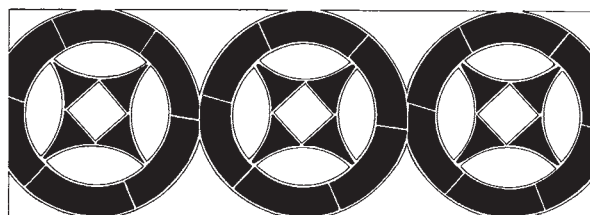


M.92

Fig 10.1: (above and facing) Plain Mosaic Group, mosaic arrangements used as borders or set in the vertical face of steps as risers. Scale 1:10



M.93



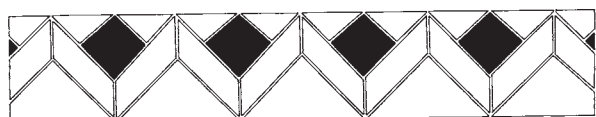
M.94



M.96



M.97



M.99



M.100

Sawley and Thornton are worn with little white clay or glaze remaining. The sample size from Gisborough Priory is larger but the least worn examples have been re-set for display in the parish church. Sites without extant collections (Ellerton and Louth) are excluded from the following analysis. Also little further can be said about sites where the whole assemblage is re-set, as at Brinkburn, Manor Farm, Markenfield Hall, Newburgh Priory and Old Byland, or where the assemblage is very small, as at Wether Cote, Easby or Selby.

Mosaic arrangements

For convenience, the arrangements are divided into four types: borders and risers (Figs 10.1 and, probably, 10.4), continuous repeating panels (Figs 10.2 and, probably,

10.5), repeating small squares (Fig 10.3) and roundels (Figs 10.6–10.12 and possibly 10.13). The numbers follow those of Elizabeth Eames (1980) in the British Museum (BM) catalogue, with minor variations noted.

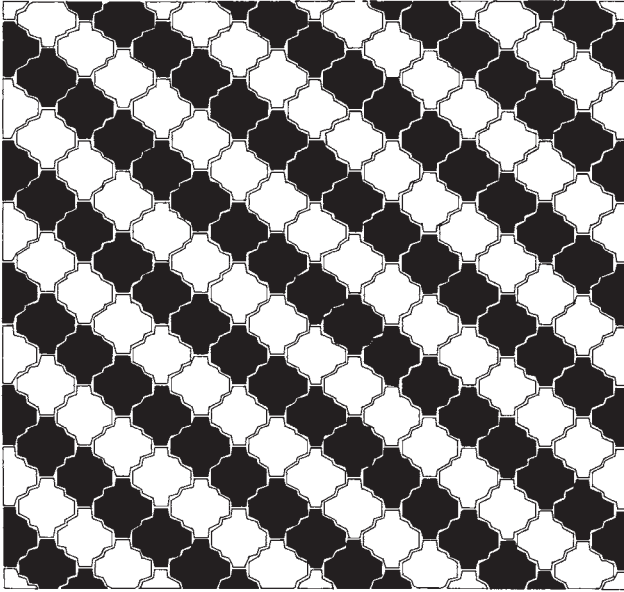
The majority of Plain Mosaic tiles were found loose and not in their medieval settings and their arrangements have often been invented from the shapes of the loose tiles and from comparisons with other sites. Although speculative, some of these arrangements will be correct, particularly those proposed for some of the more intricate borders and continuous repeating patterns. However, discussion here concentrates on those arrangements whose medieval existence is thought to be reliable (the nature of this evidence is set out further in Chapter 26).

On this basis, Plain Mosaic border and riser arrangements are evidenced from Byland, Fountains, Meaux, Newbattle, Rievaulx and Sawley; continuous repeating panels are known from Byland, Fountains, Meaux, Newbattle, Rievaulx and Sawley; arrangements of repeating small squares are known from Byland, Fountains, Meaux and Rievaulx, and roundels from Byland, Meaux, Newbattle, Rievaulx and Sawley. Tables 10.10–10.13 (pp.126–28) give the mosaic numbers and types of evidence for the arrangements at each site.

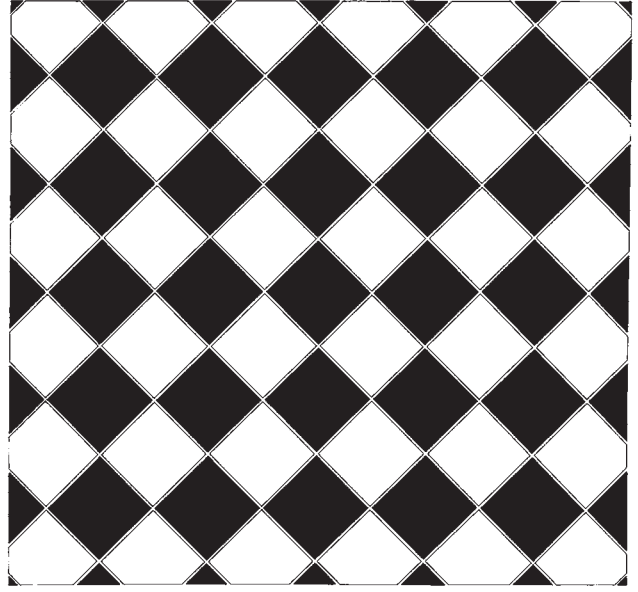
Arrangements other than roundels

As Tables 10.10–10.13 show, information about medieval mosaic arrangements is heavily dependent on the evidence of re-set tiles, mainly from Byland and Rievaulx. In general, these are thought to be a reliable indicator of medieval use (see Chapter 26). However, the layout of tiles in the nave chapels at Rievaulx may not reflect their original use. The chapels were subject to extensive alterations during the medieval period and the tiles here, like those re-used in buildings other than the church, must have been re-set a number of times.

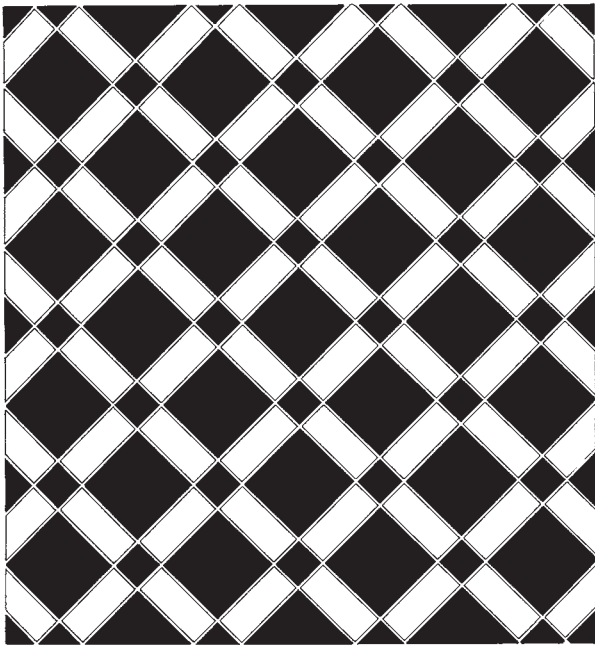
The evidence for mosaic arrangements from Fountains is also limited owing to the many excavations and reorganisations of the ruined site. The tiled platform in the presbytery was built to show off tiles found in the early excavations and was probably put together in the later 18th century from pieces of tiling found in several separate locations (shown in Figs 27.8 and 27.13–16; see Chapter 27 for details). The arrangements in the platform may therefore be accurate representations of medieval flooring and they are included in Tables 10.10–10.13. Some changes were made to the platform in the 19th century. Comparison of the modern platform (Fig 27.8) with Fowler's record of 1800 (Fig 27.13) suggests that the chequered designs M.101 and M.102 were removed and the central area of mosaic M.60 was added. The arrangement M.102 (not illustrated other than in Fowler's drawing) is as M.101 but with the 75mm tiles laid on the diagonal (M.101 is drawn in Fig 10.3). Fowler's engraving is therefore the only evidence for the occurrence of these arrangements at Fountains. The M.60 paving (drawn in Fig 10.2) is a large area of much more complex mosaic and is unlikely to be an invention.



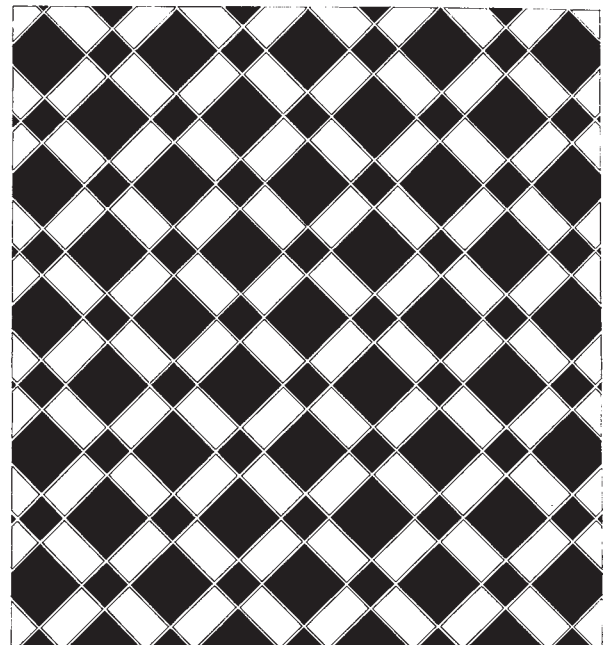
M.11



M.23

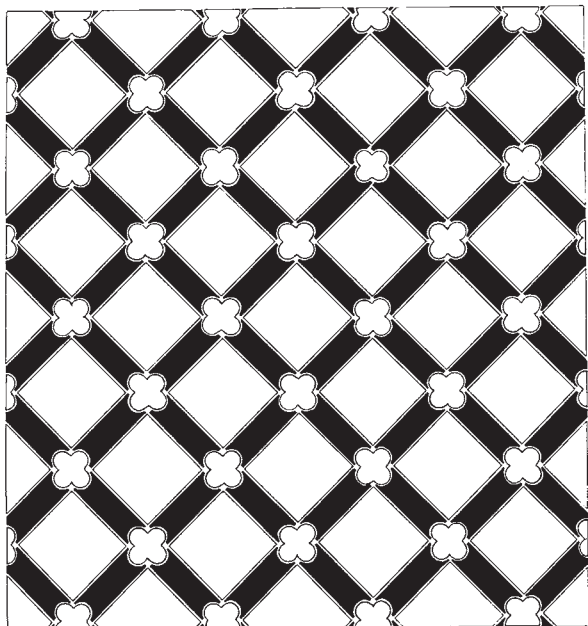


M.24

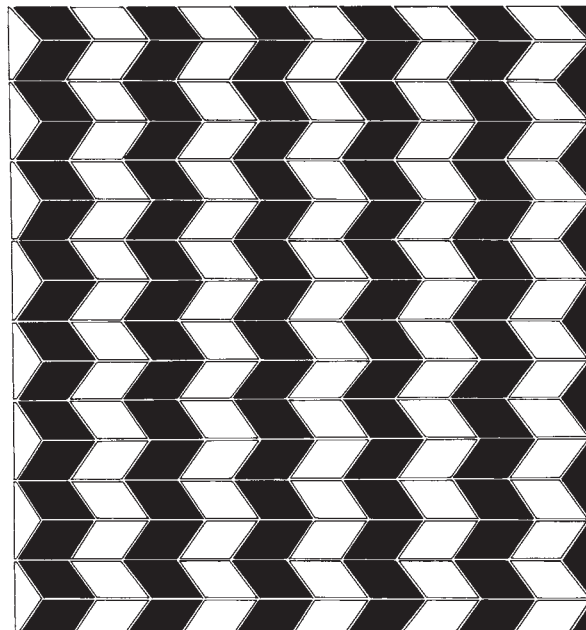


M.25

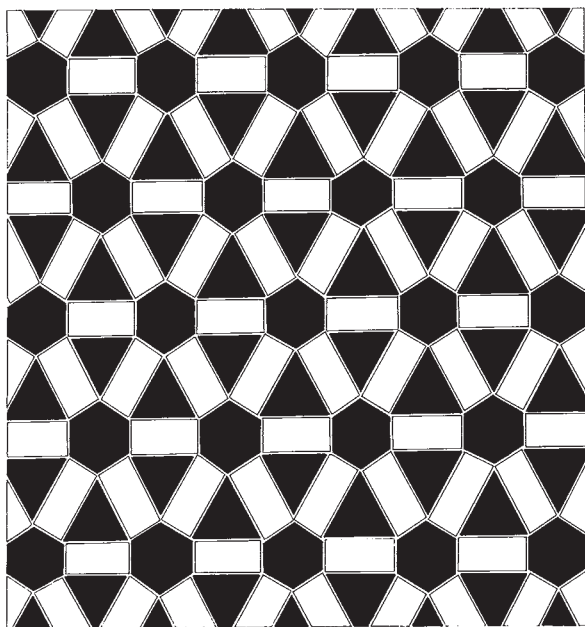
Fig 10.2: (pp.94–97) Plain Mosaic Group, continuous repeating mosaics. Scale 1:10



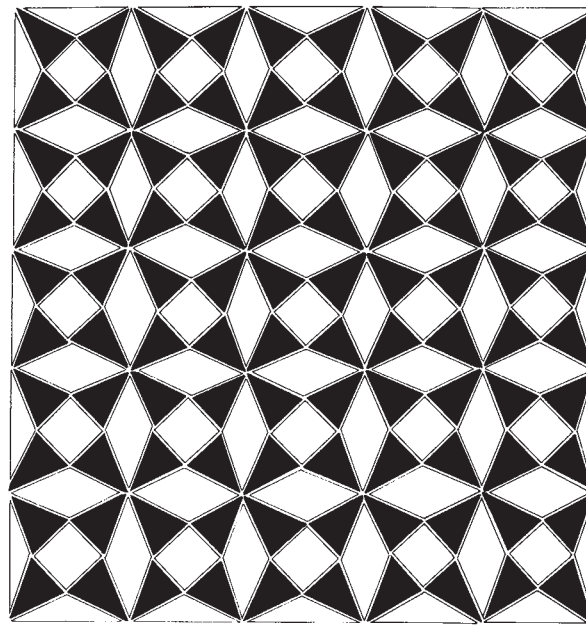
M.28



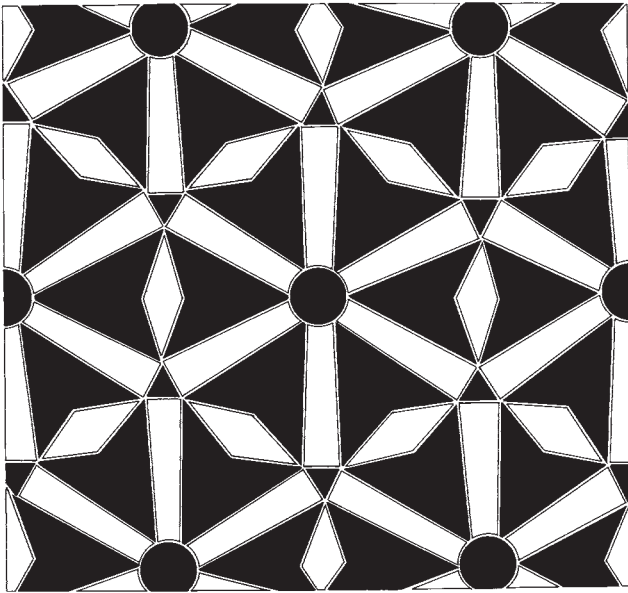
M.35



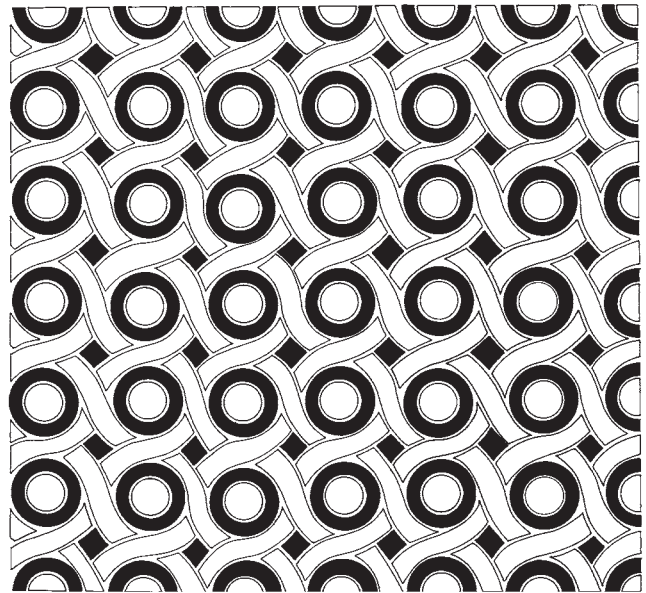
M.36



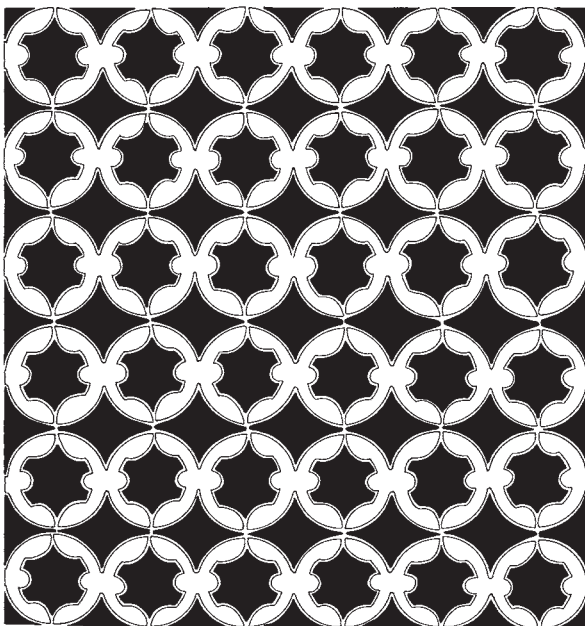
M.37



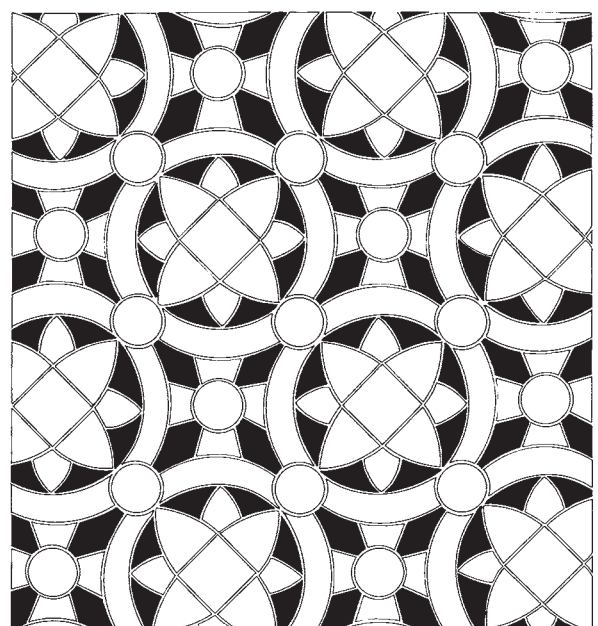
M.38



M.46

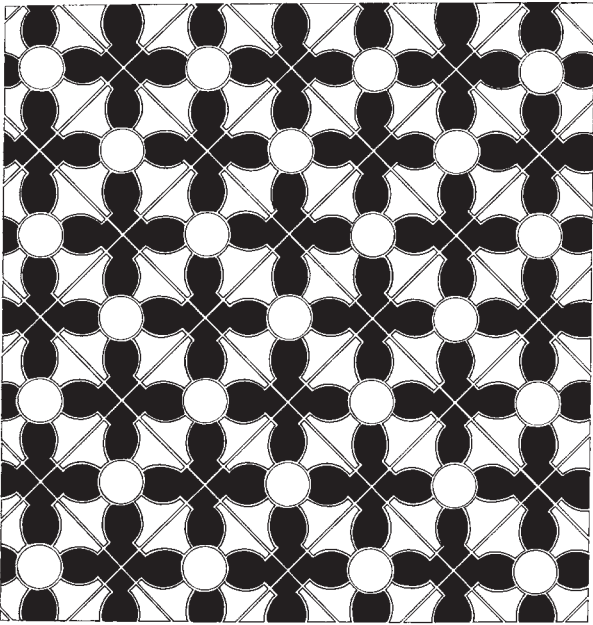


M.47

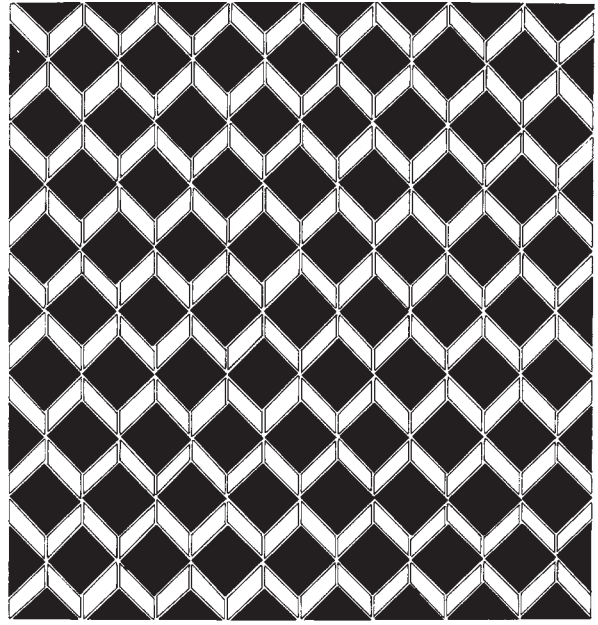


M.60

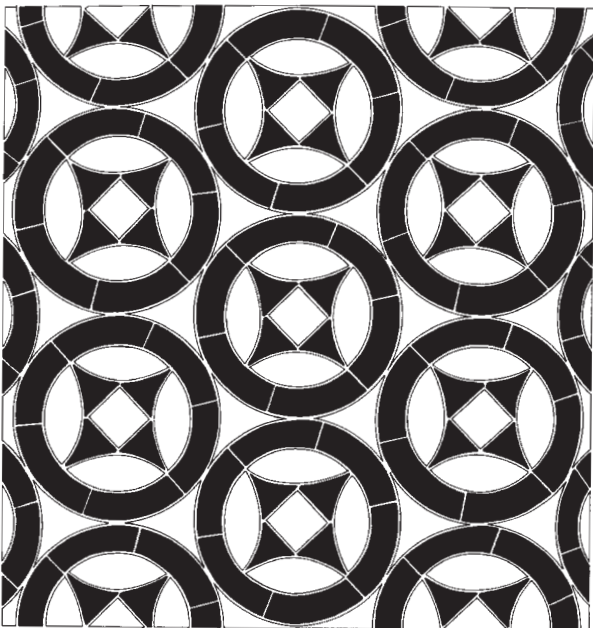
Fig 10.2 (cont'd): Plain Mosaic Group, continuous repeating mosaics. Scale 1:10



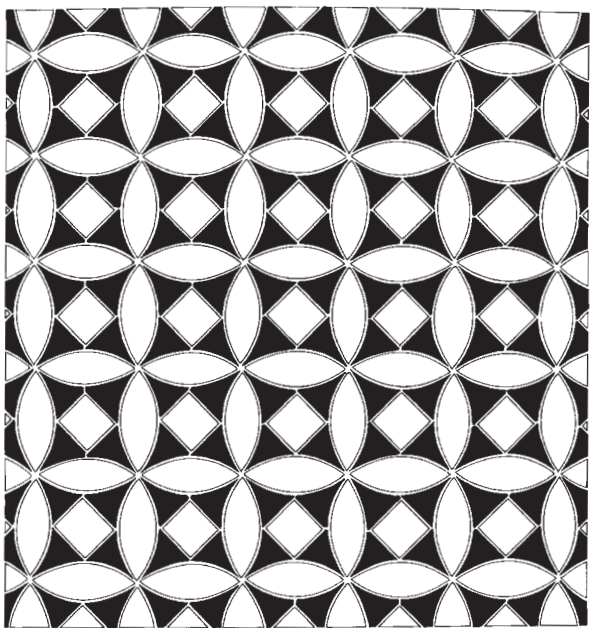
M.88



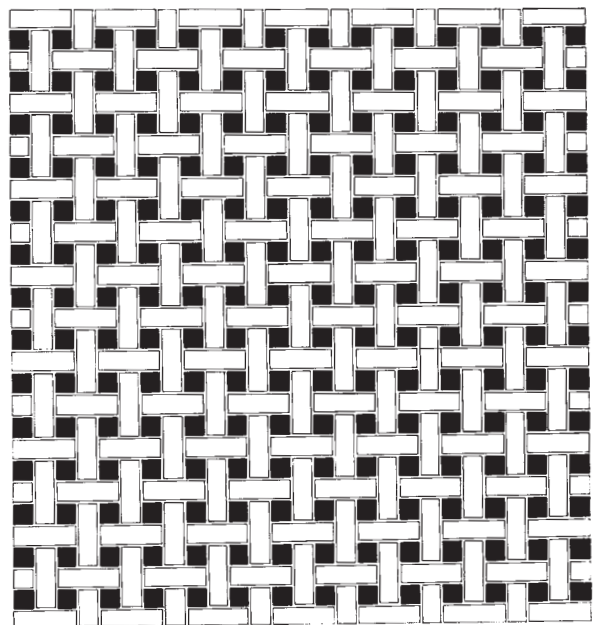
M.91



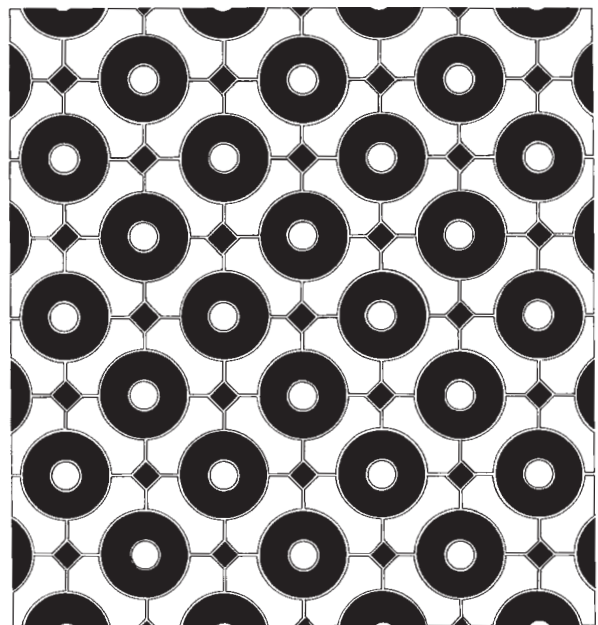
M.95



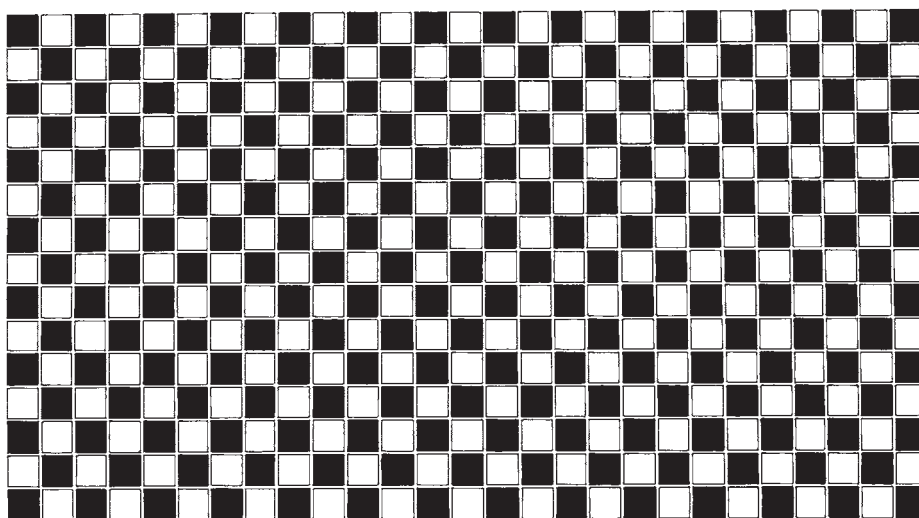
M.98



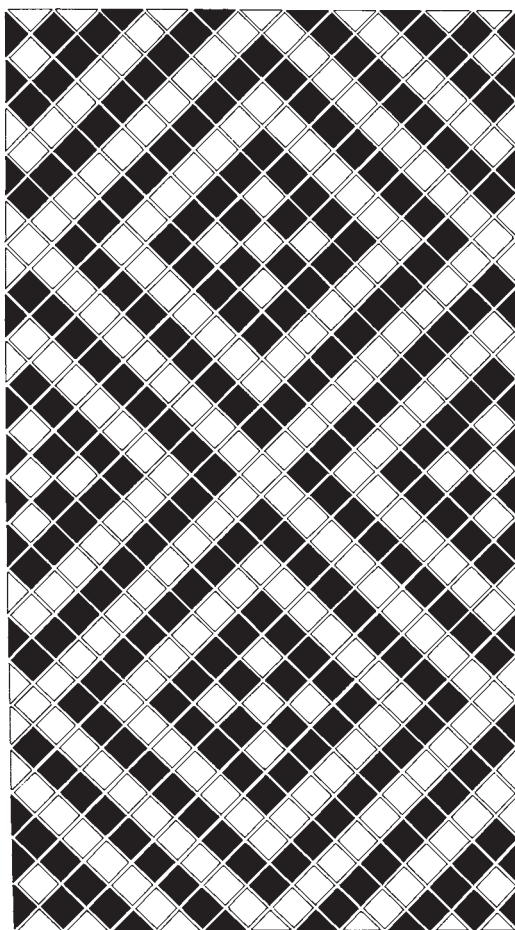
M.114



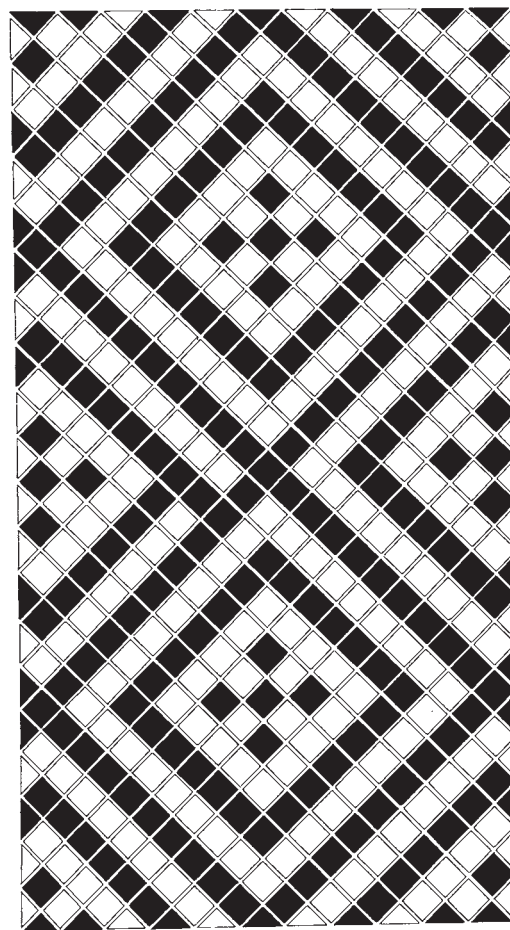
M.115



M.101

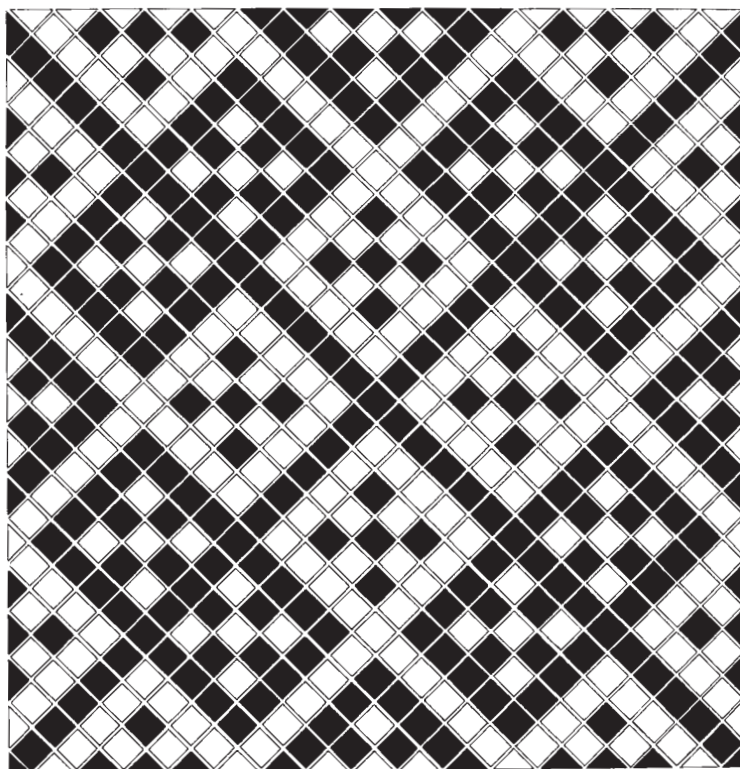


M.103

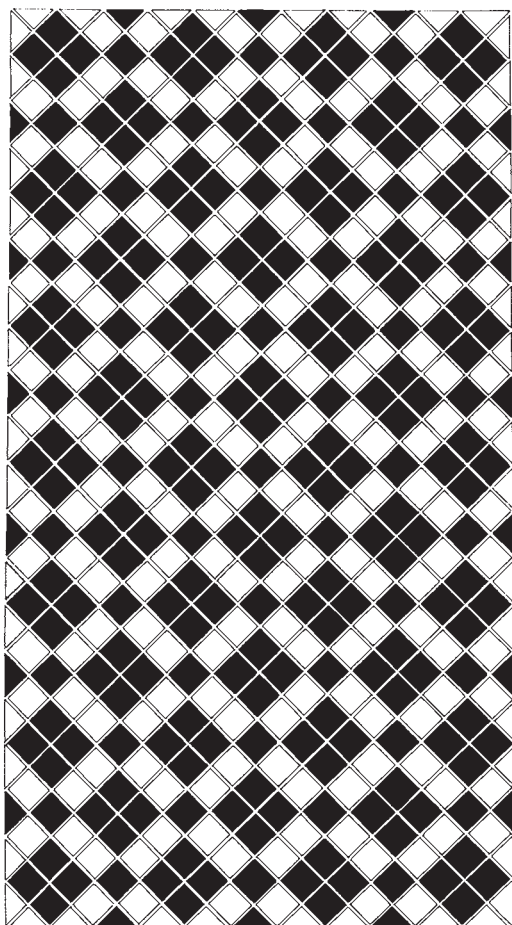


M.104

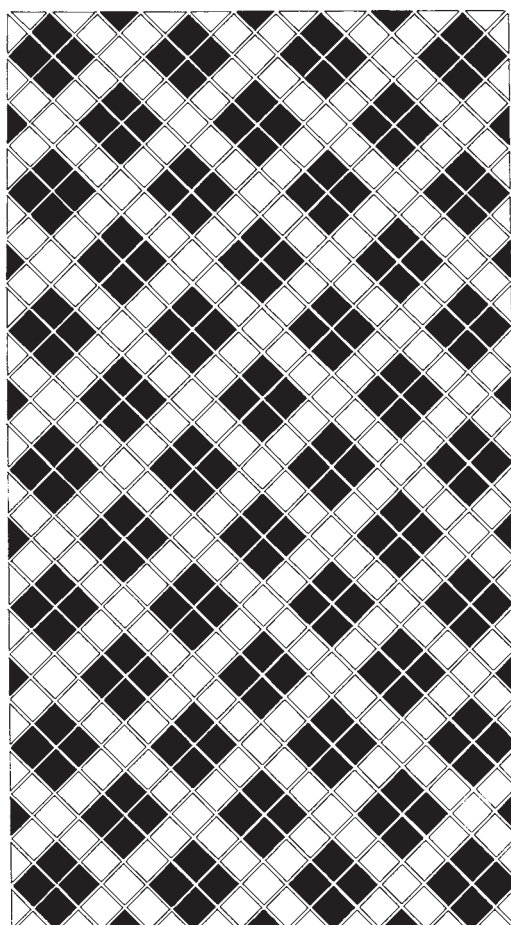
Fig 10.3: (pp.98–101) Plain Mosaic Group, repeating small squares. Scale 1:20



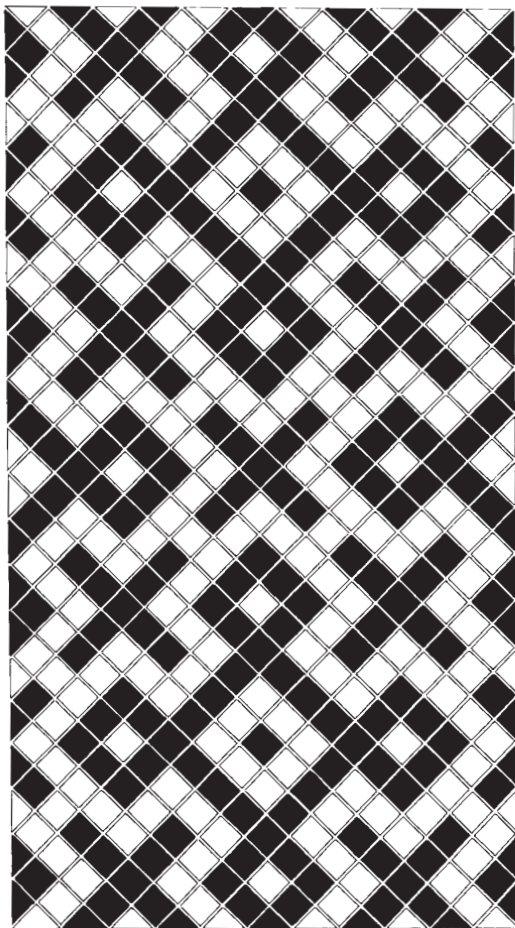
M.113



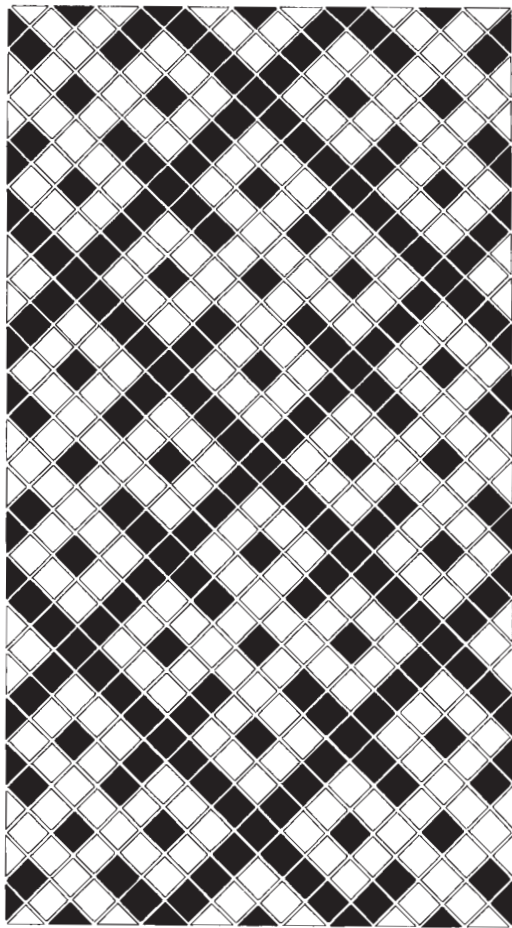
M.105



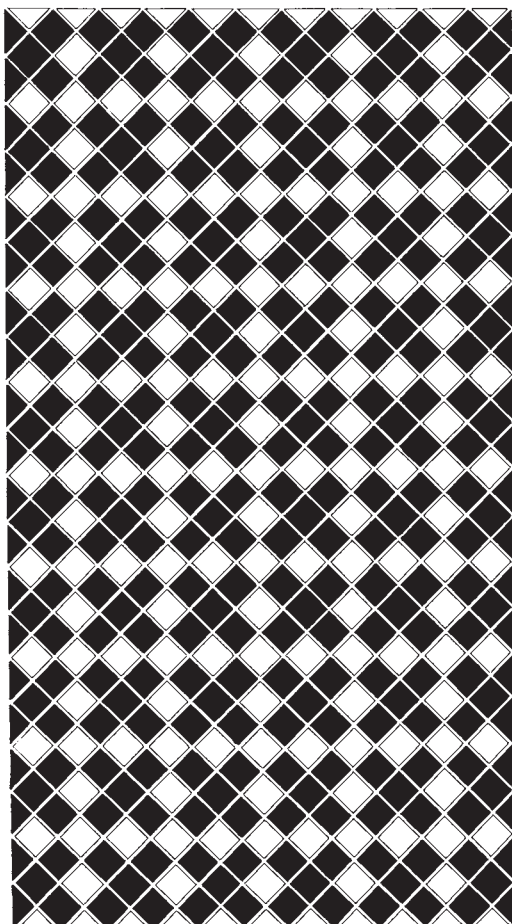
M.106



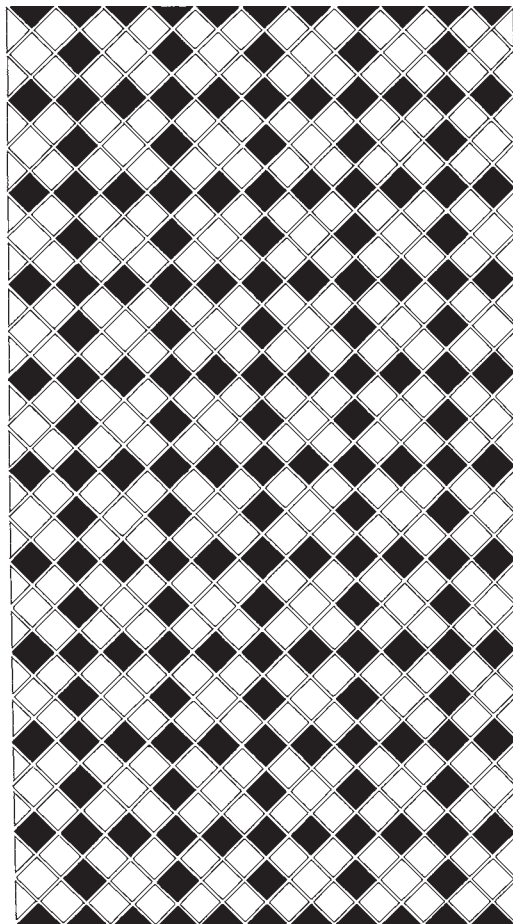
M.107



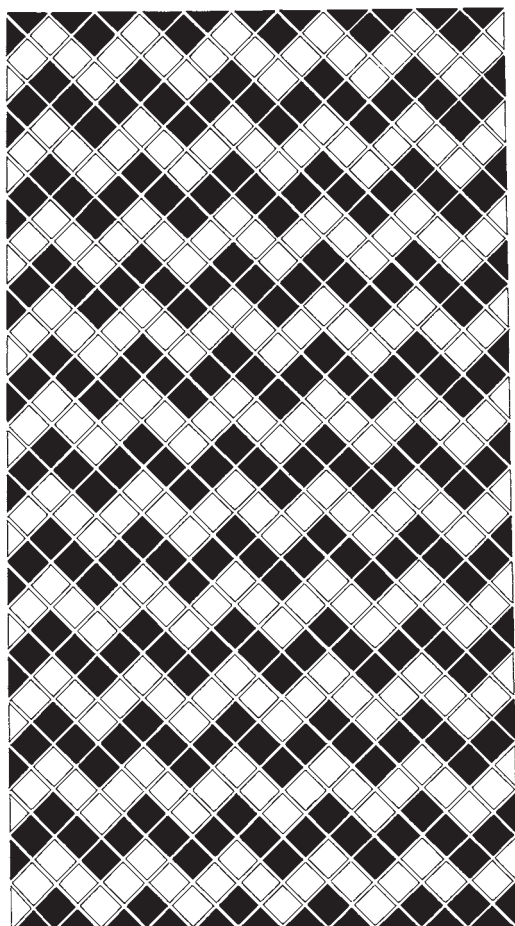
M.108



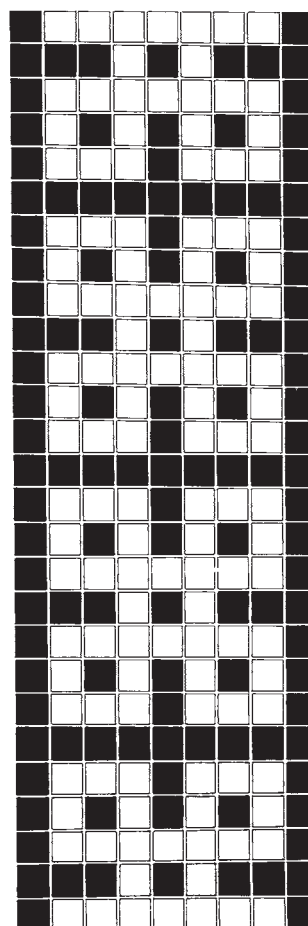
M.110



M.111



M.112



M.109

Fig 10.3 (cont'd, left and above): Plain Mosaic Group, repeating small squares. Scale 1:20

It may have been seen as a more interesting replacement to the simple chequered arrangements recorded by Fowler. Although they have been included in this record, it is possible that the divider lines of mosaic M.100 in the present platform are inventions (Fig 27.8 and drawn in Fig 10.1). Mosaic M.100 is unknown at other sites and could have been made out of tiles left over from Fowler's arrangements. The most controversial of Fowler's arrangements is the border made from small triangles in Figure 27.13 (M.116; not otherwise illustrated). At Byland, triangular tiles were only used to edge areas of square tiles or with other shaped tiles in complex arrangements. However, a similar arrangement of triangles are re-set in St Michael's chapel at Fountains (M.93, Fig 10.1) and something comparable was recorded at Meaux by G.K. Beulah.

The arrangements of tiles from Meaux listed in Tables 10.10–10.13 are those found in Beulah's excavations, but it is not always known whether they were of the best or inferior quality mosaic (see below, Group 2, for inferior mosaic; several mosaics such as the trellis arrangements, M.24 and M.25, and some of the roundels, were made in both qualities).

As shown in Tables 10.10 and 10.11, several mosaics were laid as both continuous repeating panels and as borders or risers, including the trellis mosaics (M.24, M.25), the circular arrangement in the spandrels of the

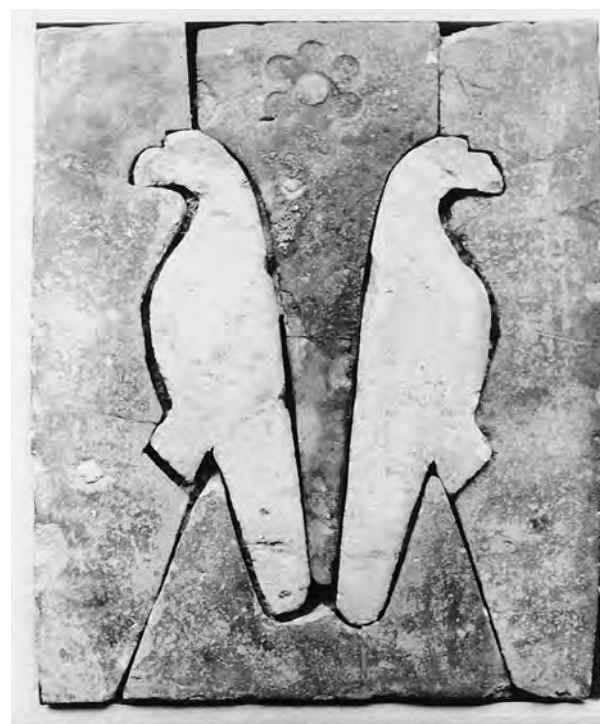


Fig 10.4: Plain Mosaic from Meaux Abbey church presbytery, found ex situ: mosaic M.90 (a rare example in this group of a figurative subject). The central tile is stamped with design 1.7e in counter relief



Fig 10.5: Plain Mosaic from Meaux Abbey: mosaic M.48 in two colour ways, reconstructed by G.K. Beaulah from loose tiles

M.65 roundels (M.94), also M.84, M.37 and M.15/M.47 (although the latter is only known in a block in the – possibly altered – presbytery platform at Fountains).

Some mosaics previously published as continuous repeat arrangements have only been found as borders, including M.61 and M.50. The latter exists in a doorway between the choir and the north presbytery aisle at Byland (Fig 26.1). Mosaic M.11, previously published as a border, is re-set as a continuous repeat in one of the nave chapels at Rievaulx.

Although not supported by any evidence beyond the shapes of the tiles, some other arrangements are likely to have been in medieval use because of the intricate way the tiles fit together, and they are therefore illustrated here. Examples include the ‘doves’ (M.90) and mosaic M.48 from Meaux (Figs 10.4 and 10.5).

Like the roundels (see below), some of these arrangements were certainly made in two colour ways (the trellis and mosaic M.48 at Meaux and the simple borders M.3/M.4 and M.7/M.8 at Byland and Rievaulx). However, most shapes are found in both light and dark colours. Large numbers of S.244 in both light and dark versions among the loose assemblage at Rievaulx suggest that mosaic M.46 was found in both colour ways there. The small square arrangements M.103 and M.104, M.110 and M.111 are found in both colour ways in the south transept at Byland (Fig 10.3; Table 10.13). Similarly, great efforts appear to have been made to produce the few two-colour designs in both light-on-dark and dark-on-light versions (see designs and decoration, below).

Roundels

There was only one large roundel arrangement (M.65) at most sites with Plain Mosaic tiling (Fig 10.6; Table 10.12). The slight variations in the layout of this arrangement showed that the roundels were not made using a single set of templates. More than one variation may have been in use at many of the sites. The evidence is as follows. The only surviving complete example of the M.65 roundel is re-set in the south transept at Byland (Figs 2.1, 2.4, 27.5). There are a further two incomplete examples at this site, re-set in the east chancel aisle (one shown in Fig 2.2). A half roundel from Byland on display in the British Museum was made up from loose tiles, possibly from the north transept of the church (Eames 1980, 1, 74–5, pl Ia). This has some modern repairs and plaster infill and may have been treated with a preservative. At Byland, the M.65 roundels are identical to each other in layout but occur in opposite colours (compare Figs 2.1 and 2.2). In all cases the tiles in the spandrels are not pierced to take the circular tile, but framed by two separate tiles, unlike some other sites (see further below). The rosette (design 1.7) on the small square tiles in the spandrels of the roundel in the south transept are not repeated in the chancel. To fit the colour scheme the rosettes in the chancel would have had to be reverse inlaid (see further under decoration, below).

At Rievaulx, parts of the two outer bands of an M.65 roundel survive in the south transept (Fig 10.7, M.65a). There are seven petal shapes in each of the circular arrangements in the outer band, as compared to six at Byland, Newbattle, Meaux and Sawley.

At Sawley, there are no roundels among the re-set tiles. However, illustrations of architectural fragments from Sawley, published by W. Richardson in *c.*1843, included two slight variations on M.65 (Fig 10.8; M.65b and M.65c). Richardson’s label to the illustration of M.65b suggested that two roundels were found in the chapels, one placed anglewise and one square (as known at Byland). Richardson’s second variation (M.65c) was just labelled as ‘Another example of encaustic tile pavement’. The location of roundels at Sawley in the middle chapels of both the transepts was recorded by Walbran, who compared that in the south transept to the arrangement found at Meaux in 1760 (Walbran 1852, 72–89). Richardson’s M.65b example is most similar to an arrangement found at Meaux, which had pierced tiles in the spandrels (Tickell 1796; see here Fig 27.22). Unlike Tickell’s drawing, but like the remains of a roundel re-set in the farmhouse at Meaux, the centre of Richardson’s version had a small circle surrounded by a ring shaped tile (see further on Meaux below). An illustration of the Sawley roundel published by Harland in 1853 supports the use of pierced tiles in the spandrels but not the central ring (Harland 1853, fig 9). W. Richardson’s second variation has more pierced tiles in the spandrels and also has pierced tiles between the lozenges of the second band from the centre. An example of a pierced tile from the spandrels as in this variation is extant from Sawley (S.434; Fig 10.14). The use of pierced tiles in some variations of the M.65 roundel seems certain.

At Newbattle, an extant pavement made of wood in imitation of Plain Mosaic paving includes two roundel arrangements. This remarkable floor was inspired by pieces of mosaic flooring and individual tiles uncovered in excavations between 1878 and 1895 (Figs 27.50 and 27.52). It appears that J.S. Richardson used the layouts in the wooden floor, as well as extant tiles, as the basis for the reconstructions in his published drawings. His Wheel Pattern No. 1 (Fig 27.47) is largely as the M.65 roundels at Byland but with tiles decorated with rosettes in band 2 and an outer band with a cog-effect (S.427; Fig 10.14). It seems likely that the outer band is incorrect because it does not give a square frame to the roundel and because similarly pierced tiles of this shape are shown in the spandrels of the M.65b and M.65c roundels from Sawley. Excavation in 1953 in the north transept at Newbattle discovered part of an M.65 roundel laid out exactly as at Byland, but the surviving tiles did not include any of the outer frame or spandrels (Figs 27.48, 27.49 and 27.51). The centrepiece had a single circular tile.

The roundel in the wooden floor at Newbattle in Figure 27.50 and Wheel 2 published by J.S. Richardson (Fig 27.47), has a variation to the central arrangement



Fig 10.6: Plain Mosaic Group, M.65 roundel. Scale 1:10

using tiles of S.73 and S.139. This, and similar variations, are discussed further below. Band 2 of the Newbattle roundel in Figure 27.50 is similar to that at Sawley (as noted above) while band 3 uses tiles of S.71 to make the 'petal' arrangements. The use of S.71 here is doubtful since there are no known examples of tiles shaped to accompany S.71 as shown in Richardson's Wheel 2. Some of the tiling from Ellerton drawn by Fowler in 1821 (see list of sources, No. 4) has a similar petalled arrangement (see Fig 27.7) but the title of Fowler's engraving 'Curious floors arranged from tiles dug out of the ruins of Ellerton Priory' makes it clear that these, too, were inventions from loose tiles.

The tiles used in the centrepiece of Richardson's Wheel 2 are shown in the British Museum catalogue in different arrangements (M.66, M.67, M.68 and M.69; Figs 10.9a-d). Although there is nothing to confirm the medieval use of any of these arrangements, there are several examples of the required shapes from Rievaulx (Fig 10.20). There is also one example of S.139 from Byland in the English Heritage store and two of S.73 (its partner tile) from Byland in the British Museum (BMC/6818-9). Variations to the centrepiece of the M.65 roundel on these lines probably existed, although the precise form they took remains uncertain.



Fig 10.7: Plain Mosaic in the north transept of Rievaulx Abbey church: the worn remains of a variation on the M.65 roundel, with seven 'petals' in the rosettes. Scale 1:10

At Gisborough the only evidence for Plain Mosaic arrangements are the tiles themselves (Knight and Keen 1977). The collection includes many shapes that could have been used in an M.65 roundel. A high proportion of these were decorated (Fig 10.18). Some of the extant shapes were probably only used in the M.65 arrangement, for example S.163 with double strikes on the curved side (Fig 10.21 and see further below). Tiles of S.138 and S.144 were also found at this site, suggesting that a variation such as the British Museum reconstruction, M.67, was possible (Fig 10.9b).

At Meaux, as already noted, a version of the M.65 roundel was published by Tickell in 1796 (Fig 27.22) and part of a similar arrangement is re-set in the old entrance hall of Meaux Abbey farmhouse, previously known as Grange Farm. The tiles were 'arranged

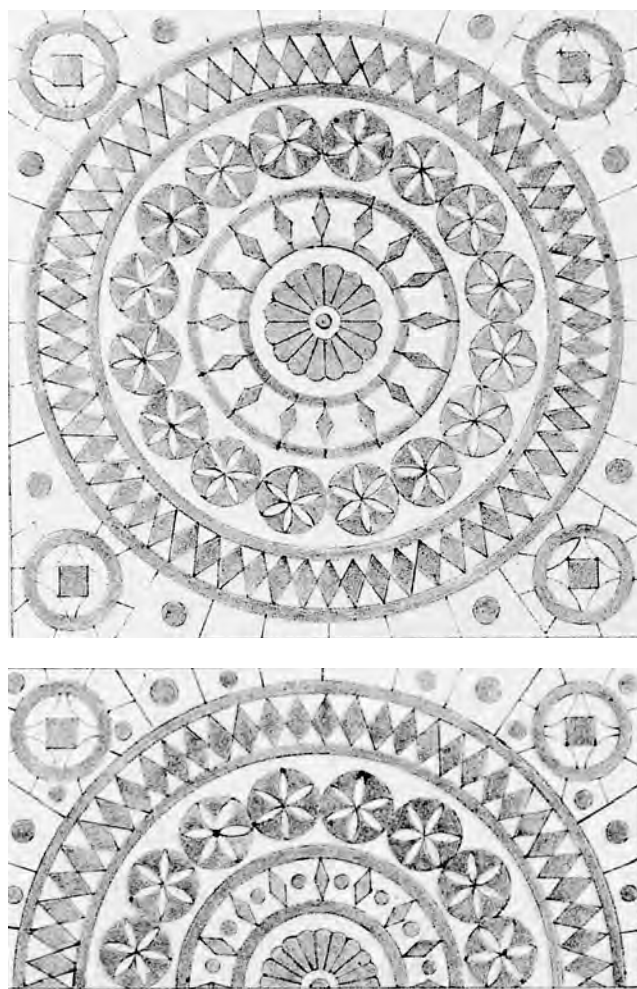


Fig 10.8: Plain Mosaic found at Sawley Abbey: variations on the M.65 roundel drawn by W. Richardson, c.1843 (M.65b and c). Not to scale

according to the style of pattern in which they were discovered', according to Poulson (1840–1, ii, 317). Apart from the small circle and ring in the centre, as recorded at Sawley, the rest of the re-set arrangement is as shown by Tickell but with one band and the outer frame missing. There is no evidence to support the diagonally arranged borders in Tickell's drawing, or the counter change of colours within the arrangement.

No roundels were found *in situ* or intact during G.K. Beulah's excavations at Meaux. However, several additional examples were suggested by his work on the finds (M.73–M.77; Figs 10.10–10.12). Some of these were simply put together from tiles in his collection, but others were made up from tile shapes that were found together in the church. The proposal for parts of the M.76/M.77 arrangement (Fig 10.10) is best supported, the reconstruction being based on about fifty tiles or fragments found together dumped in a pit in the choir. Fragments of the reconstructed band survive but the cornerpiece (M.76) is now missing, stolen when vandals broke into G.K. Beulah's store in 1969.

G.K. Beulah's reconstruction of roundel M.75 was based on drawings of a large and complex roundel

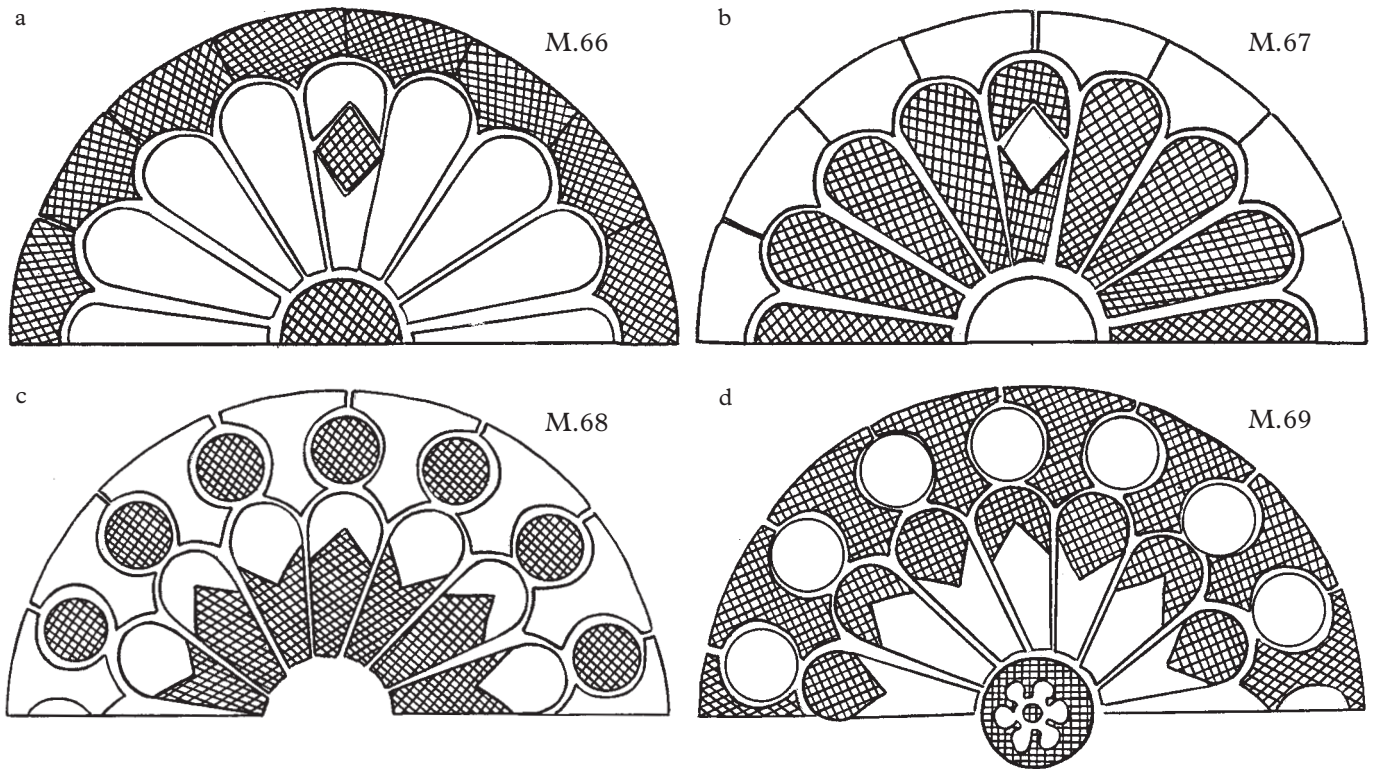


Fig 10.9a-d: Plain Mosaic, possible variations on the centre of the M.65 roundel (M.66, M.67, M.68, M.69). Eames 1980. Scale 1:5. (Reproduced by courtesy of the Trustees of the British Museum)

from Meaux published by Poulson in 1840–1 (Figs 10.11a and c). Pieces of tiling found before 1933 in the area immediately east of the monks' choir and at the foot of the presbytery steps were of this arrangement. The sections reconstructed by G.K. Beulah from these tiles included one of the *small* corner roundels and a segment of both the outer two bands, but it is uncertain which if any of these elements were found together (shown with heavy outline in Fig 10.11c). The inner bands and the larger corner roundel were reconstructed by Eames and Beulah from fragments, following Poulson (Figs 10.11b and d). The centre and other elements of the spandrels were inventions (Fig 10.11b). These reconstructions were also taken by the thieves. However, tiles of the shapes in the outer two bands, and both the large and small roundels in the spandrels, are extant in the British Museum collection.

The M.73 roundel (Fig 10.12) was made up of tiles and fragments from the nave, but it is uncertain whether this included both the good quality mosaic and its inferior quality counterpart (see Chapter 11, Group 2, *Inferior Plain Mosaic*). The tiles used to make up this roundel in reversed colours (M.74) were probably stray finds. Some portions of most elements of M.73/M.74 are extant in both the Beulah and British Museum collections. Roundel M.78 was made up from tiles found in the monks' choir (Fig 10.13). Examples survive as good quality Plain Mosaic tiles in the British Museum collection, although they fit together unusually badly to form this arrangement. This mosaic is the most questionable of those attributed to Meaux.

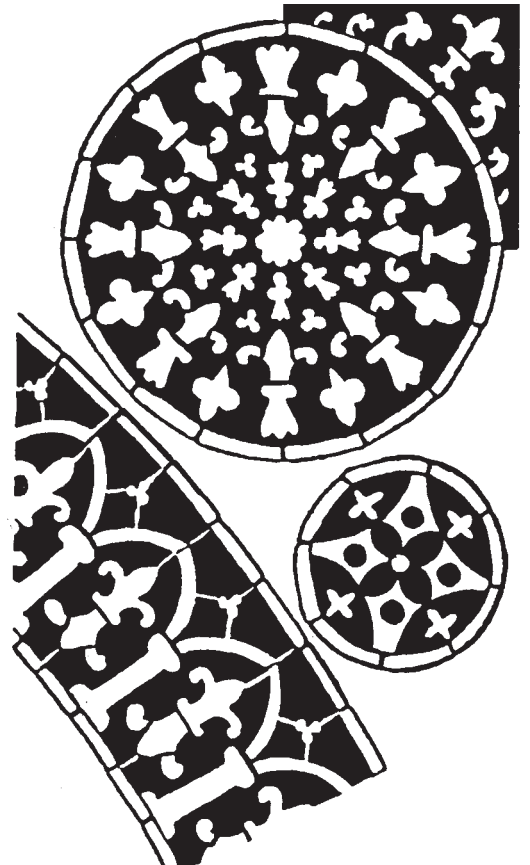
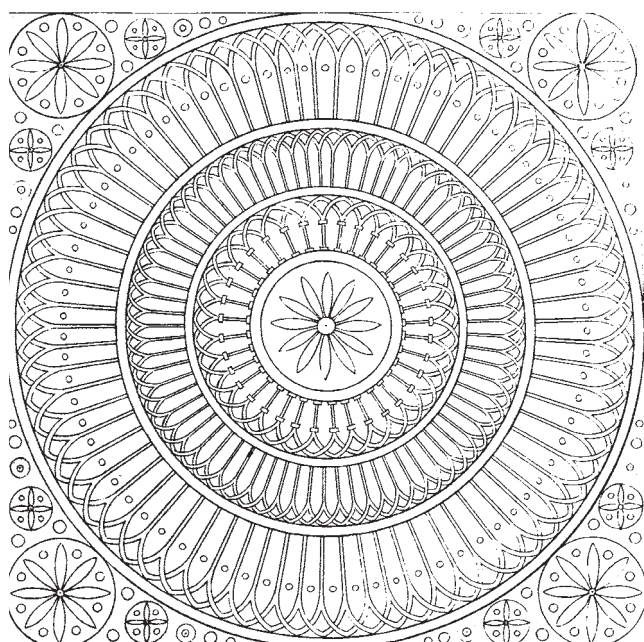


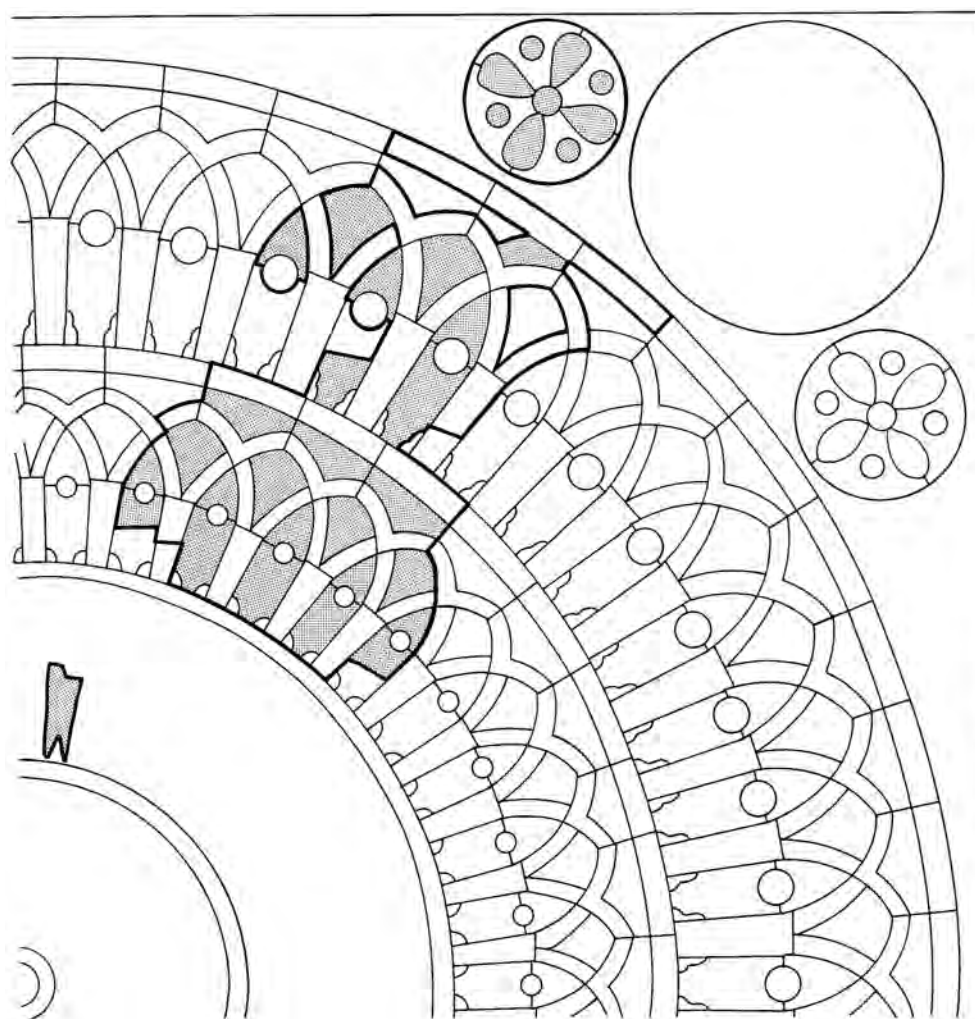
Fig 10.10: Reconstructions of Plain Mosaic from tiles found at Meaux Abbey: roundel M.76/M.77. Eames 1980. Not to scale (Reproduced by courtesy of the Trustees of the British Museum)



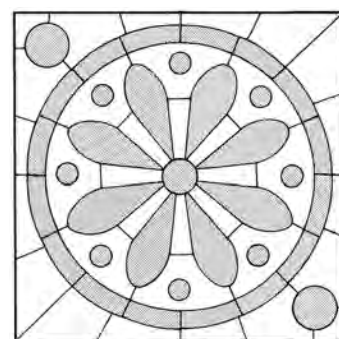
a



b

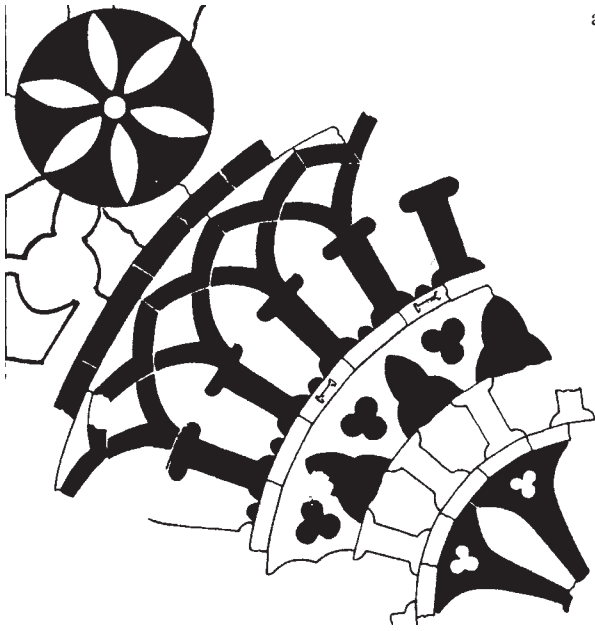


c



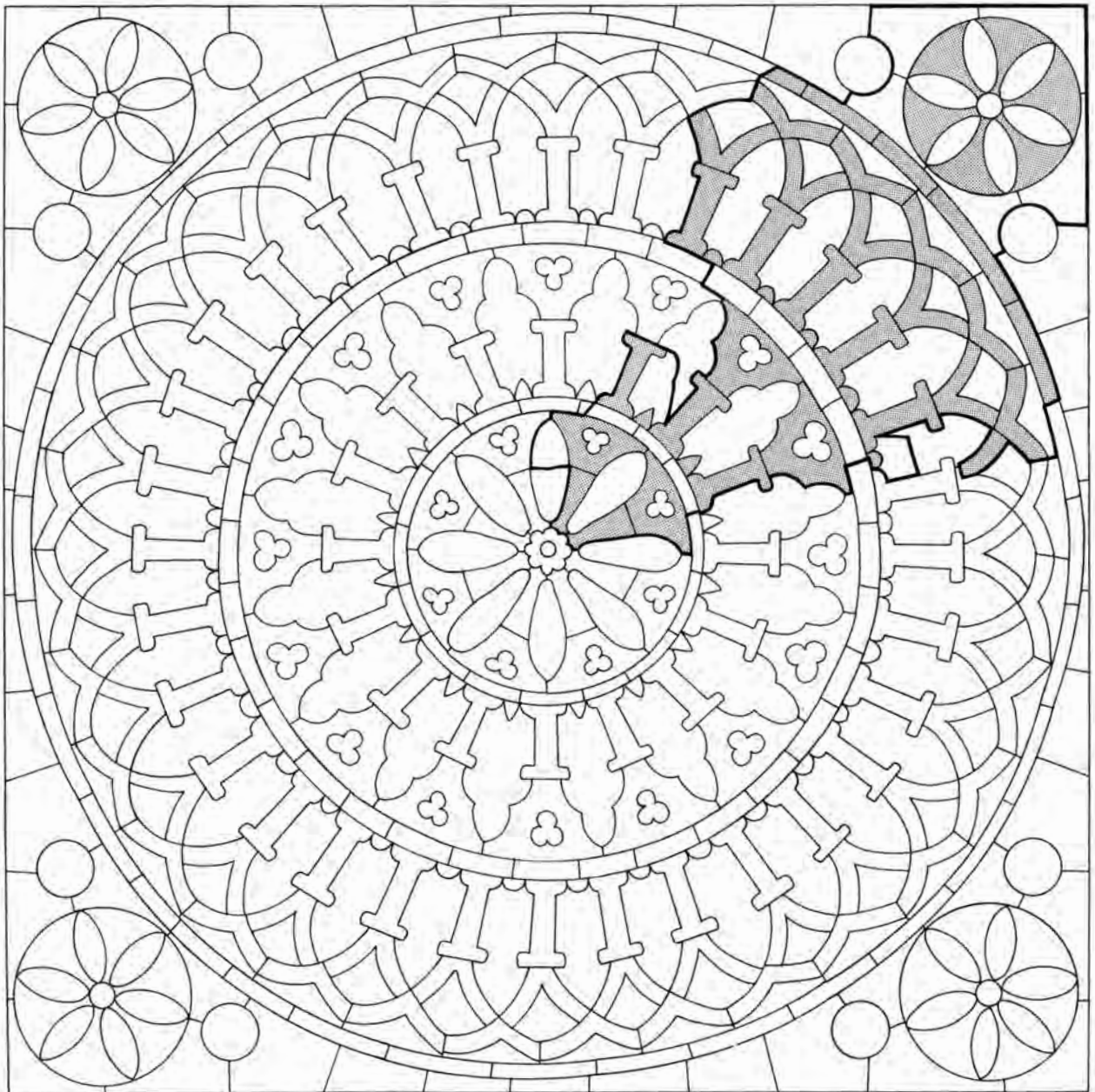
d

Fig 10.11a–d: Reconstructions of Plain Mosaic from tiles found at Meaux Abbey, roundel M.75. After versions by Poulson 1840–1 (a), Eames 1980 (b; reproduced by courtesy of the Trustees of the British Museum) and Beulah 1929 (c–d). In c, the areas outlined denote the tiles actually found. a, b and d not to scale, c scale 1:10.



a

Fig 10.12a–b: Reconstructions of Plain Mosaic from tiles found at Meaux Abbey, versions of roundel M.73 after Eames 1980 (a; reproduced by courtesy of the Trustees of the British Museum), and Beaulah 1929 (b). The reconstruction in the British Museum includes tiles of design 1.12 as shown in (a). In (b), the area outlined denotes the extant tiles. M.73 also occurred in reversed colours, designated M.74 in Eames 1980, and as Inferior Plain Mosaic (see Chapter 11). Scale 1:10



b

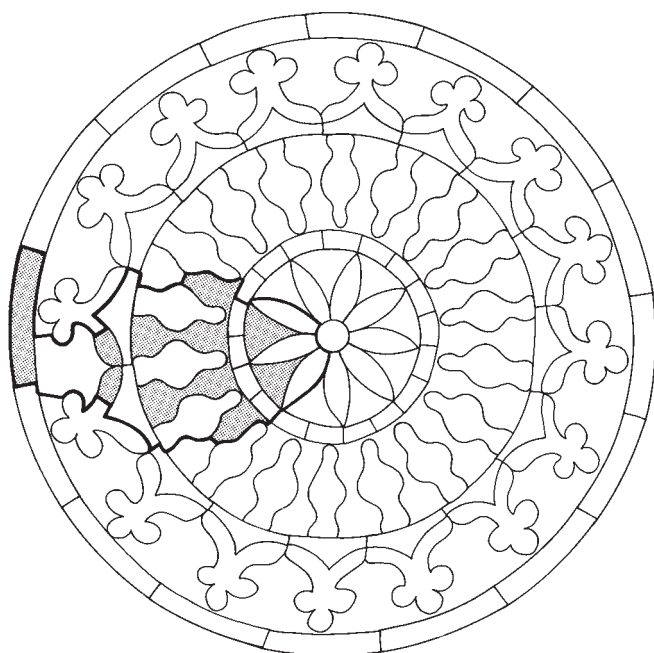


Fig 10.13: Reconstruction of Plain Mosaic from tiles found at Meaux Abbey, roundel M.78 after Beaulah 1929. The only extant tiles of this roundel, outlined above, are now in the British Museum. Individually the tiles are of good quality but they fit together poorly, unlike other Plain Mosaic arrangements. Not to scale

Other tiles from Meaux in the British Museum collection include portions of three further variations on the M.65 roundel. One of these has five petals in band 2 (Eames M.70–71) and another has four petals and a large number of pieces decorated with a counter relief rosette stamped into the surface (M.72). There is no evidence to support these reconstructions beyond the shapes of the small numbers of tiles and so they are not reproduced here. Other mosaic arrangements attributed to the site in the British Museum catalogue are: Eames 1980, M.1, 2, 6, 8, 12–13, 15, 18, 20–21, 23, 26–27, 31–35, 48 and 51–59. These include both good quality and inferior mosaic tiles (see further, Chapter 11, *Inferior Plain Mosaic*) and all are thought to be reconstructions from loose tiles. Some of the more complex are likely to be authentic.

It is certain, from all the above, that the M.65 roundel was a common feature of Plain Mosaic paving at all sites. Many variations also existed. These included elaborations and alterations to the tile shapes, including pierced tiles and decorated tiles, changes in the orientation of the roundels, which could be laid either on the square or on the diagonal, and the reversal of colours as seen in the comparison of the re-set roundels in the south transept and east end of the church at Byland. Beyond this, it is the assemblage from Meaux that shows greatest development. There must have been at least one other major roundel theme here, plus its own variations. The only other site for

which there is evidence for the use of a second roundel similar to the M.75 arrangement at Meaux is at Louth (see Chapter 27, Fig 27.21).

Other characteristics of Plain Mosaic

Shape: The Plain Mosaic shapes are as published in the British Museum catalogue (Eames 1980, 2, 1–328) with additions shown in Fig 10.14. The shapes from each site are listed in Chapter 27.

A distinctive feature of Plain Mosaic tiling is the extreme care taken in the cutting out and preparation of the tile shapes. Individual shapes can, therefore, be identified with some precision. However, the exact size of each shape varies more between sites than within the assemblage of one site. This is even true of some of the most straightforward shapes, the small squares, found at every site, and might simply reflect the length of a knife blade. At Byland and Rievaulx, for example, the small squares are 70–75mm across while at Fountains they are 80–90mm. Tiles of the trellis patterns (M.24, M.25) also occur in various sizes. The large square tiles in the trellis arrangements at Byland are 105 or 110mm, at Meaux they were 75 or 100mm, at Sawley 110mm, while those re-set in the platform at Fountains are 85mm. A larger sized trellis mosaic at Fountains might be suggested by some square tiles of *c.*125mm re-set around a grave slab in the middle of the chapter house. Tiles found in the barn at Easby but of uncertain provenance were of similar type but *c.*105mm across.

Statistical comparison of the assemblage of shapes from different sites was carried out in order to identify the degree of similarity between them. The method used was hierarchical agglomerative clustering with the analyses performed using version 4 of the SPSS statistical software system. A proximity measure was chosen that was based on the number of tile shapes at the two sites being compared, expressed as a proportion of the number of shapes found at the less diverse site. Proximity would therefore reach a maximum value of unity when the tile shapes from one site formed a complete subset of those from another. It would decrease in value, reaching zero in the limit, as the amount of overlap decreased. For example, if 53 different shapes were recorded at site 1, and 82 at site 2, and if there were 12 shapes common to both, the proximity measure would be 12/53. The interpretation of values based on small samples is difficult, since two sites using tiles from the same source might have different subsets of shapes. This difficulty is unavoidable in most proximity measures based on archaeological data.

As shown in Tables 10.1–10.4, the number of shapes in an assemblage increased with the size of the assemblage in most cases. The clear exceptions were Byland, where a huge sample yielded only 99 individual shapes, and Meaux, where a much smaller sample yielded 238 shapes. As noted elsewhere, the sample size and composition of the Meaux assemblage was influenced by the history of collection at that site.

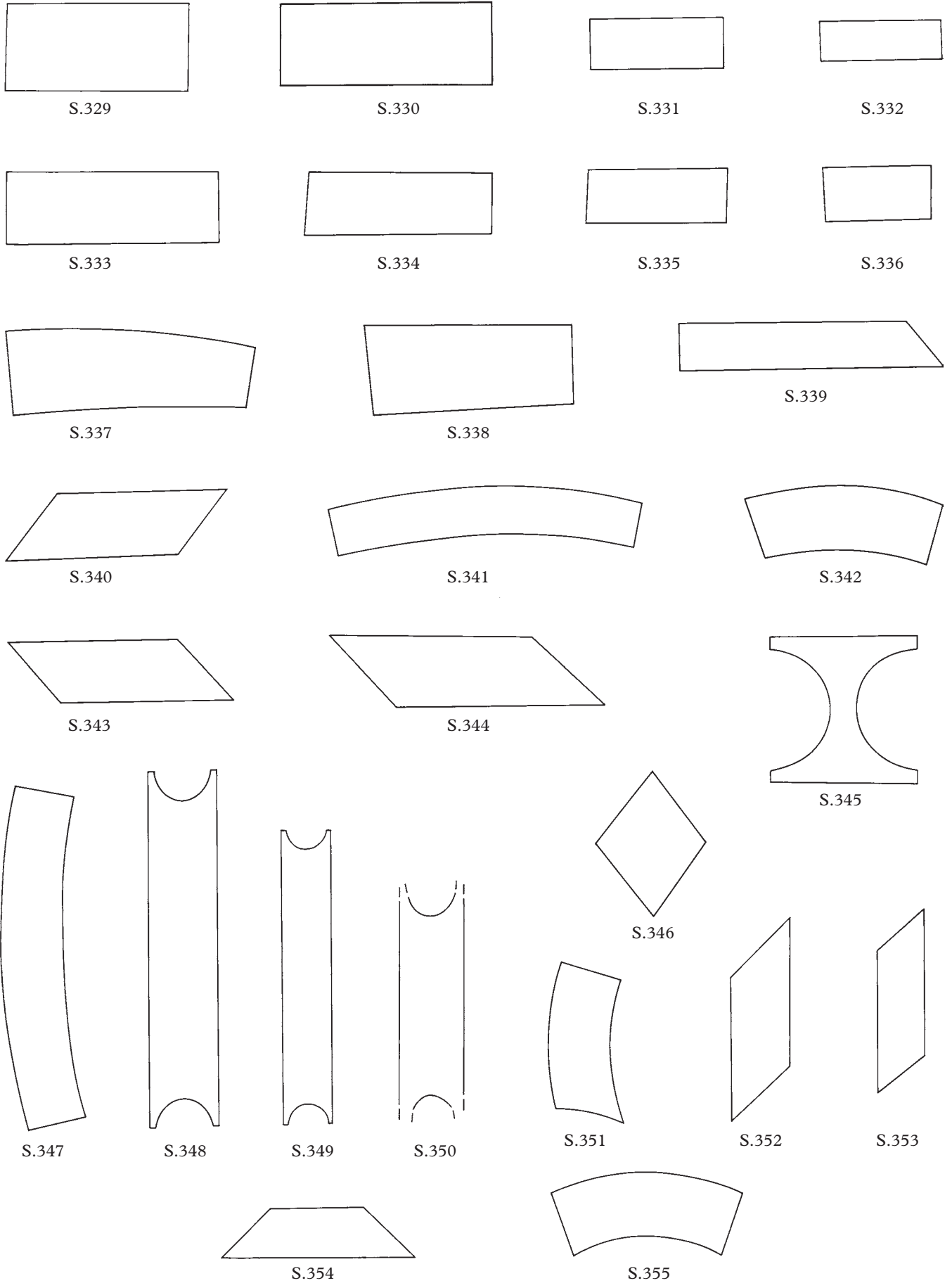
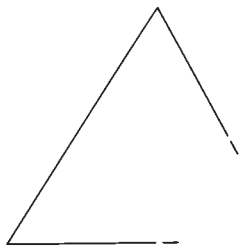
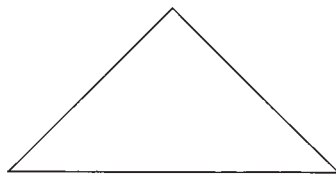


Fig 10.14: (pp.110-14) Plain Mosaic shapes, additions to those published in Eames 1980, 2. Scale 1:3



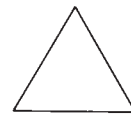
S.356



S.357



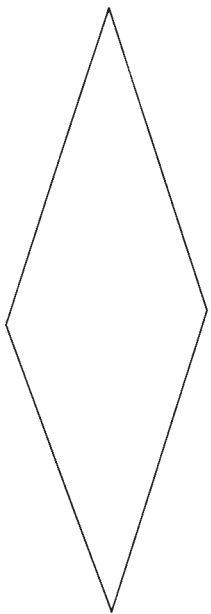
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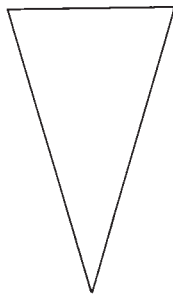
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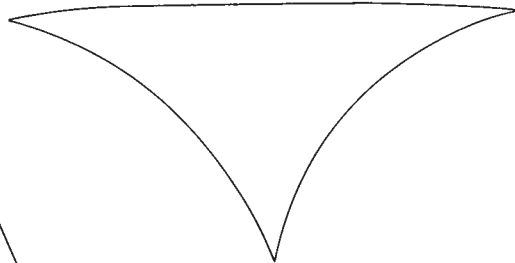
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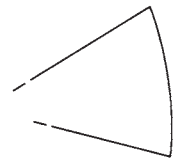
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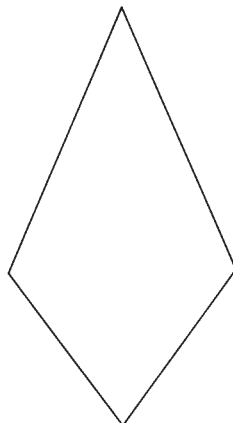
S.362



S.363



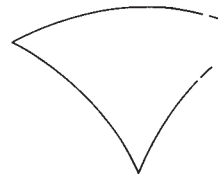
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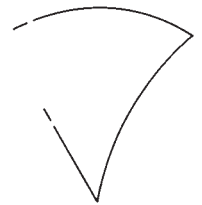
S.366



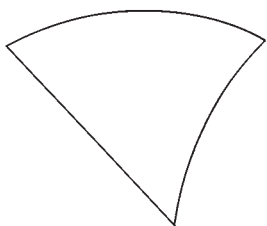
S.365



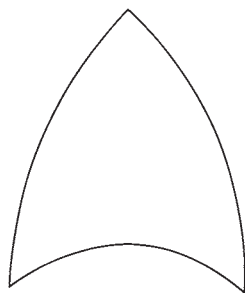
S.367



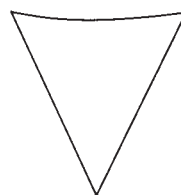
S.368



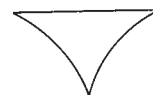
S.369



S.370



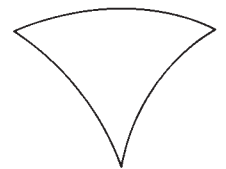
S.371



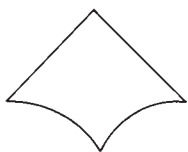
S.372



S.373



S.374



S.375



S.376



S.377



S.378



S.379

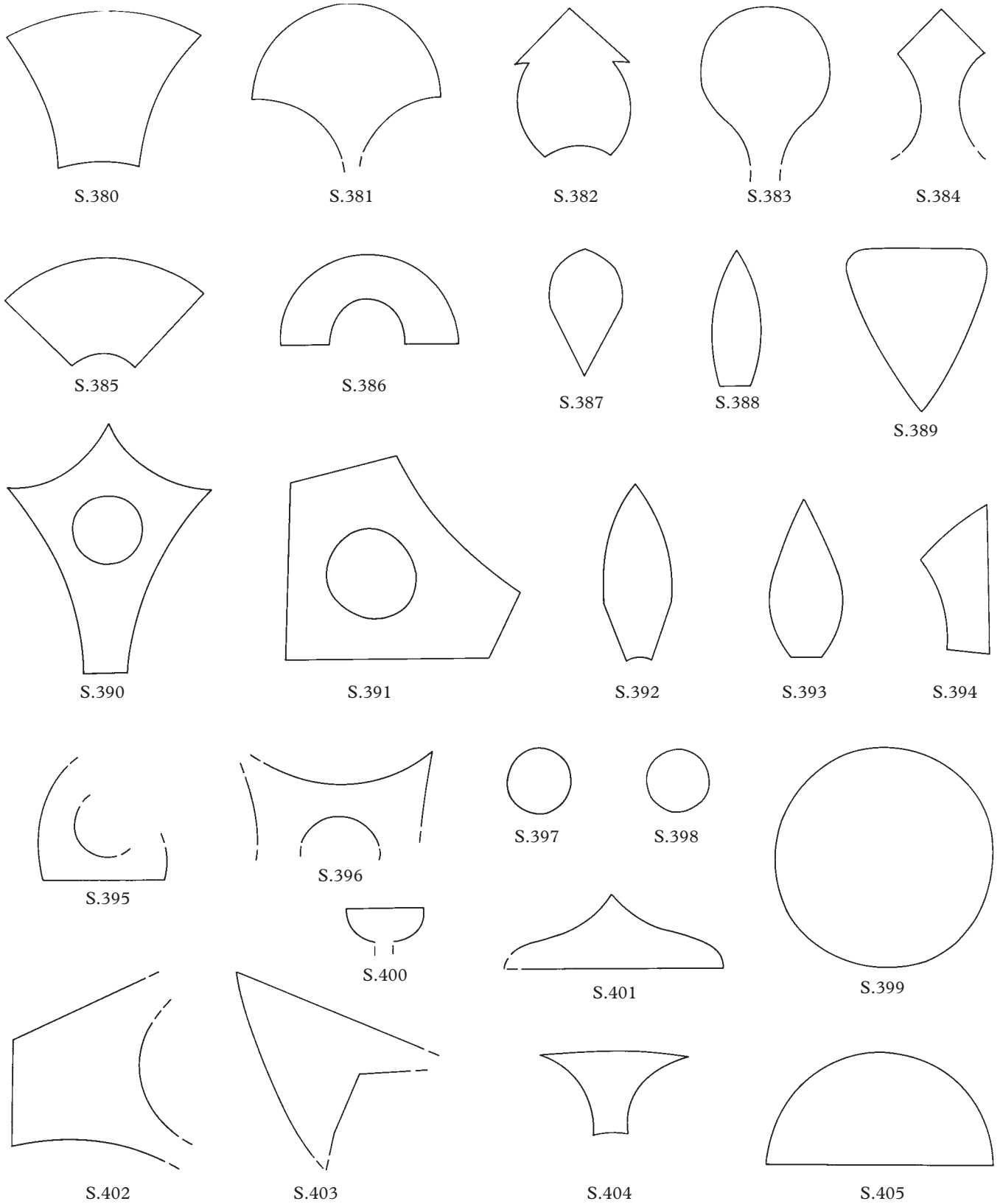
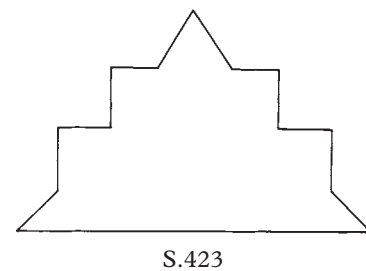
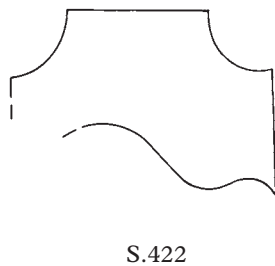
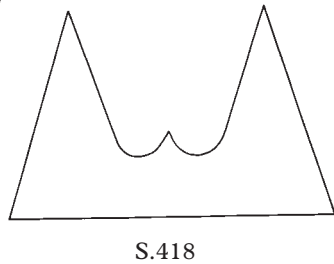
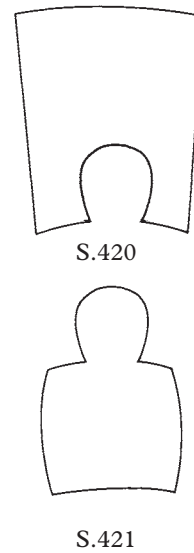
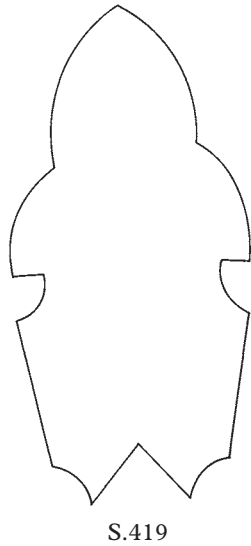
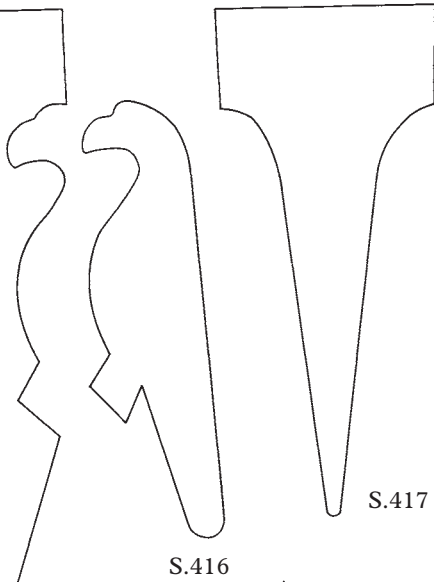
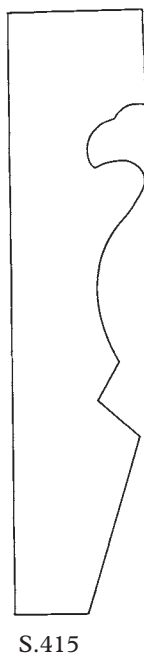
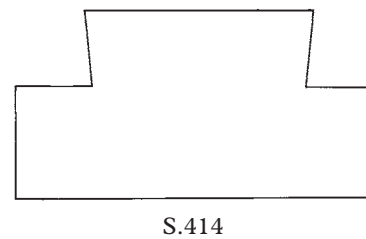
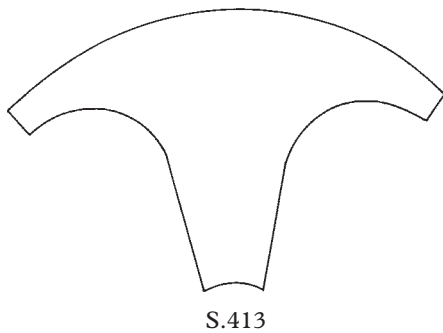
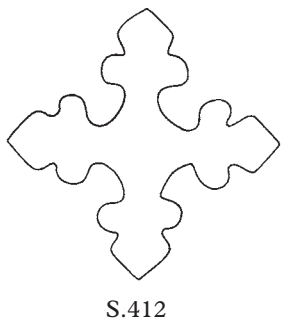
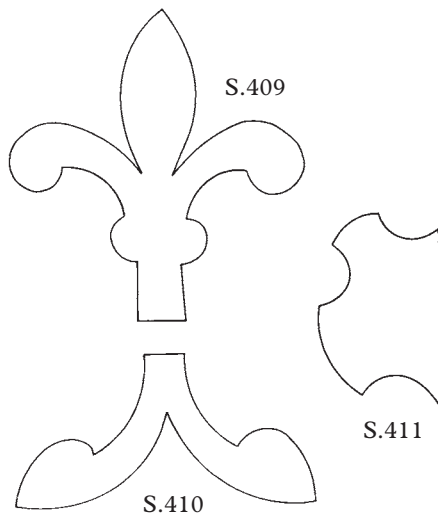
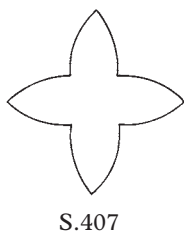
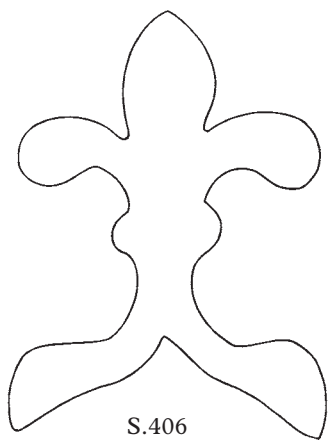


Fig 10.14 (cont'd): Plain Mosaic shapes, additions to those published in Eames 1980, 2.. Scale 1:3



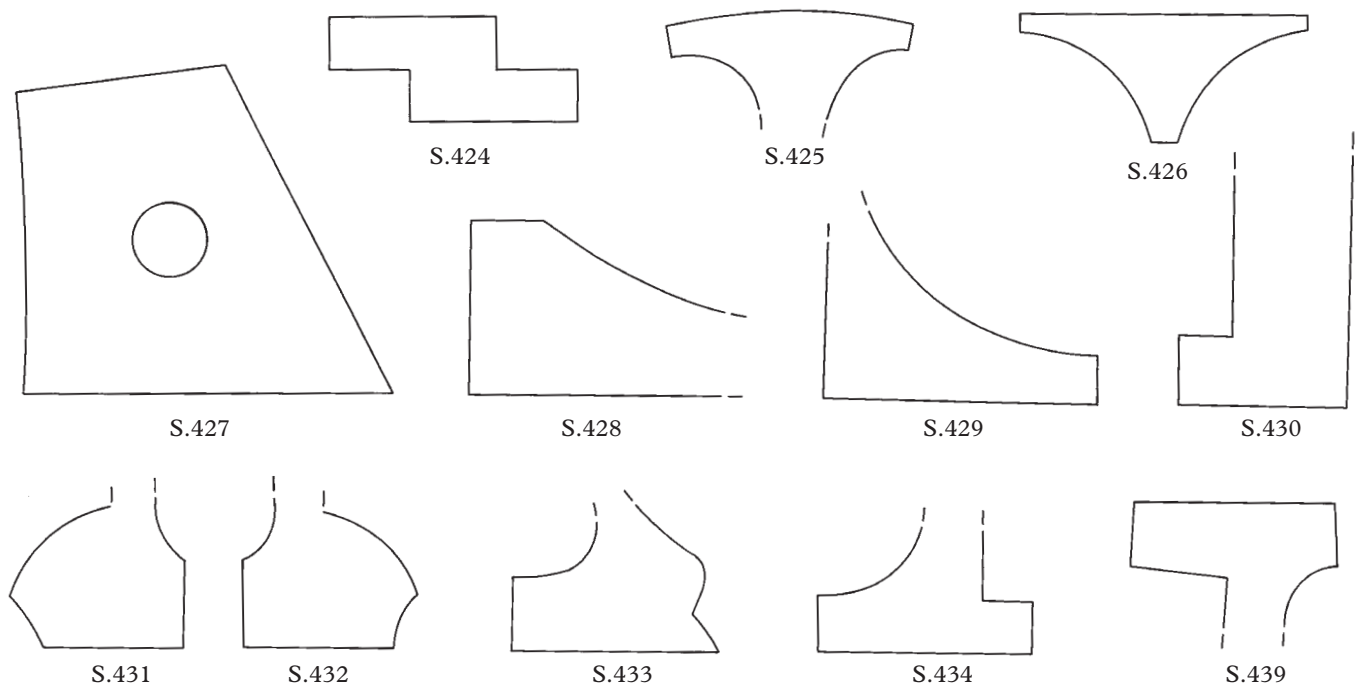


Fig 10.14 (cont'd): Plain Mosaic shapes, additions to those published in Eames 1980, 2.. Scale 1:3

However, the difference in number of shapes at these sites is thought to be a genuine reflection of the relative complexity of the pavements. Nine sites were included in the analysis, although the sample sizes for some were small (particularly those from Helmsley, Newbattle, Sawley and Thornton). Given the limitations outlined above, the analysis suggested three or four sub-groups of material, as follows:

- A. Byland, Rievaulx, Gisborough, Helmsley
- B. Fountains, Newbattle (may group with 1)
- C. Meaux, Thornton
- D. Sawley

As some simple geometric shapes might be almost inevitable when making a mosaic floor, a second analysis was carried out in which shapes that occur in six or more of the nine sites (i.e. the commonest shapes) were ignored. The results suggested the same groups as above but showed the link between groups (A) and (B) as less likely.

Size: Leaving aside extreme outliers and tiles with a wear grade of 4 (i.e. those where no white clay or glaze remains), the tiles at Byland, Gisborough, Helmsley Castle, Newbattle and Rievaulx have a depth of *c.*35mm. Those at Fountains, Meaux, Thornton and York Minster are slightly thinner, with a depth of *c.*30mm, while the Newminster tiles are much thinner. There are two depths of tile among the 17-tile assemblage from Newminster in the British Museum: four are 12–15mm deep, seven are *c.*25mm deep. All the Newminster tiles share similarities in glaze and fabric. The six other tiles are *c.*5mm squares or scored and

split triangles. They are *c.*25mm deep but some differ from other Plain Mosaic tiles in respect of glaze and an absence of keying. A complicating factor at Newminster is the presence of another tile series (Other Decorated Mosaic – Group 8) which includes *c.*75mm squares which are recorded in photographs but for which there are few extant examples. It is possible that some of these six tiles are of that group. The tiles from Sawley are thicker and larger than average, despite being worn. The range of Plain Mosaic tile depths for each site were:

Byland:	30–40mm
Fountains:	24–37mm
Gisborough:	30–40mm
Helmsley:	28–39mm
Meaux:	26–37mm
Newbattle:	34–37mm
Newminster:	12–27mm
Rievaulx:	32–41mm
Sawley:	38–46mm
Thornton:	26–35mm
York Minster:	25–28mm

Designs: Although designated the ‘Plain’ Mosaic Group, there are a few decorated tiles at each site (designs 1.1–1.15, 1.19–1.24, see Fig 10.15). These are found on either square or shaped tiles and, apart from the decoration, the tiles are exactly like other examples of Plain Mosaic. All the shapes with decoration are also found without decoration. Details of the sites, designs, numbers and shapes are given in Table 10.5. Information about designs and decoration on tiles at Newminster is only known from the published report (Honeyman *et al.* 1929).

Table 10.5: Sites with Plain Mosaic designs

<i>Sites</i>	<i>Designs</i>	<i>Shapes</i>
Byland Abbey	1.5	S.34/5
	1.7	S.3, 4
Fountains Abbey	1.3	S.34
	R1.3	S.373
	1.9	probably 90mm square
	1.10	
	1.11	S.11
Gisborough Priory	[?1.17]	S.4
	1.1	S.34, 36
	1.2	S.34
	1.5	S.34
	1.6	S.110, 117
	1.7	S.3, 4, 47, 48, 58, 163, 346
Meaux Abbey	1.7	S.3, 34, 102, 129, 157, 208, 263, 265, 330, 367
	1.8	S.3
	1.12	S.274
	1.13	c.100mm squares
	1.15	c.100mm squares
	1.19	
	1.20	
	1.21	
	1.22	rectangles: c.180×46mm and 120×42mm
	1.23	
	1.24	
	North Grange kiln	1.13
Newbattle Abbey	1.7	not extant, unscaled drawing (Richardson 1929)
	1.13	c.100mm squares
	1.14	?rectangle
	1.15	c.100mm squares
Newminster Abbey	1.7	–
Rievaulx Abbey	1.4	S.110
	1.7	S.3, 4, 36
	[?1.16]	S.3
	[?1.18]	S.4, 129
Wether Cote kiln	[?1.16]	S.3
York Minster	1.7	S.34/5
	1.13	c.100mm squares
	1.15	c.100mm squares
Old Byland Church	1.1	S.36
	1.7	S.4, 11

Designs 1.16–1.18 are uncertainly assigned to the Plain Mosaic Group and are listed with a question mark and square brackets. ‘R’ indicates reversed colours.

There are no decorated tiles among the extant assemblages from Helmsley, Sawley or Thornton, but many of the tiles from these sites are worn.

The designs tend to be simple, stand alone motifs, probably made using small stamps. The two on 100mm squares (designs 1.13 and 1.15) could have formed continuous repeating patterns. Beulah believed that these designs were used in arrangements like M.24 and M.30 but it is not known whether any

were found *in situ*. Tiles of design 1.13 were certainly found as wasters at the North Grange kiln site at Meaux and the physical characteristics of both types are the same as other Plain Mosaic tiles (Fig 10.16).

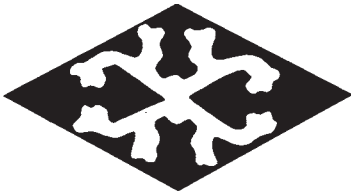
Decoration: A considerable variety of techniques was used to make these designs, as shown in Table 10.6. It can be seen that several designs were executed in more than one technique. However, it should be stressed that the numbers of decorated tiles were extremely small, forming a minute proportion of the whole Plain Mosaic assemblage. The proportion of decorated tiles was higher at Gisborough than at other sites (Fig 10.18).

The occurrence of different types of decoration, by site, is shown in Table 10.7. The most unusual of these, reverse inlay, involved coating the quarry with white clay, stamping the design into this and then using red clay as the inlay (Fig 10.19). In northern England this technique was only used by the Plain Mosaic tilers.

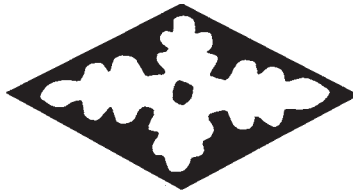
All the inlaid tiles re-set in the south transept at Byland are of design 1.7 with the rosette design inlaid to give a light-on-dark pattern (as in Fig 10.17). The roundel in reversed colours in the chancel does not have decorated tiles in the spandrels. These would have had to be reverse inlaid to fit the colour scheme. It is possible that the reverse inlay technique was not used at this site, although one reverse inlaid tile in the British Museum (BMC/1328) is attributed to Byland and at Old Byland one of the two tiles of design 1.7 is a positive version, the other a negative version.

Several additional reverse-inlay permutations exist among the Gisborough tiles (Fig 10.18). On one example of design 1.1 the background was inlaid in white, the tile stamped again and the background re-inlaid in red. The motif, in the red clay of the body fabric, appears with a white outline against a red clay background. The quarry of another example of design 1.1 was coated with white clay before a stamp that depressed the background of the design was applied, leaving the design upstanding in white clay. The background was then filled with red clay. This ends up as the light-on-dark effect of ordinary inlaying. Perhaps the stamp that depressed the motif had been mislaid. The techniques used on the worn tiles of design 1.1 at Old Byland are unclear but the motif appears in dark-on-light, light-on-dark and outlined modes. Similarly complex sequences of stamping and inlaying were used on a tile of design 1.3 from Fountains. Not every design is known in reversed colours. Among the extant assemblage from Gisborough, design 1.2 is only known in a light-on-dark form, and designs 1.5 and 1.6 only as dark-on-light motifs.

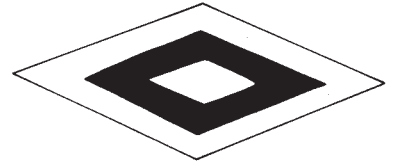
The reverse inlay of the six extant inscribed tiles from Meaux (designs 1.19–1.24) might suggest that stamps were used in the manufacture of these tiles (there are few signs of the scratching associated with the sgraffiato technique; see Chapter 9, p.87). The Lombardic lettering was carefully and evenly executed



1.1



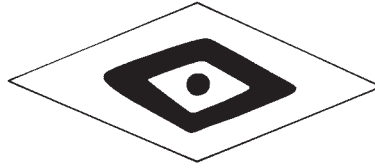
1.2



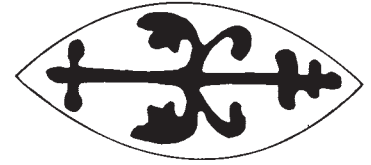
1.3



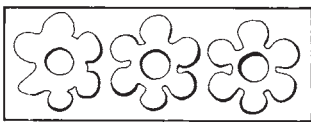
1.4



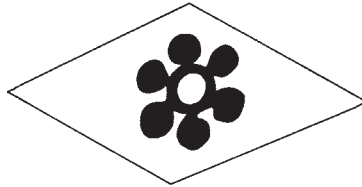
1.5



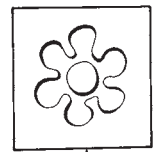
1.6



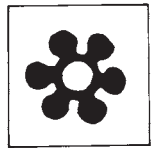
1.7a



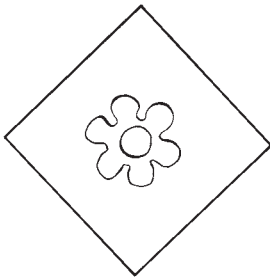
1.7b



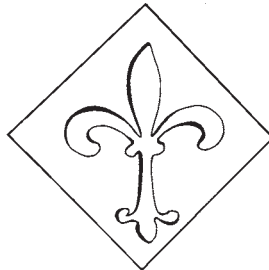
1.7d



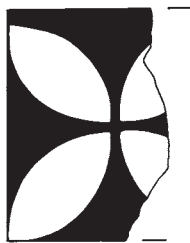
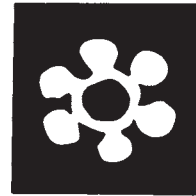
1.7c



1.7e



1.8



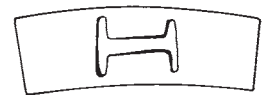
1.9



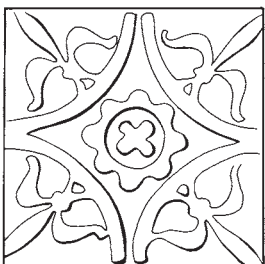
1.10



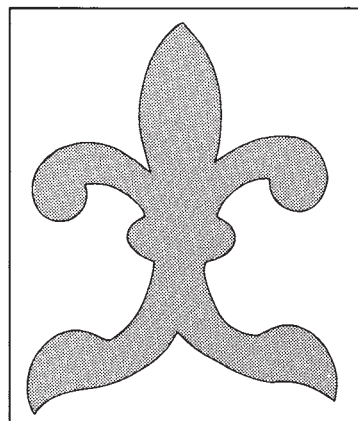
1.11



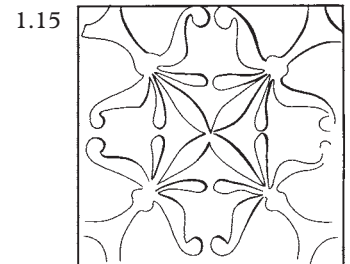
1.12



1.13



1.14



1.15

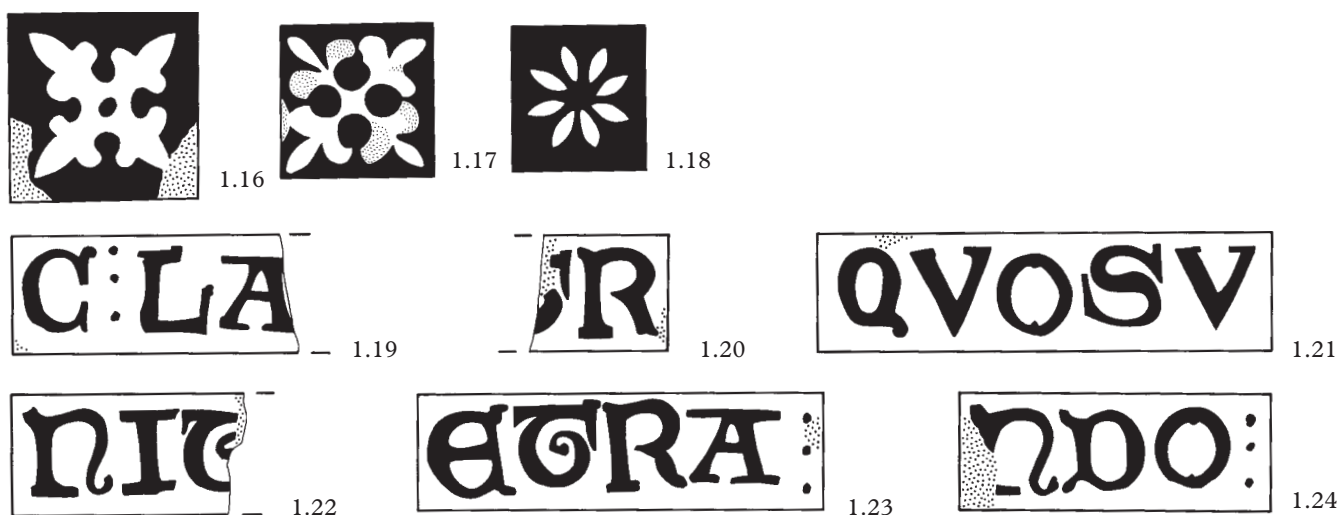


Fig 10.15 (left and above): Plain Mosaic designs. At Meaux, design 1.7 occurs in counter relief on several different shapes (see, for example, Fig 10.4). On 75mm square tiles, it was used as a pair to the counter relief fleur-de-lis of design 1.8. Design 1.14, a reverse inlaid fleur-de-lis from Newbattle, only survives as a few fragments (see Fig 10.19b). The drawing of design 1.14 is based on an illustration by Richardson 1929. Designs 1.16, 1.17 and 1.18 are uncertainly attributed to the Plain Mosaic Group. Scale 1:3



Fig 10.16: Plain Mosaic wasters, North Grange, Meaux: distorted and fused example of design 1.13; shaped tiles fused together



Fig 10.17: Plain Mosaic in Byland Abbey church, south transept chapels (step D in Fig 27.3), showing risers of M.4 with one tile inlaid with the rosette design 1.7c

but there had been problems with bleeding of the glaze during firing. However, the use of stamps for an inscription like this would be unusual. Stamps were usually only cut when they were going to be used many times over. Inscribed tiles were often decorated by hand. It is uncertain whether the counter relief design 1.12, also from Meaux, was intended as lettering (I or H; BMC/13008–9). One example was found with a segment of roundel M.73 about half way down the nave (see Fig 10.12a and entry 61, Chapter 27: *Area M*).

A few designs, as shown in Table 10.5, are uncertainly assigned to Plain Mosaic. Although the shapes and other characteristics of these tiles suggest that they belong with Plain Mosaic, the quality of the decoration is unusually poor for this group. In particular some features of design 1.16 might be attributed to the Inlaid

Copies Group. Design 1.16 is found on three squares at Rievaulx and on one at Wether Cote kiln site. One of the Rievaulx examples is inlaid while the others have an olive-yellow glaze over the whole of the upper surface, with the stamp having only made a very slight impression on the quarry (see Chapter 12, pp.137–9).

Design stamps: Despite the use of the same, often elaborate, decorative techniques at several sites, Table 10.5 shows that only designs 1.7, 1.13 and 1.15 were found at several different locations. In the case of design 1.7 (the rosette) a number of different stamps were in use, with the individual stamps rarely used at more than one site. One may have been used at both Rievaulx and Gisborough, and another at Meaux and York Minster, but it is impossible to say for certain



Fig 10.18: Plain Mosaic from Gisborough Priory re-set in the west end of the parish church. Photograph taken by S.I. Hill

Table 10.6: Designs found in different decorative techniques

Designs	Inlaid	Reverse Inlaid	Background stamp used	Counter relief (on dark)	Counter relief (on light)
1.1	Y	Y	Y		
1.2	Y				
1.3	Y	Y	Y		
1.4		Y			
1.5	Y		Y		
1.6	Y	Y	Y		
1.7		Y		Y	Y
1.8				Y	
1.9	Y				
1.10	Y				
1.11		Y			
1.12				Y	
1.13	Y	Y		Y	Y
1.14		Y			
1.15	Y	Y			Y
1.19–1.24		Y			

Table 10.7: Types of decoration by site (P=present)

Sites	Inlaid	Reverse Inlaid	Counter relief
Byland	P	?P	
Fountains	P	P	
Gisborough	P	P	
Meaux	P	P	P
Newbattle	P	P	
Newminster	P		
North Grange kiln	P	P	
Old Byland	P	?P	
Rievaulx	P	P	
York Minster	P	P	

with such a simple design. The rectangular tile at Meaux stamped with three rosettes could have been made using a stamp of a single rosette. The stamps of design 1.5 could not be compared at Byland and Gisborough. Stamps of design 1.1 at Old Byland and Gisborough might be the same, but the Old Byland tiles may have been re-used in their present location

(entry 70, Chapter 27). The stamps of designs 1.13 and 1.15 at Meaux, Newbattle and York Minster probably were the same at all three sites. All the stamps were well cut.

J.S. Richardson (1929, 292) suggested that the large reverse inlaid fleur-de-lis from Newbattle (design 1.14; Fig 10.19b) might have been stamped with an existing tile of this shape. Though only extant as several fragments, the Newbattle tile does appear to be the same size and shape as some fragments of a mosaic fleur-de-lis at Meaux, and similar to a largely complete example from Thornton (S.406). However, to allow for shrinkage in firing, the stamp used for the Newbattle tile would have had to be larger than the extant mosaic pieces.

The way the tiles with decoration were used in Plain Mosaic pavements may have varied on a site by site basis. At Byland, for example, two-colour versions of design 1.7 were used on risers and in the spandrels of the M.65 roundel in the south transept. At Meaux, this design is only found in counter relief, usually on the dark coloured 75mm squares. It was used in conjunction with design 1.8, the counter relief fleur-de-lis



Fig 10.19a: Plain Mosaic tiles of design 1.15 from York Minster. The tile on the right is inlaid in the usual way. The fragment on the left is reverse inlaid

which is only known from Meaux, and is always on light-coloured 75mm squares. In the British Museum register (Acc. 1955, 10–14) G.K. Beulah recorded that, although both designs were found *in situ* in a coherent area of Mosaic M.107, the decorated tiles were placed haphazardly with no particular arrangement.

White clay and glaze: The layer of white clay applied to tiles to be glazed yellow measures 1–3mm on most Plain Mosaic tiles with wear grades 1–2, i.e. where the full depth of white clay is known. Similar depths are found among the inlaid and reverse inlaid tiles. The depth of white clay is most varied at Meaux, Fountains and Rievaulx. At these sites there are a few tiles with only a thin layer of white clay, which might have been applied as a slip, while others have a layer 4mm deep. Among the Meaux assemblage, drips of white clay are visible on the sides of some tiles, even where the depth of white clay suggests it was applied in a plastic form. The tiles from Newminster in the British Museum have *c.*1mm white clay on the less worn tiles but also have a thin slip on the tile sides. This might have been a result of wetting the tiles after the white clay was applied.

The commonest colours of the glazed tiles at all sites were dark green, black or dark brown over the body fabric, and yellow over the white clay. The main differences between the assemblages were in the predominance of dark green over dark brown. Dark green predominated at Byland, Fountains, Helmsley, Rievaulx and York Minster. Both dark green and dark brown were recorded from Newbattle and Newminster. Dark brown predominated at Meaux, Gisborough and Thornton. Few of the Sawley tiles had any glaze left on them. A few tiles (*c.*40 in all) were glazed bright green over a layer of white clay (Byland, Gisborough, Meaux, Newminster, Rievaulx; Fig 10.20). In addition there were some examples glazed olive at Fountains, Newbattle and Meaux, and some glazed orange from Meaux (but see also Inferior Mosaic, Group 2).

Nail holes: None.



Fig 10.19b: A fragment of Plain Mosaic design 1.14 from Newbattle Abbey showing the layers of red and white clay used in reverse inlay decoration

Firing: Most tiles at all sites were partly or largely reduced in firing, with pink or red oxidised clay at the margins, a grey core and upper surface. There are a few completely oxidised examples from Byland and Rievaulx and some highly fired, completely reduced tiles from Fountains. Almost all extant examples from Sawley are reduced.

Fabric: Most of the tile fabrics were not markedly distinctive at $\times 10$ magnification. At Byland, Rievaulx, Gisborough, Helmsley, Meaux and Newbattle the fabric was laminated and in some cases had cracked or broken horizontally during firing. The quartz measured up to 1mm diameter and was of about 20% frequency. Few other inclusions were visible. At Fountains and Thornton many of the tiles were made of a better-mixed clay with finer quartz. These tiles tended to have sharper edges and did not show signs of horizontal cracking. The few extant tiles from Newminster and York Minster also had these characteristics. The majority of the Fountains tiles, and some of those at Thornton, had *c.*5% of hard, black or red inclusions of 1–2mm diameter. However, at Fountains there were also some tiles with a coarse, sandy, laminated fabric (more than 20% frequency and up to 2mm in diameter). The only visually distinctive fabric among the Plain Mosaic tiles was that of a large proportion of the assemblage from Sawley. These had *c.*10% frequency of angular white inclusions 1–4mm in diameter. The visual fabric codes, recorded by site, were:

Byland	1, 5
Rievaulx	1, 2, 3
Helmsley	1
Gisborough	1, 3
Meaux	1, 8
Newbattle	1
Fountains	1, 7, 8
Newminster	1, 3, 8, 9
Thornton	1, 3, 5
York Minster	2, 5
Sawley	10



Fig 10.20: Plain Mosaic: unworn tiles from Rievaulx Abbey, displayed at Melrose Abbey. Note the marking-out lines, using twine, on the yellow tiles of shape S.73. The chipped glaze of one example clearly shows the white clay beneath. The green companion tile (S.139) also has a layer of white clay on the quarry and consequently has fired a brighter green than the adjacent examples glazed directly on to the quarry. The white clay on the green tile was probably applied by mistake but it serves to demonstrate that two glazes, with different constituents, were used by the Plain Mosaic tilers

Analysis of the chemical composition of a sample of c.10 tiles from each site, and of some tiles of the Inlaid and Usefleet Groups, was carried out by Dr M.J. Hughes at the British Museum in 1992–3 (see Appendix 1 for the full report). Statistical analysis of the ICP results suggested a broad division of the Plain Mosaic tiles into two main groups as follows (and see Fig A.1):

- A. Byland, Helmsley, Rievaulx and Wether Cote
- B. Fountains, York Minster, Sawley, Newbattle, Gisborough, Newminster, Thornton

The results also showed that the ICP fabric ‘clusters’ grouped by site, but with more than one fabric

cluster for each site (see Table A.3). Plain Mosaic tiles from Byland were found in three adjacent clusters (4, 5 and 6) which did not contain tiles of other sites (exceptions: one Byland Plain Mosaic was in each of clusters 1 and 3). Rievaulx tiles were in adjacent clusters 16, 17, 18 and 19, along with all the Wether Cote tiles (exceptions: one Rievaulx Plain Mosaic was in cluster 1). Newbattle tiles were all in cluster 2. Newminster tiles were in adjacent clusters 7 and 11 (there was also one Thornton tile in cluster 11 and one Fountains tile in cluster 7). Meaux tiles were in adjacent clusters 10 and 12, along with those from Gisborough and some of those from Thornton (exception: one Meaux tile was in cluster 15). Other Gisborough tiles were in the adjacent cluster 13. Sawley tiles were in clusters 15 and 20 (with one Meaux tile). York Minster tiles were in cluster 22, with two examples in cluster 8 with tiles from Fountains. The other Fountains tiles were in cluster 9 with tiles from Thornton.

In general, then, different clay sources were used to make the tiles for each site or, in some cases, for two or three sites. The correspondence of the tile fabrics within sites was remarkable, given that in some cases the small samples were taken at random from loose collections of thousands of tiles. At Wether Cote, which is thought to be a kiln site producing tiles for Rievaulx, the whole sample (Plain Mosaic and other tiles) grouped with tiles from the church at Rievaulx (plus one non Plain Mosaic tile from Whitby). Similarly, all but one of the samples from Meaux and North Grange, the other known kiln site, grouped together.

It can be suggested from these results, that individual clusters might represent particular ‘batches’ of clay, while closely grouped clusters represent the products of individual kiln sites. Distinctive groups of clusters were more strongly apparent in the 3-D visualisation of the data. They were identified as:

- a Byland group (clusters 4, 5 and 6)
- a Wether Cote group (clusters 14, 16, 17, 18 and 19)
- a Newbattle and non Plain Mosaic group (clusters 1, 2 and 3)
- a Fountains/York group (clusters 8, 9, 20 and 22)
- a Meaux group, which also included many of the tiles from Thornton, Gisborough and Newminster (clusters 10, 11, 12 and 13)
- Sawley

Each of these groups may represent a different kiln site or tiler and, taken with the archaeological evidence for production at Wether Cote and Meaux, be located at or near one of the sites being supplied. A kiln or tiler is therefore suggested at Byland, making tiles for Byland alone. Similarly a kiln or tiler is suggested at Sawley, making tiles for Sawley alone. The kiln at Wether Cote made tiles for Rievaulx and might have made tiles for Helmsley. The tiler that made the Plain Mosaic tiles for Newbattle may also have made non Plain Mosaic tiles for several sites (see further Chapter 13). Tiles for

Fountains and York Minster may have been produced together, and the tiliary at Meaux may have also produced tiles for Gisborough and Newminster. Perhaps the thinness of the tiles from Newminster were a response to the problems of transporting the material. The tiles from Thornton seem to have been products from several different tileries.

As always, the problems with interpreting the results of chemical analysis are (1) the assumptions that have to be made about the degree of variation within a single clay source, and (2) the assumptions made about the level of variation in clays over a geographical area. How likely is it, in other words, that clays with identical chemical fingerprints be found in different places, and over what distances? And to what extent could samples with different chemical fingerprints come from the same geographical location? Stringent experimental work is badly needed to investigate these matters further. However, the clear definition of the fabric clusters of Plain Mosaic tiles was persuasive and, taken with the evidence for kilns at Meaux and Wether Cote, were interpreted as showing a number of separate production sites or tileries. More detailed interpretation is difficult. In particular, rather than suggesting a tiliary for each group of clusters, it might be argued that every cluster represented the products of a different kiln site. This would have important implications since, instead of suggesting that tileries in Yorkshire were producing Plain Mosaic for places in Northumberland and Lothian, it would suggest that there was a separate kiln or tiliary for each of the sites using Plain Mosaic apart from Thornton.

The argument against this interpretation is that although the samples from Newminster and Newbattle do cluster separately, their chemical make-up is very similar to material made in Yorkshire. The assumption is that the distance between clay sources does correlate with differences in the chemical make-up of clays (i.e. the further away the clay sources, the more chemically distinct they will be). This assumption is supported to some extent by the correlation between the geographical location of the Yorkshire sites and the proximity of their fabric clusters. Rievaulx, Wether Cote and Helmsley are in the North Yorkshire Moors, Byland is on the lower land to the south, Fountains is north-west of York near the River Ure, a tributary of the Ouse. Meaux and Thornton are in the lowlands, south-east of York, and Sawley is on the other side of the Peninnes. If the spread of the samples from Rievaulx/Wether Cote and Meaux/North Grange are used as a measure of the likely definition of a single kiln site, it is clear that the spread of these samples is as great or greater than the difference between the clays of the far-flung sites and sites in Yorkshire. J.S. Richardson also suggested that the good quality white clay used on the Newbattle tiles was not available in Scotland (1929, 287). The lesser quality inlay on tiles from Melrose Abbey, Borders, almost certainly a local product, might be typical of local sources. The very

different geological history of Scotland and England raises the expectation that there would be marked differences between the fabrics of English material and that of any tiles made near Newbattle. The influence of the glacial deposition of clays is, however, as yet an unresolved question in fabric sourcing in Scotland and northern England. Some chemical comparison of the red and white clays of the Newbattle tiles with material being made in Scotland in the 13th century is one of many avenues for further research in this area. An initial comparison with pottery made in Lothian suggested that the fabrics were not similar, but this depended on comparing the results of two quite different analytical techniques (NAA and ICP). The interpretation of the ICP analysis carried out as part of this study is considered further in relation to the Inlaid and Usefleet Groups (see Chapters 12 and 13).

Treatment of tile sides: The treatment of the sides of particular shapes provides some of the best evidence for the same tilers making Plain Mosaic tiles for different sites. At Byland, Gisborough, Helmsley, Newbattle and Rievaulx two parallel lines were struck with a nail or the point of a knife on one side of a few examples of S.163 (Fig 10.21; one tile from Byland in the British Museum, BMC/2015, has three strikes). The sub-triangular tiles of S.163 were used in the M.65 roundel, laid around the outer edge of the outermost band of the roundel (between the diamond-shaped tiles of S.34/5). One side of S.163 is slightly curved to fit the circular shape of the roundel. The two strikes were always made on the slightly curved side of the tile and may have shown which way round the tiles should be set, avoiding the need for close examination when the tiles were laid. Alternatively they may have marked a heap of tiles as being of this shape. The practice of marking the curved side of some tiles in this way is unlikely to have been replicated in separate workshops. The two extant examples of this shape from Sawley did not have marks struck on the curved side. Only parts of the backs of the five tiles of this shape from Meaux were visible. One of these had a single strike down the curved side. There were no extant, loose examples of S.163 from York Minster, Fountains, Newminster or Thornton.

Similarly, the Plain Mosaic workshop used an unusual technique when making some straight-sided triangles. Instead of simply making a diagonal cut part way through the quarry of a square tile, which would then be split into two if triangles were needed, the Plain Mosaic tilers sometimes made two extra cuts right through the quarry at the outer edges (see Fig 10.22). The technique involved three strokes of a knife rather than one. This was found on some examples of S.43, 46, 47 and 48 and may have been intended to ensure that the corners of the triangles would not break when the quarry was split. Sites which definitely had Plain Mosaic tiles with these features included the abbeys of Byland, Fountains, Newbattle and Rievaulx,



Fig 10.21: Plain Mosaic, examples of S.163 with double strikes on the curved side

Gisborough Priory and Helmsley Castle. There were no examples among the small samples from Meaux, Thornton and Sawley.

Complex shapes were cut out individually using a knife (especially clear on S.62). On a convex curve, the tiles were trimmed in a series of small cuts, visible as a series of narrow planes along the curved side. Concave shapes were cut in one scooping motion with the tile held on edge, dragging the inclusions across the surface on some examples. Straight-sided Plain Mosaic tiles were also cut out in a single motion, perhaps with a knife, but the implement and method used is uncertain. The tile sides were slightly bevelled from top to bottom. The techniques used to cut out and shape the tiles tended to be consistent for individual shapes regardless of site.

Marking-out lines are rarely visible on the tiles, suggesting that they were followed accurately when the tiles were cut out. They are occasionally found where the marking-out line of an elaborate shape continued



Fig 10.22: Plain Mosaic detail: the bottom tile was made by cutting a lozenge-shaped tile part way through the quarry before firing and then splitting it in two ('scored and split'). The top tile was additionally cut right through the quarry at the edges, probably to prevent chipping

beyond the point where the cut finishes (for example continuing the line of the curve across S.241 from Meaux, or the diagonal across S.73 from Rievaulx; Fig 10.20). On the two unworn tiles of S.73 from Rievaulx in Figure 10.20 the imprint appears to be of a twisted strand. These lines were imprinted in the white clay, showing that the shapes were marked out after white clay had been applied to the body fabric.

Plain Mosaic tiles were fitted together very closely indeed when laid as pavements. Medieval mortar on the sides of Plain Mosaic tiles in the loose collections shows that the mortar only reached half or two-thirds of the way up the tile sides. The tops of the tiles would have had no visible mortar joint between them. Such closely fitted paving was achieved by cutting the tiles out carefully and accurately, ensuring consistent

The analysis of shapes suggested links between the following sites:

1. Byland, Rievaulx, Gisborough, Helmsley
2. Fountains, Newbattle
3. Meaux, Thornton
4. Sawley

Assemblages were grouped by tile depths as follows:

1. Byland, Gisborough, Helmsley, Newbattle and Rievaulx
2. Fountains, Meaux, Thornton, York Minster
3. Newminster
4. Sawley

Assemblages were grouped by similarities in glaze as follows:

1. Byland, Helmsley, York Minster
2. Fountains, Rievaulx
3. Meaux, Newbattle, Newminster
4. Gisborough, Thornton

Other similarities between assemblages were suggested by the possible use of the same design stamps at Rievaulx and Gisborough, and at Meaux, Newbattle and York Minster.

The various groupings of assemblages by individual characteristics had some overall consistency. If increasing variation in assemblages were an indication of the chronology of production, this might be summarised in the following way:

Group A: Byland, Helmsley, Gisborough and Rievaulx. The Gisborough tiles differed more than the other assemblages, particularly in glaze and decoration.

Group B: Fountains and Newbattle.

Group C: Meaux and several of the sites with small samples such as Newminster, Thornton and York Minster.

A summary of the dates of production of Plain Mosaic for individual sites is as follows (for discussion of dating, see further below):

Byland:	after 1177
Rievaulx:	c.1235
Fountains:	between 1226 and 1247
Helmsley Castle:	possibly at or after the consecration of the chapel in 1246
Meaux:	between 1249 and 1269
Newbattle:	at or after the dedication of the church in c.1233/4

There is at present no dating evidence for Gisborough, Newminster, Sawley, Thornton or York Minster.

It seems possible that the tiles in Groups A and B (perhaps excluding Gisborough) belonged to a first phase of Plain Mosaic manufacture, before 1250, and

those in Group C were made in the third quarter of the 13th century. While the same tilers or tile-making tradition is thought certain to have been in operation for Groups A and B, there were some differences in manufacturing techniques in Group C.

These links in manufacturing characteristics are not entirely reflected in the results of ICP fabric analysis, which grouped as follows:

1. Byland
2. Helmsley, Rievaulx, Wether Cote
3. Fountains, York Minster
4. Meaux, Thornton, Gisborough and Newminster
5. Sawley
6. Newbattle (with non Plain Mosaic tiles)

In particular the assemblage from Gisborough showed similarity in many manufacturing characteristics to Byland, Helmsley and Rievaulx, but was almost identical in fabric composition to tiles from Meaux. The Gisborough assemblage also differs from that of all other sites in having a much higher proportion of shaped tiles with inlaid or reverse inlaid decoration (Fig 10.18).

Dating

The dating of Plain Mosaic has been much discussed (see Walbran 1863, 129; Eames and Beaulah 1956, 276–7; Baker 1969, 34–40; Knight and Keen 1977, 71–2; Eames 1980, 1, 34 and note 43, 73; Norton 1986a, 247; 1986b, 268). For details of the dating for individual sites, see the relevant Site Gazetteer entries.

An early date is possible for the use of Plain Mosaic at Byland. The characteristics of the assemblage from this site are consistent with these tiles being made early in the sequence of this workshop, particularly in the range of shapes, with few unusual pieces, the most restricted decoration and limited colours, and perhaps in the use of clays which were not exploited for other sites. In addition, the stonework of the steps in the chancel, nave and south transept at Byland were designed with the tiles in mind, with the horizontal and vertical planes of the stonework rebated to take the tiles (Fig 27.6). This might suggest that the tiled floor followed soon after the construction of the building. Certainly the masons who cut the rebates in the steps for the various parts of the church knew the approximate dimensions of the tiles, which fit them well. Also, the roll moulding on the transept chapel steps is consistent with that on the pier bases of the main structure. However, in no case is any of the stonework cut for the tiles integral with the outer shell of the building and it is possible that the internal fittings of the church, including the tiled floor, were completed at a later date. The vital questions for dating the tiles at Byland are therefore (1) at what date was the east end of the church completed, and (2) how much time elapsed before the stone fixtures and fittings were in place?

Peers (1934) was of the opinion that the east end of the church was completed by 1200, with the west end constructed and the internal stonework installed between 1200 and 1225. However, more recent thinking has placed the building of the church at an earlier date (Fergusson 1975; 1984, 72–3; Hearn 1983; see also Harrison and Barker 1987, 149 and fn. 33). The chronicle written in 1197 by Abbot Philip attributed construction to Abbot Roger (1142–96), with 1177 given as the date for the final move of the monks to the site. Peter Fergusson (1984) has suggested three phases of building with the first from *c.*1160–70 and the second from 1170–77, by which time the east part of the church, including the easternmost bays of the nave, were completed (i.e. all the areas with the Plain Mosaic floor). It is thought that the remaining bays of the nave and the west facade were completed by 1190. If the tiled flooring formed part of the initial construction of the church, it would have been one of the last jobs to be done.

The earlier the date is set for the completion of the east end at Byland, the more controversial the argument becomes for the immediate construction of the stone fittings and tiled floor. This is because the Plain Mosaic tiles at Byland definitely include inlaid decoration on several examples (although probably not reverse inlay). A date for the use of inlaid decoration in the north of England before 1200 would precede dated examples in both southern England and continental Europe by some margin. Such a date would also be at least 25 years earlier than the likely manufacture of Plain Mosaic for other sites in the north-east. This would be inconsistent with the evidence for the same workshop making the tiles for Byland and several other sites in the region. It is notable that, although the tiles in the church at Byland were re-set in the 1920s and cannot, therefore, be taken to reflect their original siting, they are consistently built up against the main structure as would be expected if the tiled floor were an addition, rather than being flush with the base of piers and other stonework, as might be thought likely if this were the first floor. The stone flagging in the chapels of the north transept could also be interpreted as the vestiges of an earlier floor. In a recent plan showing the building phases at Byland Abbey, Stuart Harrison does not venture a date for the stone fittings in the transepts but gives the screening of the presbytery and choir a 13th-century date (1999, 32). This stonework is not integral with the tiles but might be seen as a phase of work with which the tiled floor was associated. Stuart Harrison also sees the nave chapels at Byland as of the 14th and 15th centuries, and differences in the layout of the Plain Mosaic tiles in this area could be consistent with a re-setting or re-use at that time.

On present evidence, then, the *terminus post quem* for the tiled floor at Byland is 1177 but, in light of the dating evidence discussed below for tiles at other sites thought to be made by the same workshop, a date in the earlier 13th century seems most likely. Analysis of the assemblage from Byland does, however, suggest that it was an early recipient – and possibly the first – of this type of paving.

Similar arrangements of stonework and tiles occur in the transept chapels at Rievaulx, and probably also at Fountains, although no tiles remain *in situ* in the steps at the latter. The tiled floors can be associated with phases of expansion at both these sites. At Rievaulx, the chapels were part of a programme of rebuilding that began in the mid 12th and continued into the 13th century and included the reconstruction and extension of the entire east end (see entry 74, Chapter 27: *Rievaulx Abbey* and, for the phases of tiled flooring at this site, Stopford 1999, 221–5). The completion date for extension of the east end of the church at Rievaulx is not precisely dated but thought to have been in the second quarter of the 13th century (Fergusson and Harrison 1999, 151–74).

At two sites the dating evidence is based on documentary records. At Fountains, a note in the *Narratio* or foundation history of the site refers to a ‘painted pavement’ being added to the ‘new work’ between 1220 and 1247 (for discussion of the *Narratio*, see entry 29, Chapter 27: *Fountains Abbey*). At Meaux, according to G.K. Beulah’s reading of the chronicle, the church floor was tiled between 1249 and 1269 (Bond 1867, II, 119; see entry 61, Chapter 27, *Meaux Abbey*). If these records did refer to pavements of ceramic floor tiles, it is very likely that the tiles were of the Plain Mosaic Group. There are no other tile groups in the assemblages from these two sites which, on typological grounds, are at all likely to date from this period. Also, Plain Mosaic tiles form, by a substantial margin, the largest part of the extant tile assemblages from Fountains, Meaux, Byland and Rievaulx. This is in line with the evidence for the huge scale of the Plain Mosaic paving schemes, which were far larger than any other medieval pavements in the study area. This type of tiling seems certain to have formed the major phase of ceramic paving at these sites. The completion of the large expanses of Plain Mosaic paving would have been a major achievement for the monasteries and would have made a dramatic visual impact in their churches – sufficiently so to be noteworthy in monastic records.

There is little dating evidence elsewhere. Rebuilding and extension of the east end of Thornton, a construction phase which Plain Mosaic may have been associated with at other sites, began in 1264. The documentation regarding paving at Thornton in the early 14th century is more likely to apply to one of the many other tile series found at that site (see entry 86, Chapter 27: *Thornton Abbey*). At Gisborough Priory, a later 13th-century date would also be suggested if the use of Plain Mosaic was coeval with the construction of the standing east end. Similarly, at Newbattle the association of Plain Mosaic with building work might suggest a date of *c.*1233/4. However, there is no archaeological evidence associating Plain Mosaic with any particular building or phase of construction at these sites. If the first use of Plain Mosaic in the chapel at Helmsley is accepted, these tiles are unlikely to date before the second quarter of the 13th century.

The keep, curtain wall and west tower at Helmsley were built in *c.*1200, with the chapel, consecrated in 1246, a later addition (Peers 1966, 13).

The overall date range for the production of the Plain Mosaic Group is thought to be from *c.*1220 to *c.*1270.

Tables 10.10–10.13. Plain Mosaic: the mosaic numbers and types of evidence for the occurrence of arrangements at each site.

Table 10.10: Borders/risers (Fig 10.1)

<i>Sites</i>	<i>Mosaic nos with variations and additions</i>	<i>Evidence other than tile shapes</i>
Byland	M.3	Re-set, widely used.
	M.4 borders and risers	Re-set, widely used.
	M.6	Re-set, S transept, N chapel; chapel 1 S retrochoir; presbytery (but smaller size here)
	M.7	Re-set, E presbytery aisle
	M.8	Re-set, S transept, S chapel
	M.15 risers	Re-set, S transept, S chapel
	M.15 border but with yellow tiles orientated the other way	Re-set, S transept
	M.24 but <i>c.</i> 105mm and as border	Re-set, S transept both chapels
	M.37 risers	Re-set, S transept step
	M.50	Re-set, presbytery N doorway
	M.61	Re-set, S transept, S chapel
	M.84	Re-set, S transept, N chapel
	M.87 but reversed colours	Re-set, presbytery
	M.94	Re-set, S transept, S chapel
	M.96 risers	Re-set, presbytery
M.97 risers	Re-set, nave and presbytery	
Fountains	M.3/M.4	Re-set, presbytery platform
	M.24	Re-set, presbytery platform
	M.84 or similar	Antiquarian drawing
	M.87	Excavation photo, N crossing aisle
	M.88	Re-set, presbytery platform
	M.93	Re-set, St Michael's chapel
	M.94	Re-set, S nave pier base
	M.99	Re-set, N nave pier base
	M.100	Re-set, presbytery platform
M.116	Antiquarian drawing	
Meaux	M.3	Excavation photo, N crossing aisle
	M.4	Excavation photo, N crossing aisle; all divider lanes found in nave
	Possibly M.93	Antiquarian record, choir
	M.61	Antiquarian record, S transept chapels
	Possibly M.87	Antiquarian sketch, choir
	M.90	None
	M.92	Excavation photo, presbytery
Newbattle	M.4	Tiles found together, N transept
	M.15	Tiles found together, N transept
Rievaulx	M.6	Re-set, chapel 2, N nave
	M.7 borders and risers	Re-set, S transept chapel; chapel 2 N nave
	M.8	Re-set, chapel 2, N nave
	M.15 risers	Re-set, N chapel, S transept
	M.19	Re-set, N chapel, S transept
	M.87 risers	Re-set, S transept, both chapels

Table 10.11: Continuous repeating blocks (Fig 10.2)

<i>Sites</i>	<i>Mosaic nos with variations and additions</i>	<i>Evidence other than tile shapes</i>
Byland	M.23	Re-set, S transept*; presbytery (but smaller size here)
	M.24	Re-set, chapel 1, S nave aisle
	M.36	Re-set, S transept, N chapel
	M.37	Re-set, S transept, both chapels
	M.46	Re-set, S transept, S chapel
	M.84	Re-set, chapel 2, S nave aisle
Fountains	M.24	Antiquarian drawing
	M.37	Re-set, presbytery platform
	M.47	Re-set, presbytery platform
	M.60	Re-set, presbytery platform
	M.95	Re-set, St Michael's chapel
	M.98	Re-set, pier base, S retrochoir
	M.104	Re-set, presbytery platform
M.115		Re-set, presbytery platform
Meaux	M.24	Excavation photo, N crossing aisle
	M.24	Antiquarian record, S crossing aisle; nave
	M.25	Antiquarian record, S crossing aisle; nave
	M.28	Excavation photo, N crossing aisle; antiquarian record, nave
	M.36	Antiquarian record, crossing
	M.38	Antiquarian record, monks' choir
	M48	None
Newbattle	M.88	Tiles found together, N transept
Rievaulx	M.11	Re-set, chapel 4 N aisle
	M.36	Re-set, chapel 2 S aisle; both chapels S transept
	M.91	Re-set, N chancel aisle
	M.98	Re-set, presbytery
Sawley	trellis c.112mm	Re-set, S transept chapel; N transept chapel

* This chequered arrangement using 100mm square tiles is shown in J.S. Richardson's drawing of the pavement in the south transept at Byland (Fig 27.4). The arrangement is located in front of the altar in the north chapel. Comparison with Fig 2.2 shows that either Richardson relied on very few tiles for this part of his drawing, or the drawing was made before the tiles were re-set

Table 10.12: Roundels (Figs 10.6–10.12)

<i>Sites</i>	<i>Mosaic nos with variations and additions</i>	<i>Evidence other than tile shapes</i>
Byland	M.65	Complete, re-set, S transept, N chapel
	M.65	Incomplete, re-set, NE chancel aisle
	M.65	Fragment, re-set, E chancel aisle
Meaux	M.65	Antiquarian record, crossing; west end nave
	Part of M.76	Tiles found together in pit in choir
	M.73	Antiquarian record, loose in presbytery and choir. Segment intact but not <i>in situ</i> , nave
	M.74	None; pieces of tile of reversed colours to M.73 in collections
	M.75	Antiquarian record, a few fragments intact, others loose but together at foot of presbytery step.
Newbattle	M.65	Incomplete, N transept
Rievaulx	M.65a	Fragment, re-set, S transept
Sawley	M.65b	Antiquarian record, centre chapel S transept
	M.65c	Antiquarian record, centre chapel N transept

Table 10.13: Repeating small squares (Fig 10.3)

<i>Sites</i>	<i>Mosaic nos</i>	<i>Evidence other than tile shapes</i>	
Byland	M.101	Re-set, both S transept chapels	
	M.103	Re-set, S transept N chapel	
	M.104	Re-set, S transept N chapel	
	M.105	Re-set, both S transept chapels	
	M.109	Re-set, S transept, N chapel	
	M.110	Re-set, S transept, between piers	
	M.111	Re-set, S transept, between piers	
	M.106	Re-set, E chancel aisle; N and S crossing aisles	
	M.112	Re-set, presbytery	
	M.108	Re-set, S transept, S chapel	
	M.113	Re-set, N and S transepts, between piers	
	Fountains	M.101	Antiquarian drawing
		M.102	Antiquarian drawing
Meaux	M.107	Excavation photo, N crossing aisle	
Rievaulx	M.101	Re-set, chapel 1 S aisle; chapel 2 N aisle	

Concordance

Table 10.14: Decorated tiles of the Plain Mosaic Group in the British Museum. From Meaux unless noted otherwise

BMD: British Museum design number; BMC: British Museum catalogue number in this and all similar tables

<i>Design no.</i>	<i>BMD</i>	<i>BMC</i>	<i>Design no.</i>	<i>BMD</i>	<i>BMC</i>
1.1	–	–	1.9	–	–
1.2	–	–	1.11	–	–
1.3	–	–	1.12	243	13,008–9
1.4	–	–	1.13	423–424	2105; 2997–3001; 12,372–5
1.5	–	–	1.14	–	–
1.6	1049	7648 (Gisborough)	1.15	–	–
1.7	234–242	2103; 13,134–6; 13,142–6; 13,153–8; 13,163–5; 13,452; 13,384–6	1.16	1081	6156 (Rievaulx)
1.8	244	2104; 2931–3; 13,387–91	1.17	1082	1743 (Fountains)
			1.18	–	–

11 Inferior quality Plain Mosaic (later 13th century)

One of the complications of the Meaux tile assemblage was that there were at least two qualities of mosaic tiling at this site (and possibly also at Thornton Abbey). The inferior tiles, discussed here, are interpreted as copies of Plain Mosaic made by a less highly skilled or trained workforce. Despite this, the inferior quality material was closely linked with the production and use of the good quality Plain Mosaic.

Tile Group 2 (Figs 11.1–11.2)

Sites: Meaux Abbey; possibly Thornton Abbey.

Sample and condition: Over 100 extant tiles in the Meaux assemblage were clearly identifiable as inferior quality mosaic.

Mosaic arrangements: Arrangements that may have been made up with inferior mosaic tiles include M.13, M.20, M.21, M.25, M.28, M.58, M.65, M.73, M.85. All have been surmised from loose tiles (for some examples see Fig 11.2) but the more complex shapes do suggest that the same or similar arrangements were made in both good and inferior quality mosaic.

Shapes, size: S.3, 16, 25, 27, 39, 48, 77, 80, 85, 87, 90–92, 107, 182/3, 184, 189, 192, 345, 349, 436, c.100mm squares. Inferior mosaic shapes were the same or similar to those of best quality mosaic. In the extant assemblage there are high numbers of small triangles, diamonds and rhomboids (such as S.48, S.39 and S.25). All have one or more scored and split sides, which contribute to their poor fit in mosaic arrangements. The range of depths was c.22–33mm, but with a high proportion of the tiles being thinner than their good quality counterparts.

Designs: Only two decorated tiles were assigned with certainty to the inferior Plain Mosaic Group (Fig 11.1, 2.1 and 2.2) but other possibilities include the counter relief examples of Group 3. These are discussed separately because they are not grouped together with great confidence, they survive in small numbers and because none is known to have been found *in situ* with other mosaic tiles. The links with Fountains and, possibly, Scarborough are also uncertain. However the similarity between designs 1.13 (good Plain Mosaic) and design 3.1 (Group 3) is marked (Fig 10.15 and Figs 11.3–11.4), and the poor quality of the slip and glaze on tiles of Group 3 is similar to that of the inferior mosaic tiles. G.K. Beulah thought that tiles of designs 1.13 and 1.15 had been used in the trellis arrangements (M.24, M.25).

Decoration: The lettering in designs 2.1–2.2 is at a lower level than the surrounding area of the tile and could have been made by scratching the slip coating away (*sgraffiato*), although scratch marks are not visible. The slip is buff coloured and the tiles fired dark brown, black, orange-yellow or yellow-brown.

Design stamps: Probably not used.

Nail holes: None.

Firing: Partly oxidised, cores and some upper surfaces reduced. Some slightly overfired.

Fabric: As best quality Plain Mosaic.

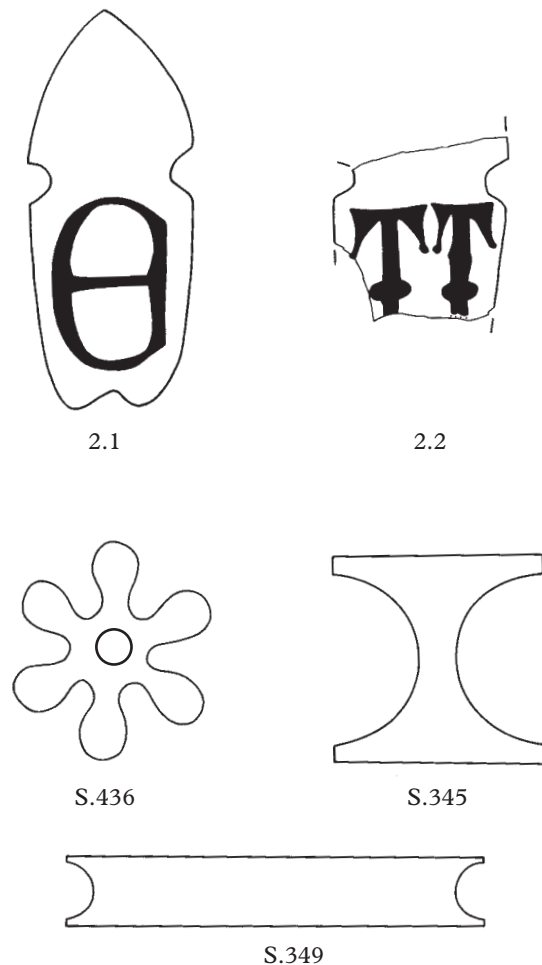


Fig 11.1: Group 2, Inferior Plain Mosaic, inscribed tiles and shapes not published in Eames 1980, 2. Scale 1:3. The inscribed tile 2.1 is a similar shape to, but smaller than, Plain Mosaic shape 87, used in the outer band of the M.73 roundel. The inscribed tiles 2.1 and 2.2 were probably used with other Inferior Plain Mosaic shapes in a poor quality but inscribed version of the M.73 roundel (cf Fig 10.12b)



Fig 11.2: Group 2, Inferior Plain Mosaic from Meaux Abbey: mosaic insert M.13 (top), M.20 (left) and M.85 (right). All were reconstructed by G.K. Beulah from loose tiles

Treatment of tile sides: The tiles fit together poorly. Curved sides are trimmed, perhaps with fewer cuts than good quality mosaic. The angle of bevel is inconsistent within individual tiles so that some sides of the tile may be bevelled from the upper surface in to the base, while others may be angled out from the top to the base. On straight-sided tiles, one or more of the tile sides have been scored and split. Marking out lines next to the edges of these tiles are often visible, showing that the marking out lines were not followed when the tiles were cut out.

Treatment of bases: The undersides of the tiles are sandy with one scooped key in the S.3 squares (c.25mm diameter and c.15mm deep).

Quality: As noted above, the tiles tend to be poorly and inaccurately cut out. The tilers also had problems with the slip and glaze. The slip does not always cover the surface of the tile properly, leaving the upper surface streaked yellow and olive. The glaze tends to be dull and opaque. A reaction of the slip and/or glaze has caused the surface to blister and separate on some examples.

Discussion and dating

The characteristics of the Inferior Plain Mosaic tiles show that they were made with less care and less skill than their counterparts in the Plain Mosaic Group. Although the inferior tiles imitate shapes and arrangements made in Plain Mosaic, with the added embellishment of lettering in a few cases, they were probably made by different people. However, the evidence for a close association, and similar date, in the manufacture and use of second-rate mosaic with high-quality tiles at Meaux is as follows. Both good and inferior Plain Mosaic were present among the few tiles definitely found at the North Grange kiln site. There is no contextual evidence for these finds and it is, of course, possible that the two grades of mosaic were made at North Grange but at different times. The use of tiles of both qualities together, however, is suggested by a collection of tiles of mixed types found by G.K. Beulah outside the doorway to the north transept (examples in both the English Heritage and the British Museum collections are marked '4A'; further examples were reburied after discovery). All the extant tiles are entirely unworn and there is no trace of mortar on them. It is clear that none

of them had been used in a floor. The majority of those kept were of inferior grade but there are at least six tiles of good quality Plain Mosaic. The assemblage includes blocks of scored but not split triangles or diamond shapes, tiles that had broken when being split into their component parts, tiles with accidental or unused marking out lines on the upper surface and tiles that had fused together during firing. It seems to be a collection of material rejected by the people laying the floor in the church, with both qualities of material apparently being dumped at the same time. If the inferior mosaic was made and used with the best quality mosaic at Meaux, the same dating (i.e. 1244–69) would apply.

Although the evidence for inferior quality mosaic depends on the assemblage from Meaux, it may not have been confined to this site. Among the small assemblage of mainly worn tiles from Thornton there are examples of thinner tiles, slightly overfired, with slip smeared on their sides. One example, fired dark brown, is blistered. There are also clear examples of good quality Plain Mosaic at Thornton, with a 2mm layer of white clay applied to the upper surface and with a clear yellow glaze.

Many of the tiles from Meaux in the British Museum collection were bought from G.K. Beulah in the 1950s. In a note in his handwriting accompanying some of these tiles (so presumably written before the sale), he suggested that the inferior material was more usually found towards the west end of the church. He became less sure of this at a later date, recalling instances of finds of inferior material in the east end of the church, and stressing how little had actually been found *in situ*.

Tile Group 3 (Figs 11.3–11.4)

As seen in Chapter 10, the good quality Plain Mosaic Group included some decorated tiles. It is possible that poor quality parallels of some of those designs were made for use with the inferior mosaic tiles. Group 3 consists of square tiles with counter relief decoration that may have been part of the Inferior Plain Mosaic Group.

Sites, sample and condition: The sites are listed in Table 11.1. All the tiles from Fountains were worn while the majority of those from Meaux were not worn,

Table 11.1: Sites, designs and numbers of tiles

	<i>Fountains Abbey</i>	<i>Meaux Abbey</i>	<i>Scarborough North Cliff</i>
Design 3.1	19	8	1*
Design 3.2	–	3	–
Design 3.3	–	2	–
Design 3.4	14	–	–
Design 3.5	–	1*	–

* Provenance uncertain, see Gazetteer entries for details

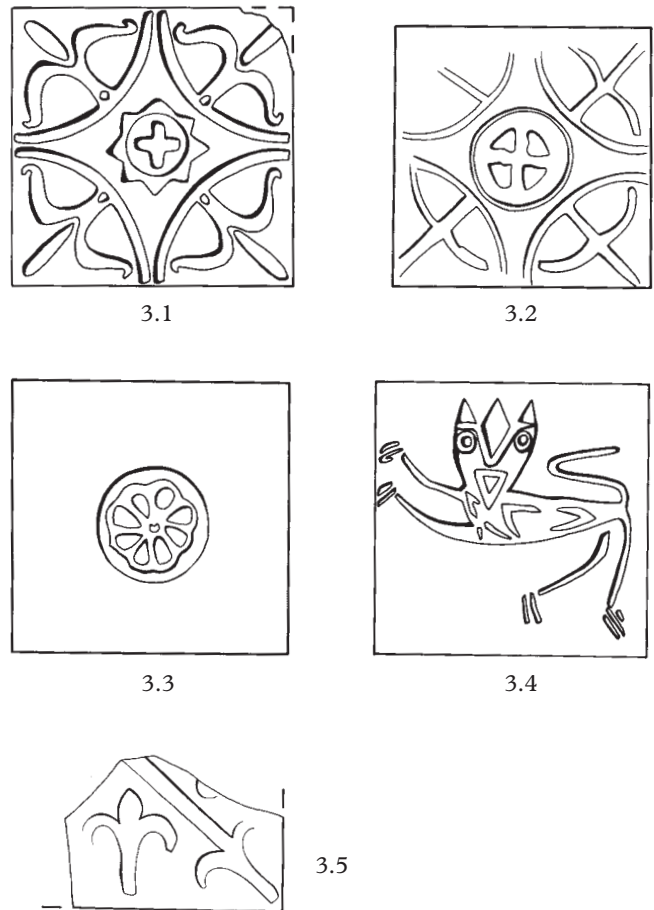


Fig 11.3: Group 3 designs, possibly Inferior Mosaic. Scale 1:3

making comparisons difficult. Forty-six of the fifty extant examples were fully recorded.

Mosaic arrangements: None.

Shape, size: Square, 100–111mm. Depth falls into two bands with tiles from Fountains and some of those from Meaux in the range 18–25mm, while others from Meaux and Scarborough were thicker, 29–35mm. Depth does not co-vary with design.

Designs: 3.1–3.5. An apparently similar design to 3.5 was found on two-colour tiles of the Decorated Mosaic Group (see Fig 14.1, design 7.124) but the Decorated Mosaic examples are of quite different manufacture.

Decoration: Probably all counter relief. Many were recorded as either counter relief or two-colour, stamped and slipped. But several of the less worn examples were definitely counter relief (2–3mm depression) while none was definitely two-colour. All examples of designs 3.3 and 3.4 were glazed over the body (i.e. without slip) to dark brown/black. It is possible that all examples of designs 3.1 and 3.4 had a slip coating since they fired to combinations of yellow, light brown and green/olive.

Design stamps: The same stamp was probably used on examples of design 3.1 from Fountains and Meaux. The stamps were poorly cut.

Nail holes: None.

Firing: Largely or completely reduced.

Fabric: As best quality mosaic.

Treatment of tile sides: Variable – vertical, slightly or steeply bevelled – not co-varying with design or site.

Treatment of bases: Sandy. Thirty-one examples have one scooped key, *c.*35–40 × 7–10mm. These are found on both the thin and thick tiles. Keys were not recorded on tiles of design 3.2, but there was no information for two of the three examples.

Quality: Twenty-five of the tiles were damaged (*c.* 50%), with most damage related to the glaze having reacted to form a lumpy or blistered, opaque paste over the upper surface. This is a high proportion, particularly as the sample included a large number of worn tiles.

Discussion

Some of the characteristics of this group were similar to decorated tiles of the Plain Mosaic series, particularly their keys, firing and tile size. Design 3.1 is also closely paralleled by Plain Mosaic design 1.13 (Fig 11.4). G.K. Beulah was certain that tiles of design 3.1 had been found on the kiln site at Meaux where the Plain Mosaic tiles were made (North Grange). Tiles of designs 3.1 and 3.4 at Fountains also had the same fabric description as many of the Plain Mosaic tiles at Fountains (there is little visual fabric information for Plain Mosaic at Meaux).

In other respects, the tiles of Group 3 had faults similar to the tiles of the Inferior Plain Mosaic Group. Many were affected by a severe reaction of the glaze. Although a similar reaction is known on some other medieval tiles, it is not common, and is thought to be a useful grouping characteristic for these tiles. The worn tiles of design 3.4 from Fountains might be seen as outliers, and the samples of design 3.2, 3.3 and 3.5 might be considered too small to assign to a group, but the tiles of design 3.1 at Fountains and Meaux are closely linked, having almost certainly been made with the same stamp and examples from both sites showing the full range of characteristics.

Group 3 could, therefore, be seen as the decorated tiles of the Inferior Plain Mosaic Group, in the same way as the designs 1.13 and 1.15 were used with the good quality Plain Mosaic. An unusual feature of design 3.1 is that examples have been found in which the design has been stamped several times, side by side, on a large slab of clay. A fragment from Meaux



Fig 11.4: Meaux Abbey, a ‘double’ tile of design 3.1, possibly a copy of the good quality design 1.13

(not extant) showed that design 3.1 had been stamped on it several (possibly nine) times. An unprovenanced example like this is extant in the Yorkshire Museum (Brook/130). Replicas of medieval examples of design 1.13 are re-set in the chapel at Newbattle (see entry 117, Chapter 27: *Newbattle Abbey*). These are extremely close copies of 1.13, made in resin, with several examples of the design on one piece. It is, however, uncertain that the replicas at Newbattle were based on multi-stamped medieval versions of 1.13.

The main problem with interpreting Group 3 as part of the Inferior Plain Mosaic Group is that shaped tiles of Inferior Plain Mosaic type have not been recognised at Fountains, although Plain Mosaic at Fountains did show the greatest variability of any site. Also, design 3.4 might be thought unlikely to date to the 13th century on stylistic grounds. The closest parallel found to this unusual design is a supposed depiction of an Indian god on a cauldron found in a peat bog in Gundestrup, North Jutland in 1891, thought to date to the 1st century BC or AD (Bersquist and Taylor 1987, 15, fig 6).

Dating

On typological grounds (particularly regarding the scooped keys cut into the tile bases and the reduced fabrics) the date of these tiles would be mid or late 13th century, perhaps made during the later stages of Plain Mosaic production. The only archaeological dating related to the re-use of tiles of design 3.1 and 3.4 in alterations and repairs carried out in the south presbytery aisle at Fountains during the abbacy of Marmaduke Huby, *i.e.* after *c.*1500 (see entry 29, Chapter 27: *Fountains Abbey*).

12 The Inlaid tile group and related material (mid or later 13th century)

Tile Group 4 (Figs 12.1–12.2)

Tile Group 4 is named after the inlaid technique used on the decorated tiles. The use of inlay was not restricted to this group (also being used on Plain Mosaic and on some Usefleet tiles) but it was relatively unusual among the tile groups of the region and was more consistently used on these tiles. Other features of the group include the clear, simple designs, the use of the same stamps at several sites and some manufacturing techniques reminiscent of Plain Mosaic, such as the scooped keys in the tile bases.

Sites, sample and condition: See Table 12.1 for the sites with Inlaid tiles and Figure 3.1 for their distribution. Inlaid tiles have almost certainly been found at St Mary's Abbey, York, but identifying the actual tiles is difficult. The examples from the Bedern Chapel, York, could have been re-used at this site in medieval times.

In two instances, Inlaid Group designs were found on unusual pieces of clay. At Helmsley Castle, fragments of a portion of rolled out but uncut clay, stamped at least twice with design 4.7, were among material found during the clearance excavations. These fragments are interpreted as a trial piece. Their pres-

Table 12.1: Sites, designs and numbers of tiles

Sites	Designs	Nos of tiles
Byland Abbey	4.2, 4.7, 4.12	12
Gisborough Priory	4.2, 4.4, 4.7	24
Rievaulx Abbey	4.1–4.16	124
Whitby Abbey	4.2, 4.12	4
York, St Mary's Abbey	4.2	3
York, site of Bedern Chapel	4.2, 4.7	8
Helmsley Castle (trial piece)	4.7	1
[?Wether Cote kiln site	4.12	1]
Total		169

ence at Helmsley Castle is surprising as no finished tiles of the Inlaid Group, or any other tile series apart from Plain Mosaic, are extant from this site. The second unusual piece is a half tile stamped with design 4.12, found at Wether Cote (a Plain Mosaic kiln site). This tile is difficult to categorise because, apart from the design, its physical characteristics are those of the Usefleet series. The impression made by stamps of simple and symmetrical designs, such as design 4.12, are difficult to identify with certainty, but as far as can be ascertained the Wether Cote tile was decorated



Fig 12.1: Rievaulx Abbey, tiles of the Inlaid Group re-set in the infirmary kitchen. Comparison between the 1964 photograph by Whittle (left; reproduced by kind permission of The Dalesman) with that photographed in 1988 (right) shows that the tiles have been re-set but also that their condition has deteriorated and much of the decoration has been lost

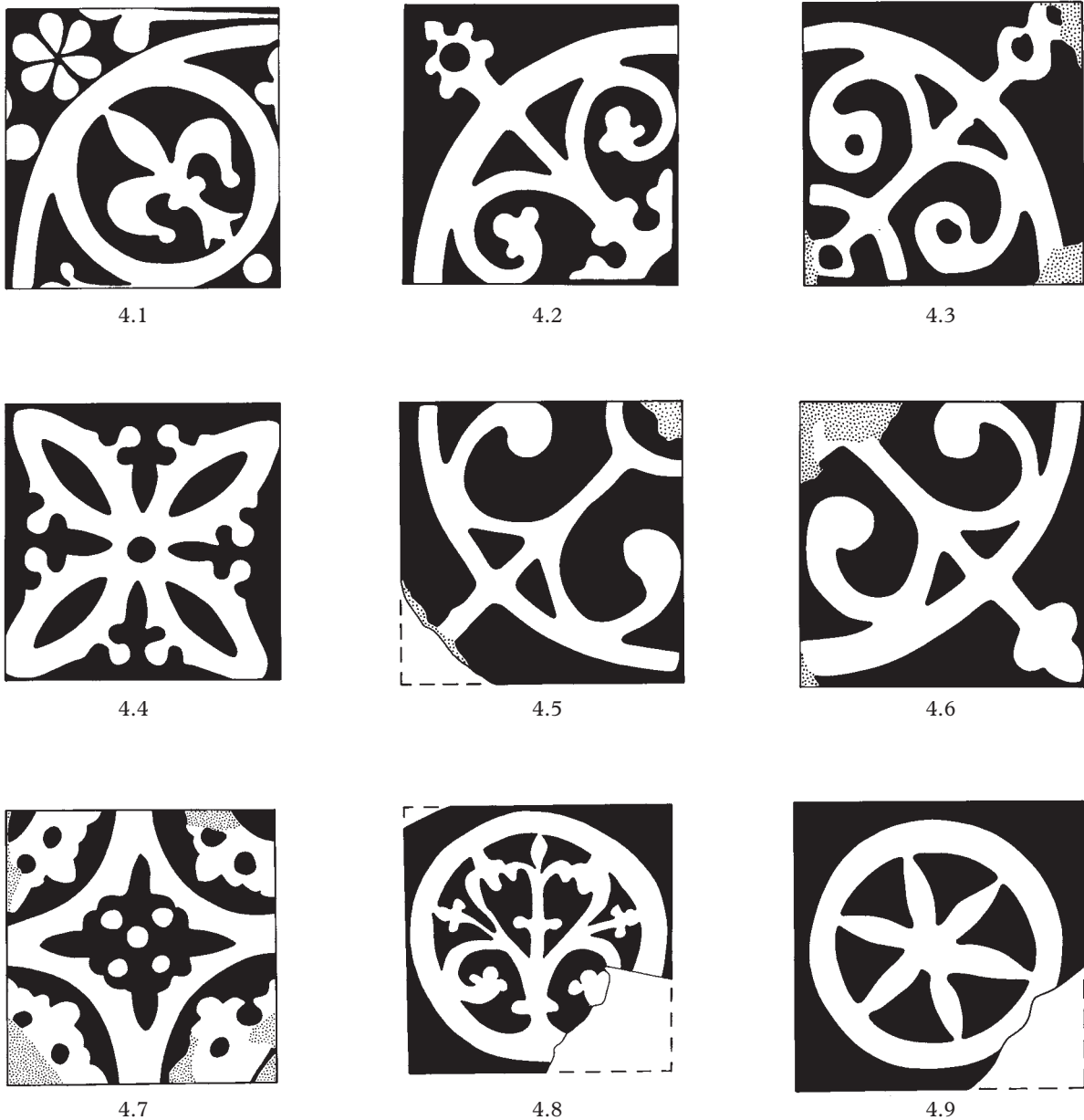


Fig 12.2: (above and facing) Inlaid Group design drawings. Scale 1:3

using the same design stamp as other tiles of design 4.12 in the Inlaid Group. However, the upper surface measurement is 163mm, rather than the *c.*125mm of the Inlaid tiles, and ICP analysis links it with Plain Mosaic and Usefleet tiles, and away from the other Inlaid tiles. See further below, Chapter 13: *Usefleet Group*.

Several of the Inlaid Group designs are only represented in the extant assemblage by a few tiles and sometimes these are re-set on site. Designs 4.3, 4.5, 4.9–4.11, 4.13 and 4.14 are each represented by four tiles or fewer.

In addition to the decorated tiles in the loose collection listed in Table 12.1, there are 16 plain or worn tiles of this group from Byland and *c.*100 from Rievaulx. There are *c.*50 other examples re-set in the church and chapter house at Rievaulx, and an area of

less than 1m × 1.5m re-set in what is thought to have been a 15th-century cupboard in the infirmary kitchen at Rievaulx (Fig 12.1).

The condition of the tiles is generally good with 96% of the Inlaid Group having at least one complete upper surface dimension. All fragments (10) are graded B or C, which means that they are larger than a quarter tile in size. 52% of loose tiles are graded wear 1 or 2 (i.e. unworn or only slightly worn) and 19% are wear grade 4 (very worn).

Shape, size: Square, measuring about 125mm across (117–128mm), with a depth of 31–40mm. Some examples were scored and split diagonally into two triangles (eleven examples), or cut at right-angles into two rectangles (two examples). One example of design 4.7 at Gisborough has been scored and split on two



4.10



4.11



4.12



4.13



4.14



4.15



4.16

sides, showing that the tile was divided into four triangles. The fragmentary piece of rolled out but uncut clay from Helmsley Castle, with impressions of design 4.7, was anomalous in both shape and size, with a depth of 26mm.

Designs: The sixteen designs (4.1–4.16; Fig 12.2) are simple geometric and foliate patterns that would have looked effective in a floor. The patterns were either complete on one tile or made by setting four tiles of the same design together.

The small number of more widely distributed tiles were decorated with the best drawn and most skilfully cut stamps of the group and were probably all made by the same hand (designs 4.2, 4.4, 4.7 and 4.13). Many of the other designs are copies, possibly for use as replacements or as additional stamps. The most copied

designs were 4.2 and 4.13 (designs 4.3, 4.5 and 4.6 are similar to design 4.2; 4.13 and 4.14 are similar to design 4.12). Further, poorer quality, copies of the Inlaid designs are discussed separately below (*Inlaid Copies*, Group 5).

Decoration: The tiles were decorated with white clay, the depth of which varied widely, from 0.5 to 5mm. 40% were thought to be inlaid, 27% were thought to be slipped, with 33% unknown. Of the unworn examples, 14% had white clay slightly raised above the level of the body fabric. There is no correlation between decorative technique and either design or site. The piece of uncut clay from Helmsley Castle, with impressions of design 4.7, was also anomalous in decorative technique, with the whole surface having been coated in slip and glazed in the manner of counter relief decoration.

The white clay used on these tiles appears very white, exactly like that found on many Plain Mosaic tiles. Almost all the tiles are glazed yellow and brown where the fabric is oxidized and greenish-yellow and olive where it is reduced. The reduction of the body fabric to a grey colour is not entirely responsible for the greenish colour of the glaze, however, and in one or two cases, the glaze has fired to a strong green. In a few others there are green patches or specks. The plain tiles of the group were glazed yellow or greenish-yellow and dark green or black.

Design stamps: The same stamps were used on tiles at different sites. Tiles of design 4.2 at Rievaulx, Gisborough, Whitby and those which could be from St Mary's Abbey, York, were all made using the same stamp, as were tiles of design 4.12 at Rievaulx, Whitby and Byland. At Rievaulx and Gisborough, tiles of design 4.7 were probably made with the same stamp. Tiles of design 4.4 vary slightly. Examples at Rievaulx have a central dot, while the tiles of this design from Gisborough may not (see Knight and Keen 1977, fig 20) but all extant examples are fragments or triangles in which the centre of the design is unclear.

Tiles of design 4.2 were found at all sites. Two stamps of this design were in use but one of these became cracked. Tiles at Byland were made before it cracked. Tiles at Rievaulx, Gisborough and those possibly from St Mary's Abbey, York, were made both before and after the stamp was cracked. The one example from Whitby was made with a cracked stamp.

Nail holes: None.

Firing: All examples were partly reduced during firing, having oxidised lower surfaces and sides but with the core and much of the upper surface reduced.

Fabric: The results of ICP analysis on Inlaid tiles are given in Table 12.2 (see further, Fig A.1b and Appendix 1).

The tiles of all sites except Gisborough grouped closely together in clusters 1, 2 and 3. These clusters are interpreted as representing the output of a single production site but using different batches of clay. The Inlaid Group tiles from Gisborough cluster separately (cluster 10). They have the same chemical fingerprint as Plain Mosaic tiles from Gisborough and Meaux. For the Plain Mosaic tiles, this cluster is interpreted as representing the output of the kiln site at Meaux (see Chapter 10, pp.120–1). However no Inlaid Group tiles are known to have been found at the Meaux kiln site and tiles of this type are not known to have been used at Meaux Abbey. It seems that either there is simply an absence of evidence for Inlaid tile production at Meaux, or the clay sources used at Meaux were also used for Inlaid tile production at another kiln site, or some of the assumptions made in interpreting the ICP analysis are incorrect.

Table 12.2: Results of ICP-AES analysis of Inlaid Group tiles

ICP cluster	Tile no.	Design no.	Site
1	896	4.12	Byland
1	901	4.2	Byland
1	902	4.2	Byland
1	903	4.2	Byland
1	57	4.2	Rievaulx
1	529	4.7	Rievaulx
1	583	4.12	Rievaulx
1	852	4.12	Whitby
1	853	4.12	Whitby
2	851	4.2	Whitby
3	1054	4.2	St Mary's, York
3	1060	4.2	St Mary's, York
10	715	4.2	Gisborough
10	716	4.7	Gisborough
10	717	4.2	Gisborough
10	718	4.4	Gisborough
17	929	4.12	Wether Cote kiln

More generally, however, there is a clear contrast in the results of ICP for the Plain Mosaic and Inlaid Group tiles. Plain Mosaic was made at a number of different kilns, which served individual abbeys in some cases, while Inlaid Group tiles at several sites were made of the same clay (certainly Byland, Rievaulx and Whitby). These Inlaid tiles are therefore interpreted as the products of the same tiliary. Tiles thought to be provenanced to St Mary's Abbey, York, may also have been from this production site.

The tile from Wether Cote, with Usefleet characteristics but an Inlaid Group design, was assigned to Cluster 17 with all the other tiles from the Wether Cote kiln site (see further, *Usefleet Group*).

Visual fabric recording assigned 63% of the tiles to fabric code 1 (see Chapter 9). A few tiles were recorded as fabric codes 2, 3, 5 and 6.

Treatment of tile sides: The sides of 73% of Inlaid tiles were slightly angled down to the base, while 26% had vertical sides. The corners of three of the eleven extant triangular tiles (from Byland and Gisborough) had been cut right through when the surface was scored. This unusual technique was also found on Plain Mosaic tiles.

Treatment of bases: The undersides of the tiles were sandy and 55% had a single key (20–30mm in diameter and 10mm deep) scooped out of their bases, just like square tiles of the Plain Mosaic series.

Quality: The tiles appear solid and well made but 20% were recorded as faulted during manufacture in some respect. Damage categories included cracked fabric, inlay fallen out, glaze flaked off and undifferentiated glaze colour over the body fabric and white clay.

Concordance

Table 12.3: Tiles of the Inlaid Group in the British Museum

All tiles are from Rievaulx except BMC/1327 of design 4.7 which is from Byland

<i>Design no.</i>	<i>BMD</i>	<i>BMC</i>	<i>Design no.</i>	<i>BMD</i>	<i>BMC</i>
4.1	2261	6068–6070	4.5	2624	6087–6088
4.2	2627	6079–6086	4.6	2625	6089
4.3	2626	6076	4.7	2236	1327
4.4	2237	6094	4.15	2063	6065–6067

Discussion

Common features of the tiles are their size, designs/stamps, inlaid decoration, keyed bases, greenish glaze, firing and fabrics. Although all tiles in the group do not have all the characteristic features, several features are found on most examples. There is some correlation between the tiles that do not have keys (26%) and tiles which may be slip decorated rather than inlaid (37% of the total and 80% of those without keys). There is a further correlation between the tiles without keys and cracking of the tile body fabric (all ten of these examples were without keys).

The same stamps were used to decorate tiles at different sites (Rievaulx, Gisborough, Whitby and St Mary's, York). Sites with tiles stamped with both cracked and uncracked stamps are likely to have been supplied not only from the same source but also with tiles made over the same period of time. These very close links in manufacture are supported by the results of ICP analysis which showed that in several cases the tiles were made using the same clay (Byland, Rievaulx, Whitby). The ICP results suggest that the Gisborough tiles were made using clays already exploited to make Plain Mosaic tiles for Gisborough and Meaux. As the Gisborough tiles were made with the same stamps as the other sites and shared the same range of manufacturing characteristics they seem certain to have been made by the same tilers. It would appear that more than one tiler was used. The Usefleet quarry with the Inlaid design on it at the Wether Cote kiln site might suggest either that Inlaid tiles were also produced here, or that Inlaid design stamps were re-used by the Usefleet tilers. The uncut piece of clay from Helmsley Castle, which was stamped more than once with design 4.7 and slipped and glazed before firing, was interpreted as a trial piece of counter relief decoration. Counter relief decoration is a characteristic of some tiles of the Usefleet Group and, less convincingly, of the Inlaid Copies (Group 5, see further below).

Similarities in several aspects of the manufacture of Inlaid and Plain Mosaic tiles may indicate some links or continuity with Plain Mosaic production.

Dating

There is no independent dating evidence for the Inlaid Group. The tiles were used at some sites with large-scale

schemes of Plain Mosaic paving. At Rievaulx, where a few examples are re-set in what might be near their original locations, they are in the nave chapels. If this were seen as subsequent to paving the east end of the church, it would suggest that the Inlaid tiles were made after the Plain Mosaic tiles. Plain Mosaic at Rievaulx is dated *c.*1235. Similarities in the manufacture of Inlaid and Plain Mosaic tiles might indicate that manufacture of the Inlaid tiles was coeval with some Plain Mosaic tiles, or else that not much time had elapsed between the end of Plain Mosaic production and the manufacture of the Inlaid tiles.

On typological grounds the use of inlay on tiles in the north of England would traditionally be given a date after the mid 13th century, perhaps in the third quarter of the 13th century. It was thought the technique was introduced into southern England from France, with royal usage an important factor in this process, before spreading to other areas (see further Chapter 8). However, the use of the inlaid technique in Plain Mosaic pavements in the north shows that there was a separate source of knowledge and inspiration in this region. The dating of the Inlaid Group remains highly speculative but might be *c.*1250.

Tile Group 5: copies of the Inlaid tile group (Figs 12.3–12.4)

The tiles of Group 5 were only found at Rievaulx and included a number of poorly cut parallels of Inlaid Group designs (Fig 12.3). They were variously decorated in counter or two-colour and the craftsmanship was poor. However, the distinction between fringe examples of the Inlaid Group proper and the Inlaid Copies is blurred. Another way of grouping these tiles would be to draw a distinction between the best quality Inlaid examples, which were distributed to both Rievaulx and other sites, and the tiles of both groups that were only found at Rievaulx.

Sites, sample and condition: Rievaulx was the only site with Inlaid Copies. In addition to the 17 examples in the loose collection listed in Table 12.4, there are two example of design 5.4 re-set in the nave chapels in Rievaulx Abbey church (Fig 12.4). Fourteen of the tiles in the loose collection were worn and three were fragments.

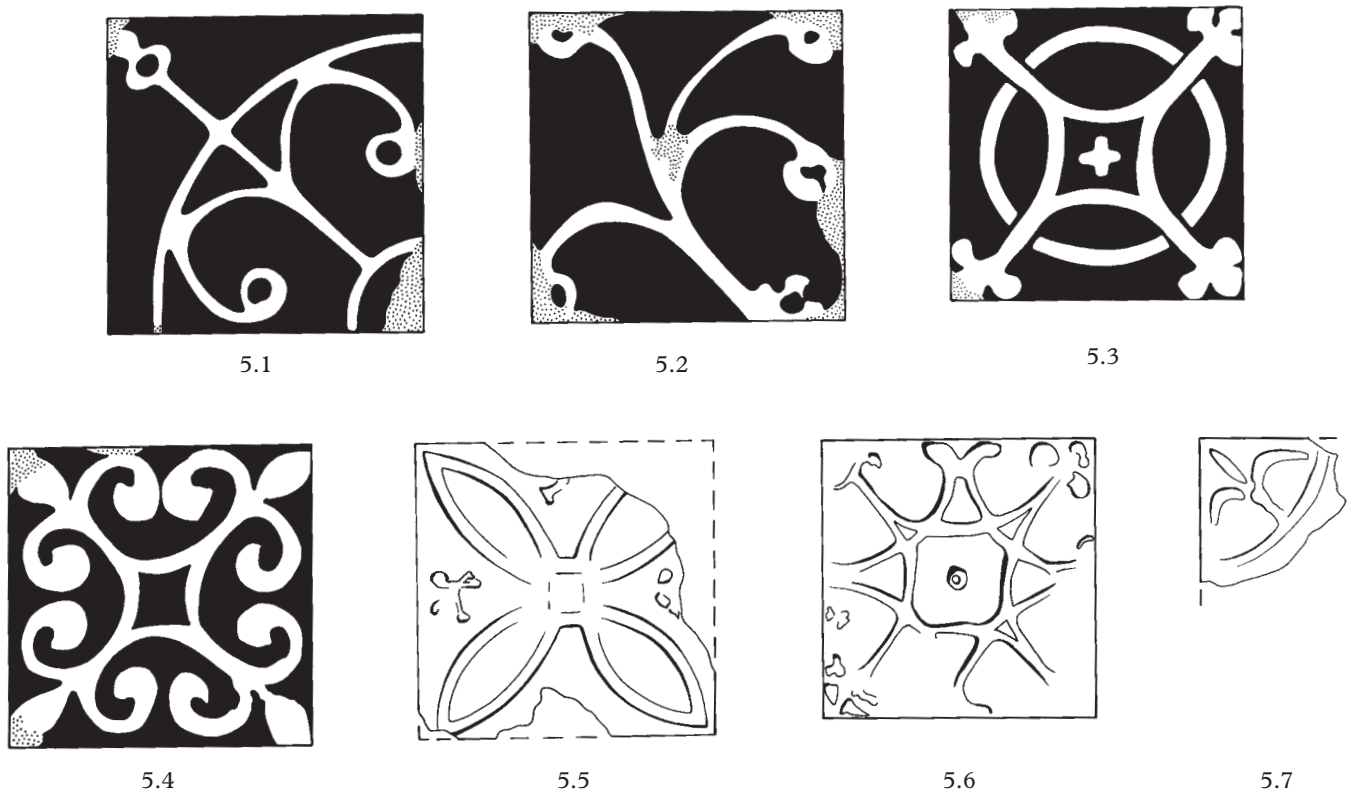


Fig 12.3: Inlaid Copies Group design drawings. Scale 1:3

Table 12.4: Inlaid Copies from Rievaulx and their design parallels

Nos of tiles	Inlaid Copies designs	Inlaid Group design parallels
4	5.1	4.2, 4.3
3	5.2	4.10
4	5.3	–
2	5.4	4.12, 4.14
2	5.5	4.4
2	5.6	–
1	5.7	–

Shape, size: Squares, 116–128mm, depth 31–43mm, with one triangle scored and split on two sides.

Designs: The seven designs, and their parallels in the Inlaid Group, are listed in Table 12.4. Design 1.16, found at Rievaulx and Wether Cote kiln site and discussed with the Plain Mosaic Group in Chapter 10, might be a further example of the Inlaid Copies Group.

Design stamps: All the stamps seemed to be the work of the same, relatively unskilled, hand. The stamps were only tentatively impressed on to the quarries (impressions up to 1mm deep).

Decoration: It was unclear what type of decoration was intended on some of the worn tiles. The slight impression made by the stamps was similar to that



Fig 12.4: Rievaulx Abbey: Inlaid Copy Group, design 5.4 re-set in the east chapel on the south side of the nave

used for two-colour, stamped and slipped, tiles but in at least some cases the slip was applied over the whole upper surface, as for a counter relief tile. The design drawings show the most likely form of decoration for each design (Fig 12.3). All the counter relief tiles were coated with slip (there are no extant dark examples). The slip or inlay on the two-colour tiles was up to 1mm deep. Most of the tiles were glazed olive-yellow but one stamped and slipped example, design 5.4, was dark brown and yellow (shown in Fig 12.4).

Nail holes: None.

Firing: Largely reduced.

Fabric: Seven examples of fabric code 2 and one example of fabric 6 (see Chapter 9 for fabric codes).

Treatment of tile sides: Vertical (twelve tiles) or slightly bevelled (three tiles).

Treatment of bases: Sandy. One scooped key 20–15mm diameter × 20–15mm deep in centre of base. Three examples were not keyed.

Quality: In some cases the design was partly invisible, not because the tile was worn but because the impression made by the stamp was too slight.

Discussion

Apart from the poor quality stamps and variable decorative techniques, these tiles were similar to those of

the Inlaid Group and paralleled some of the Inlaid Group designs. A less competent artist and technician may have made them as copies.

Dating

There was no independent dating evidence for this group. Stylistically and typologically they would be dated to the mid or later 13th century.

Concordance

Table 12.5: Tiles of the Inlaid Copies Group from Rievaulx in the British Museum

<i>Design no.</i>	<i>BMD</i>	<i>BMC</i>
5.3	2429	6160
5.6	2491	6180

13 The Usefleet tile group, c.1300

Tile Group 6 (Figs 13.1–13.6)

The Usefleet Group (Tile Group 6) takes its name from a poorly executed inscription on some of the tiles, read as a contracted form of the name JOHANNES USEFLEET (design 6.1 and possibly 6.3; Fig 13.1). The tiles are large, usually square, with clear, well-rendered designs. During their time in use, several of the design stamps were altered or repaired.

Sites, sample and condition: The majority of the 315 extant Usefleet tiles in loose collections were found at Rievaulx Abbey but, as shown in Table 13.1, small numbers are provenanced to other sites in the study area. Sites with Usefleet tiles are plotted in Figure 3.1. In addition to the tiles listed in Table 13.1, an antiquarian record suggests that a fragment of either design 6.9 or 6.10 was found at Wether Cote kiln site. Also from Wether Cote was a tile of Inlaid design 4.12 with all the characteristics of a Usefleet tile except that it was decorated using an Inlaid Group design. The other uncertainly assigned pieces are a single tile of design 6.21 and the fragment of design 6.22, both from Rievaulx.

In addition to the loose collections, about 100 decorated and plain Usefleet tiles are re-set at Rievaulx, in the choir, crossing, north transept, the chapels on the north side of the nave, against the rood screen and in the chapter house (Figs 27.30–27.31). Apart from a small fragment of design 6.13 in the British Museum,

tiles of designs 6.13 and 6.14 are only represented among the material re-set at this site (Fig 13.2). An example of design 6.15 from Rievaulx is re-set with Plain Mosaic in the Tuscan Temple, Duncombe Park (see entry 75, Chapter 27: *Rievaulx Terrace*).

Approximately half of the extant tiles were fragments, with only ten fully recorded tiles having two complete upper surface dimensions. However, 60% of fragments were half-tile size or larger. The three fragments from the Paradise Estate, Scarborough, could have been either design 6.1 or 6.2. Sixty per cent of the sample was of wear grades 1 or 2 (i.e. unworn). Examples from St Mary's Abbey, York, were particularly worn.

Shape, size: Mostly square, with only two triangular examples of the square-tile designs 6.1 and 6.11 and two purpose-made rectangular designs (6.19 and 6.20). Their complete dimensions were:

Squares/triangles:	156–173mm (c.165mm)
Rectangles design 6.19:	168–173 × 59–68mm.
Rectangles design 6.20:	113–119mm × 53–57mm.
Depth of all tiles:	28–45mm.

Designs: The 20 designs, plus the two further possibilities 6.21 and 6.22, are drawn in Figure 13.3. The Inlaid Group design 4.12, thought to have been

Table 13.1: Sites, designs and numbers of tiles

Design no.	Byland	Scarborough	Rievaulx	Wether Cote	Whitby	St Mary's, York
6.1		3 (or design 6.2)	7	1	1	
6.2	1		42			4
6.3			3			
6.4	6		16			
6.5			3			
6.6			2			
6.7				3		
6.8			1			
6.9			48			3
6.10	2		16		1	
6.11			3			
6.12			3			
6.13			1			
6.14			re-set only			
6.15			60		9	
6.16			8			
6.17			11			
6.18			14			
6.19			34			
6.20			6			
?6.21			1			
?6.22			1			
?4.12				1		



Fig 13.1: Tiles of the Usefleet Group at Rievaulx Abbey, design 6.1 with the John Usefleet inscription (IONS USEFT) carved the right way round on the stamp and so reversed on the tiles



Fig 13.2: Tiles of the Usefleet Group at Rievaulx Abbey: designs 6.13 (centre left) and 6.14. The tile of 6.14 at top right is decorated in counter-relief

re-used by the Usefleet tilers is illustrated in Chapter 12, Figure 12.2. Usefleet designs were either complete on one tile or made by setting four tiles of the same pattern together. The rectangular designs, 6.19 and 6.20, were continuous repeats. The inscription on design 6.1, thought to be a contracted form of the name JOHANNES USEFLEET, provides the dating for the group (Fig 13.1; see further below). The inscription had been carved the right way round on the stamp and therefore appeared in reverse on the tile.

The reading of a similar inscription on design 6.3, this time the right way round, is less clear but might be the same name. The other inscriptions (AVE MARIA and AVE MARIA G' on designs 6.9 and 6.10) are the right way round and much more confidently executed. Several of the Usefleet Group designs can be divided into two sets, with one more elaborate and the other a slightly simpler version of the designs (for example compare designs 6.9 and 6.10; 6.11 and 6.12; 6.13 and 6.14; 6.3 and 6.4) but no further distinction was identified in terms of their manufacture or distribution.

Design stamps: The same stamps were used on tiles from different sites (for example on tiles of design 6.10 at Byland, Rievaulx and Whitby; those of design 6.9 at St Mary's Abbey and Rievaulx; and those of design 6.2 at St Mary's Abbey, Rievaulx and Wether Cote). The fact that the lettering of design 6.1 is back to front suggested that some kind of stamp was used to make this design. The cracks that developed across the stamps of designs 6.2, 6.10 and 6.12 suggested that the stamps were made of wood. This much was straightforward enough. However, there were several unusual features about the design stamps of the Usefleet tiles. There were marked similarities between parts of several designs within the group, so that in a number of cases it might be thought that designs were made using the same stamps, except for differences in one or two motifs. Design 6.2 was identical to design 6.1 apart from the inscription. Design 6.5 was identical to design 6.6 except for the central rosette. Design 6.4 apparently occurred with two different centrepieces (6.4 and 6.8). In other cases, as noted above, there were two stamps of similar designs, where one seemed to be a simpler, less skilful, copy of the other. In addition, the high level of competence and artistry apparent in most of the stamp cutting, including designs 6.9 and 6.10 with the AVE MARIA inscriptions, contrasted with the poor quality of the inscriptions on designs 6.1 and 6.3. Apart from the inscriptions, the stamps of 6.1 and 6.3 were well cut. Finally, some of the designs were found with circular indents in the tile surface, in areas of the design coated with white clay (designs 6.3 and 6.4). These indents were therefore made before the slip and glaze were added, and were probably part of the design stamp.

Tracings of the stamps of designs 6.1 and 6.2 showed them to be identical, except the inscription in design 6.1 was absent in design 6.2. Usually where a design occurs with and without a motif, but is otherwise identical, it is assumed that the same stamp was used but that the motif broke or was chiselled off the wooden stamp at some point. It is possible that this was what happened here. One reason for removing the inscription from design 6.1 could have been that it was accidentally reversed on the finished tile. Alternatively, the inscription might have been added separately using a small stamp. However, its placement on the tile was identical on two extant examples. This means it is



6.1



6.2



6.3



6.4



6.5



6.6



6.7



6.8

Fig 13.3: (above, facing and p.144) Usefleet Group design drawings. Scale 1:3

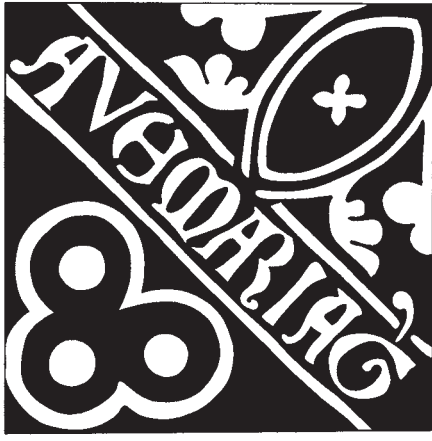
more likely that it was part of the same stamp. The use of the same stamp, but with the inscription removed, is consistent with the fact that the crack in the stamp was found on examples of design 6.2 and not on examples of 6.1. It must have occurred after the inscription was removed.

The central rosette of designs 6.1 and 6.2 could also have been made using a small stamp. This was supported by the fact that the crack appears on two

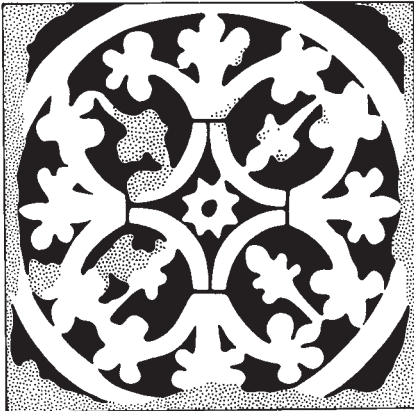
sides of the border around the rosette, but not across the rosette itself. Again, however, the placement of the rosette in relation to the rest of the stamp was always the same, suggesting that the rosette was part of the rest of the stamp. This was particularly clear in the case of this motif as there is a slight gap between two of the petals of the rosette and this appeared in the same place on every tile. In consequence, no plausible explanation can be offered for the fact that the crack in the



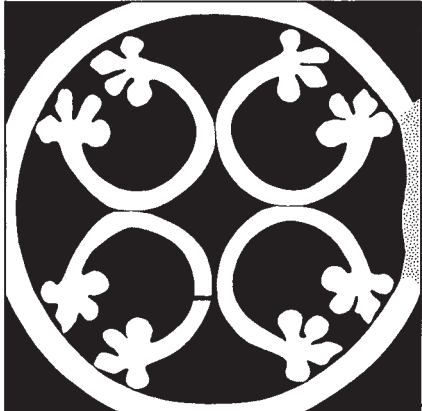
6.9



6.10



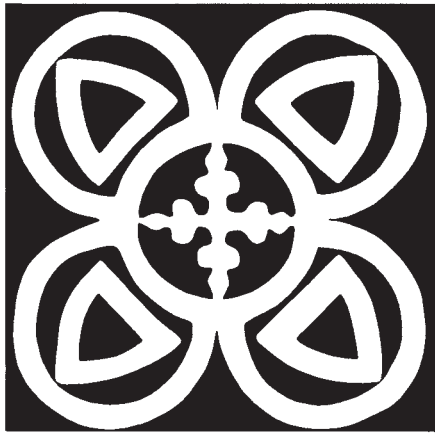
6.11



6.12



6.13



6.14



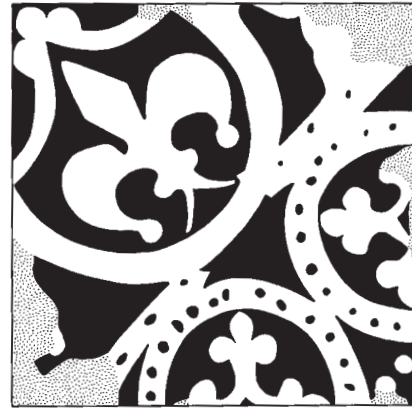
6.15



6.16



6.17



6.18



6.19



6.20



6.21



6.22

Fig 13.3 (cont'd): Usefleet Group design drawings. Scale 1:3. (Design 6.15 reproduced by courtesy of the Trustees of the British Museum)

ellipse around the rosette does not run across the rosette as well.

Small stamps were used in other cases among the Usefleet tiles. Tracings of the stamps of design 6.5 on tiles from Rievaulx in both the British Museum and English Heritage collections showed that the stamps were identical, apart from the absence of the central rosette on design 6.6. In this case, however, the tracings of two tiles of design 6.5 showed that the placement and orientation of the rosette differed each time. Design 6.5 was, therefore, made up using two stamps, that of design 6.6 plus a small stamp of the rosette design.

The indents in designs 6.3 and 6.4 were probably made by rivets of some kind, hammered into the raised parts of wooden stamps, to hold the stamp together. The rivet or nail-head was then an extra dent in the quarry surface and, where tiles were slip decorated, remained lower than the rest of the surface (Fig 13.4). It seems that an effort was being made to keep stamps in use when they were breaking up. The number of rivets varied on examples of the same design, apparently made with the same stamp, suggesting that the repairs continued over a period of time.

The stamps of designs 6.3 and 6.4 were similar in many respects. The base point of the designs differed,



Fig 13.4: Usefleet Group, indents on tiles of designs 6.4 and 6.8 suggest that rivets were used to hold the design stamp together. The design stamp of 6.8 (top right) could have been cut down from that of 6.4 (left)

and several details of design 6.3 were missing in design 6.4, including the inscription, the motif below the central container and some foliate details. The container was also slightly smaller and less well executed on design 6.4. It is possible that the stamp of design 6.3 was cut down to make design 6.4 but the differences between the two designs may be enough to suggest that two different stamps were in use. Also, if the indents were accepted as resulting from repairs to hold the stamp together, they would suggest that two separate stamps were used. If the stamp of design 6.4 was cut down from that of 6.3, all the indents on 6.3 (one above and one below the container) would already exist and be visible on design 6.4. Some extant fragments of design 6.4 definitely had no indent below the central container motif. Although two stamps are likely in this case, it should be noted that comparisons between fragments in different collections are difficult to make, particularly where several similar designs are involved. It is possible that a stamp of design 6.3 was altered to make further tiles but that there was also another stamp, a close copy, in use.

Further alterations to design 6.4 were suggested by a single fragment in the British Museum collection (BMC/5478, BMD/2671, design 6.8), which appeared identical to design 6.4 except that the central container motif was much further reduced (Fig 13.4). The exact replication and placement of the elements of the design would suggest that this was a cut-down version of the stamp of design 6.4. However, the copying of designs 6.3 and 6.4 seems to have been so close that a further very close copy cannot be ruled out. Further finds and study of the various assemblages would be needed to clarify the adaptation and use of different stamps and the sequence of manufacture of these tiles.

Decoration: All but three Usefleet tiles were slip decorated or inlaid. The depth of white clay varied (0.5–2.0mm), with 60% having less than 1mm white

clay. It was often impossible to tell whether a slip or inlay was used. In a dozen cases the white clay was recorded as slightly raised, perhaps implying that it was inlaid. However, in ten cases the white clay was smeared, suggesting that a liquid slip was used. Designs on the other three tiles (designs 6.10 and 6.13) were in counter relief with a slip coating over the whole surface. Designs 6.10 and 6.13 were also found as two-colour tiles.

The glaze over the slip fired yellow (73%) or olive (17%) or, rarely, orange (2%). The glaze over the body fabric fired olive or green (44%), brown (23%) or dark brown/black (23%).

Nail holes: None.

Firing: Most Usefleet tiles were partly reduced during firing. The record shows that 73% of tiles were largely or partly reduced but this is likely to be an under-estimate since a large proportion of the tiles recorded as oxidised were fragments.

Fabric: 77% of the tiles were of visual fabric code 1 (see Chapter 9 for fabric descriptions). A few tiles were recorded as fabrics 2, 3, 5 and 6. Cracks in the fabric of 5% of tiles suggested that the clay was poorly mixed. The large number of fragments making up the assemblage was probably partly a result of this weakness.

As shown in Table 13.2, 14 Usefleet tiles were included in the ICP fabric analysis (see further Appendix 1 and Fig A.1c. See also Chapters 10 and 12 for interpretation of the results in relation to the Plain Mosaic and Inlaid Groups).

The small sample of Usefleet tiles were spread over eight different fabric clusters but these clusters were all in the same 'quarter' of the plot, i.e. all the Usefleet tiles analysed had a fabric which fell into one of the two broad compositional divisions identified, and they were all in clusters that have been interpreted as belonging to two specific production centres. One production site was identified as at Wether Cote (clusters 14, 16, 17, 18 and 19), the other was in an unknown location where tiles of the Inlaid Group were also produced, and possibly where Plain Mosaic tiles were made for Newbattle Abbey in Scotland (clusters 1, 2, 3, 21).

In general, the tiles from Wether Cote, Rievaulx and Whitby occurred in the Wether Cote production zone, while tiles from Byland and St Mary's occurred in the other production zone (except one Usefleet tile from Rievaulx, which was assigned to cluster 1). The single Usefleet tile from Whitby (tile no. 858) that clustered with material made at Wether Cote might, geologically, be interpreted more loosely as part of a North Yorkshire Moors zone. The tiles did not, therefore, cluster by site, apart perhaps for those from St Mary's, York, which were confined to clusters 3 and 21. However, over-interpretation is a danger with such small numbers of tiles.

Table 13.2: Usefleet tiles in the ICP analysis

ICP cluster	Tile no.	Site
1	890	Byland
1	447	Rievaulx
2	891	Byland
3	1055	St Mary's, York
3	1056	St Mary's, York
3	1058	St Mary's, York
14	865	Whitby
16	375	Rievaulx
17	676	Rievaulx
17	929	Wether Cote
17	931	Wether Cote
17	858	Whitby
19	855	Whitby
21	1057	St Mary's, York

Treatment of tile sides: 68% of Usefleet tiles had vertical sides, the rest being slightly bevelled. The two triangular tiles were not scored and split but, like the rectangular tiles, were cut out before firing. Three fragments had a fine line scored along one or more edges of the upper surface (2–10mm from tile edges, up to 3mm deep and a hair's breadth), perhaps marking-out lines for cutting out the quarries (tile nos 406 and 412 and BMC/5451; Fig 13.5). Surprisingly, the lines were over the white clay, though under the glaze. This would suggest that blocks of clay were stamped and slipped with several designs before cutting out.

Treatment of bases: All tiles had sand on their undersides. A proportion, 11%, had a single scooped key in the centre of the base (diameter 20–30mm, depth 10–15mm).

Quality: The tiles were generally well made with 15% recorded as damaged during manufacture. The smearing of the decoration on some tiles and the cracked body fabric (apparent on two of the tiles of 6.15 in Figure 13.6) were the main faults. Other damage categories were over-firing and poor differentiation of the glaze on the white clay and body fabric.

Discussion

The strong links in the physical characteristics of the tiles and the use of the same design stamps at different sites showed that the tiles were part of the same production group. The small sample size from sites other than Rievaulx did make comparison between sites difficult. However, no differences in manufacture were apparent, with the same range of features present on tiles from all sites.

The methods of decoration and adaptation of the stamps of the group are not yet fully understood,



Fig 13.5: Usefleet tile of design 6.9 showing a fine line scored along the edge of the quarry. This was made after the white clay had been applied. It is possible that these tiles were cut out from a large slab of clay after they had been stamped

particularly in relation to the stamps with and without the John Usefleet inscriptions (design 61/6.2 and design 6.3/6.4). It is clear from repairs and adaptations that every effort was made to keep the Usefleet design stamps in usable condition. It is possible that they remained in use for some considerable time, or that they were re-used with adaptations some time after they had initially been made.

The stamps with cracks and repairs used at more than one site might indicate the order in which the various sites were supplied. The crack in the stamp of design 6.10 did not appear on the Whitby tile of this design, while both cracked and uncracked examples were found at Rievaulx. The only complete example of this design at Byland was made with the cracked stamp. The Whitby tiles must, therefore, have been made before those at Byland.

The sequence of Byland and Rievaulx tiles was unclear. In some cases it seemed that the Byland tiles of design 6.4 had less indents than the Rievaulx examples, and might therefore have been earlier (unlike the tile of design 6.10, which might be thought later). However, the variations occurred on fragments from both Byland and Rievaulx and no consistent sequence could be discerned. The indents seemed to be slighter or fainter on the Byland than the Rievaulx tiles and it is possible that they were not always visible. Perhaps Rievaulx was being supplied both before and after Byland. No great reliance should be put on these comparisons. The small sample



Fig 13.6: *Rievaulx, Usefleet Group tiles of design 6.15*

sizes suggested that several of the assemblages might be more variable than initially appeared to be the case.

The appearance of design 6.1 at Whitby as well as Rievaulx (and at the production site, Wether Cote), showed that the Usefleet inscription was not restricted to use in one location.

Dating

On stylistic and typological grounds the Usefleet tiles would be dated to the later 13th century, and some

motifs popular in southern England at that period were found on tiles of the group. The only other indication of date was provided by the inscription on design 6.1. IONS USEFT was interpreted as referring to Sir John or Johannes de Usefleet (also variously spelt Ousefleet, Ouseflet, Ousflet, Useflet or Usflet) who died in *c.*1304 (see further Chapter 3). Stylistically, the Usefleet designs would be old-fashioned in the early 14th century. However this might be explained by the evidence for repairs and alterations to the stamps, showing that they remained in use for a long time, or were taken back into use at a later date.

Concordance

Table 13.3: Tiles of the Usefleet Group in the British Museum

All tiles were from Rievaulx except BMC/441 and BMC/1666–1671 (designs 6.2, 6.4 and 6.10), which were from Byland. The drawing of BMD/2673 should in fact show a fragment with only one outside edge

<i>Design</i>	<i>BMD</i>	<i>BMC</i>	<i>Design</i>	<i>BMD</i>	<i>BMC</i>
6.1	1448	6177–8*	6.11	2502	5427
6.2	2669	1666; 5462–5474	6.13	3062	6181*
6.4	2670	1667–1671; 5476–5477; 5479–5482	6.15	2648	5422–5426
6.5	2672	5475	6.16	2673	5483
6.8	2671	5478	6.17	1885	6137–6138
6.9	1434	5436–5461	6.18	2724	6139–6141
6.10	1435	441; 5428–35	6.19	1262	6142–6150

* small fragments.

14 The Decorated Mosaic tile group, c.1300

Tile Group 7 (Figs 14.1–14.15)

Much of the evidence for Tile Group 7 comes from antiquarian records, in particular drawings of ceramic paving discovered at Jervaulx in c.1807 (Figs 14.2–14.6, 14.10–14.11, 14.13). These records are discussed in detail in entry 52, Chapter 27: *Jervaulx*, where a comparison is also made between them and the extant tiles from this site. Most of the floor tiles and the original drawings of the paving uncovered in the church at Jervaulx are now lost. Copies of those drawings, attempting to reconstruct the tiles at full size, were made before 1845 by John Ward, a knowledgeable local enthusiast. Ward's drawings are now in the Yorkshire Museum. A selection of Ward's work, largely unaltered but not to scale, was published by Henry Shaw in 1858. Other important antiquarian records for this group include Beulah's design drawings of tiles (also now lost) from Watton Priory. The loss of the tiles but survival of the drawings means that there is a strong emphasis on design and size/shape in the following analysis.

The Decorated Mosaic Group included the largest number of designs of any of the tile groups, with both shaped and straight-sided tiles having two-colour decoration in most cases. Some of the designs are letters of the alphabet. The main types of Decorated Mosaic tiles are:

- **shaped tiles** used to form large roundels with the decoration weaving between concentric bands of tiles (some shaped letter tiles were also used in the roundels; Fig 14.1a–c).

- straight-sided **letter tiles** (Fig 14.1d–f):
Large squares c.85mm
Small squares c.43mm
Rectangles c.89×63mm
- **square tiles** of three sizes (Fig 14.1g–i):
Small c.75mm
Large c.145mm
Medium c.112mm

Sites, sample and condition

The sites either known or thought to have had Decorated Mosaic tiles are listed in Table 14.1 and plotted in Figure 3.2. The counts of different types of Decorated Mosaic tiles given in Table 14.1 were based on the numbers of extant tiles for each site but, where viable records exist, they also include the numbers of tiles recorded but now lost. Lost tiles include the Westgate House pavement in Louth, many examples from Watton Priory, including all shaped tiles, some of those from Kirkstall Abbey, Burnham Church and all but two from Winthorpe Hall. Two of the sites listed in Table 14.1 are outside the study area. Reedham Church lies c.20km south-west of Norwich, Norfolk, and Dornoch Cathedral is in Sutherland, on the north-east coast of Scotland. Provenance and other details for these two sites are given at the end of Chapter 27.

Table 14.1: Sites and sample sizes

(the tiles are not necessarily extant – see Chapter 27 for assemblage details)

Site	Shaped tiles	Square tiles			Letter tiles			Other (Rect)	Total
		Lge	Med	Sm	Lge	Rect	Sm		
Kirkstall Abbey	296	–	447	3	9	–	11	1	769
Jervaulx Abbey	111	15	239	2**	–	–	–	–	367
Watton Priory	?7	–	74	3/4	8	6	–	1	95
Thornton Abbey*	?10	–	79	1	–	–	–	–	89
Scarborough Castle	9	1	13	1	–	–	–	–	24
Kirkham Priory*	–	–	21	–	–	1	–	–	22
Burnham Church*	–	–	37	–	–	–	–	–	37
Winthorpe Hall	–	–	22	–	–	–	–	–	22
Reedham Church	–	–	12	–	–	–	–	–	12
Habrough Manor	–	–	3	–	–	–	–	–	3
Beverley, Eastgate	–	–	1	–	–	–	–	–	1
[?Durham	–	–	1	–	–	–	–	–	1]
[?Dornoch Cathedral	–	–	1	–	–	–	–	–	1]
[?Louth	–	–	–	–	–	–	–	–	0]

* Counts for these sites included plain medium-sized square tiles.

** In addition there are small square tiles re-set in the hotel porch at Jervaulx and in St Oswald's church at Fulford, York. The tiles in the hotel porch included a decorated example of design 7.76.

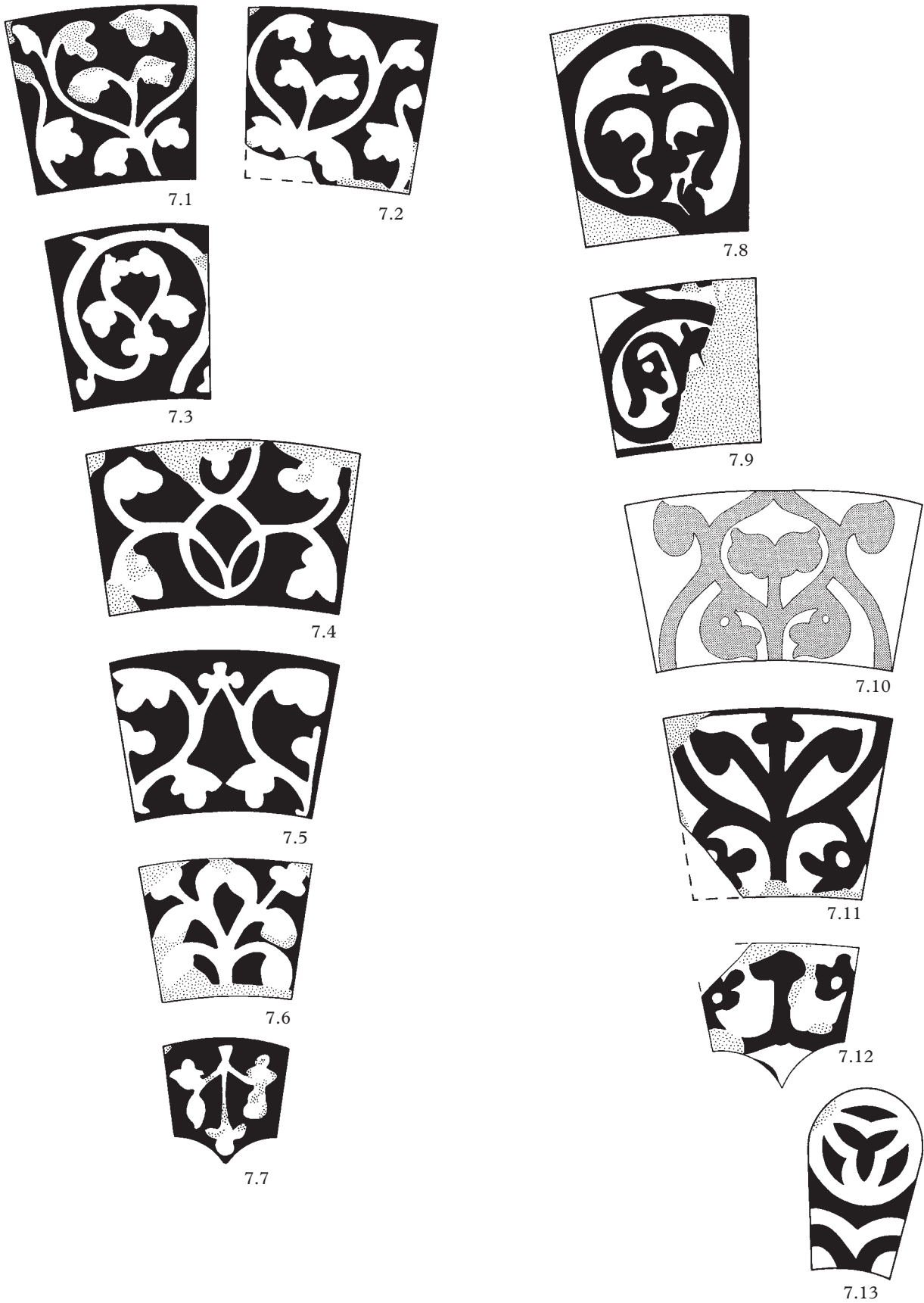


Fig 14.1a: Decorated Mosaic Group design drawings of the 'RS' roundel (left) and 'EC' roundel (right). Scale 1:3. See Figs 14.2 and 14.4 for the antiquarian record of these roundels

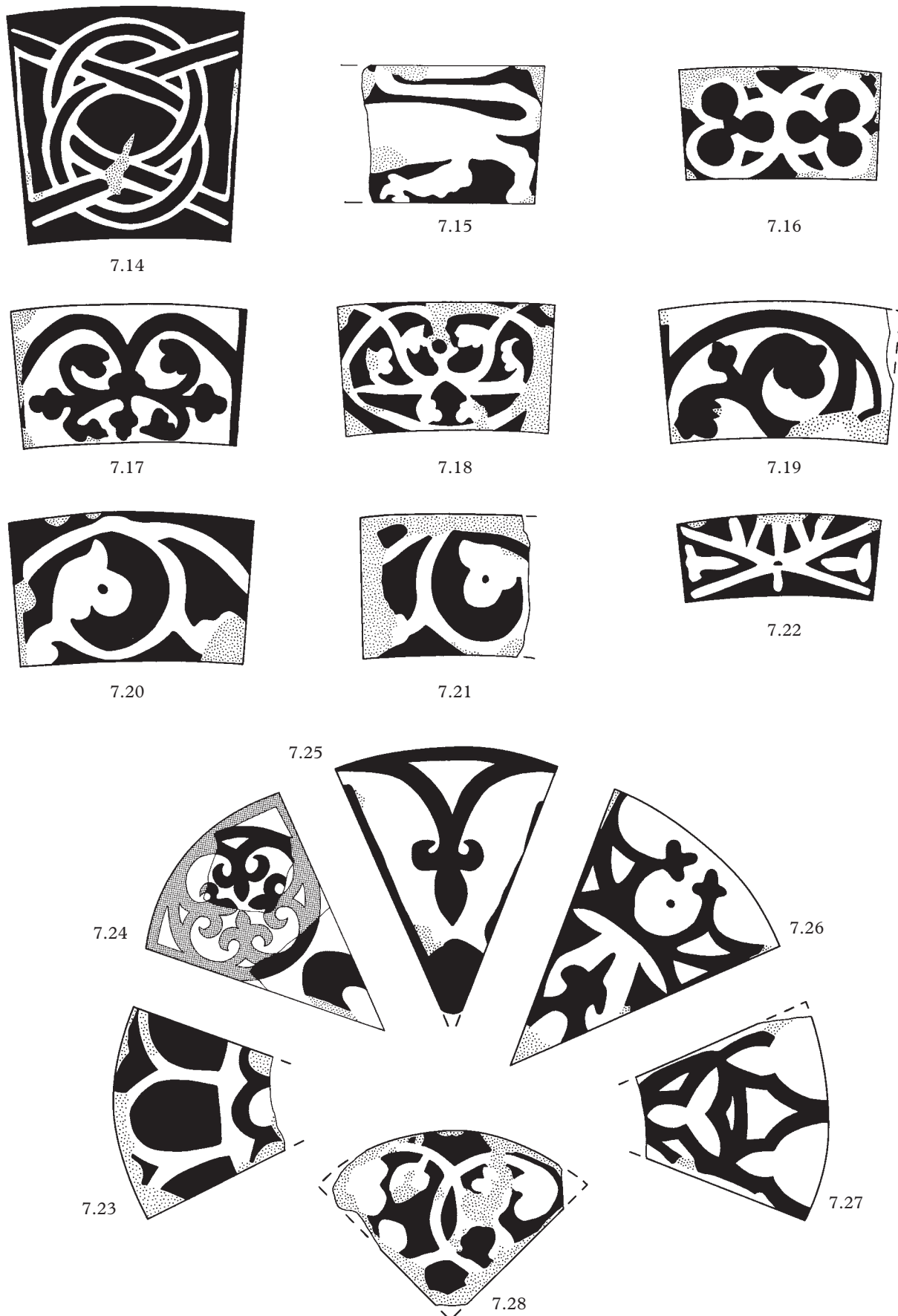


Fig 14.1b: Decorated Mosaic Group design drawings of other roundel designs. These are interchangeable elements of outer bands, centrepieces or corner (spandrel) motifs. Design 7.18 is the only unworn extant piece that could belong to Ward and Shaw's small roundel. Scale 1:3

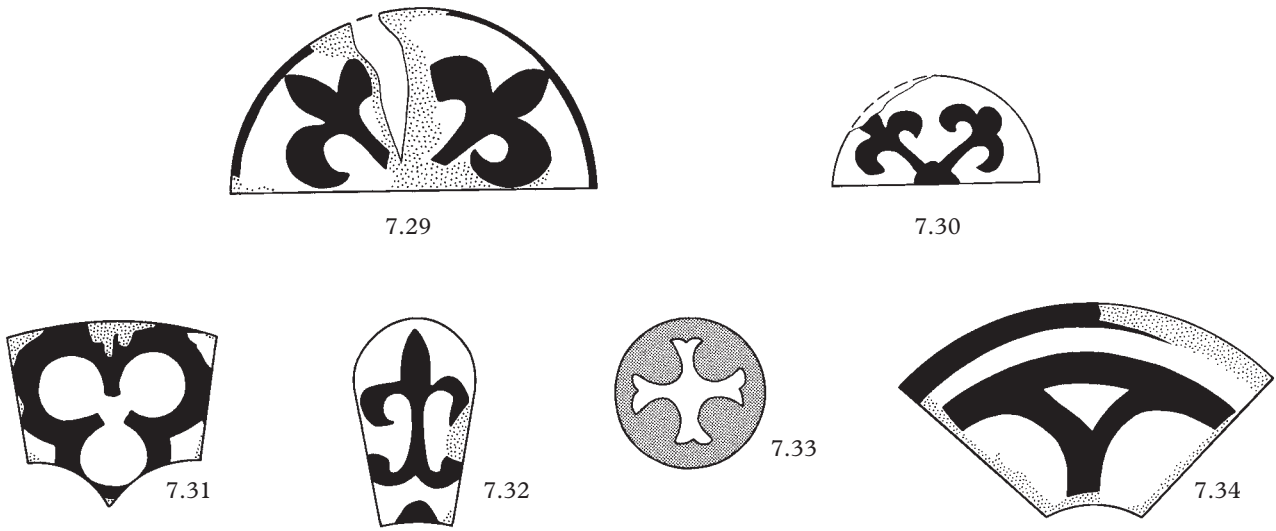


Fig 14.1b (cont'd): Decorated Mosaic Group design drawings of other roundel designs. These are interchangeable elements of outer bands, centrepieces or corner (spandrel) motifs. Scale 1:3

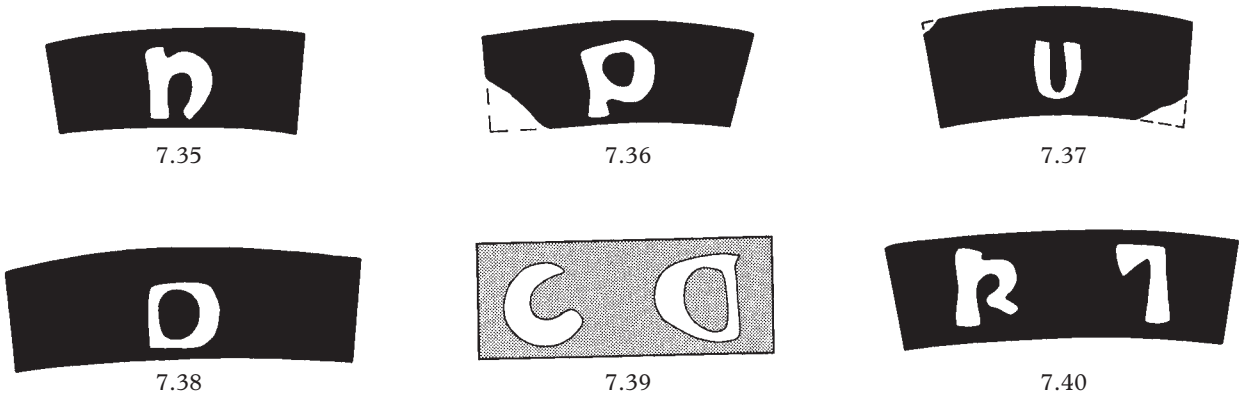


Fig 14.1c: Decorated Mosaic Group, shaped letter tiles for use in roundels. Design 7.39 was recorded by an antiquarian but is thought likely to have had curved sides. Scale 1:3

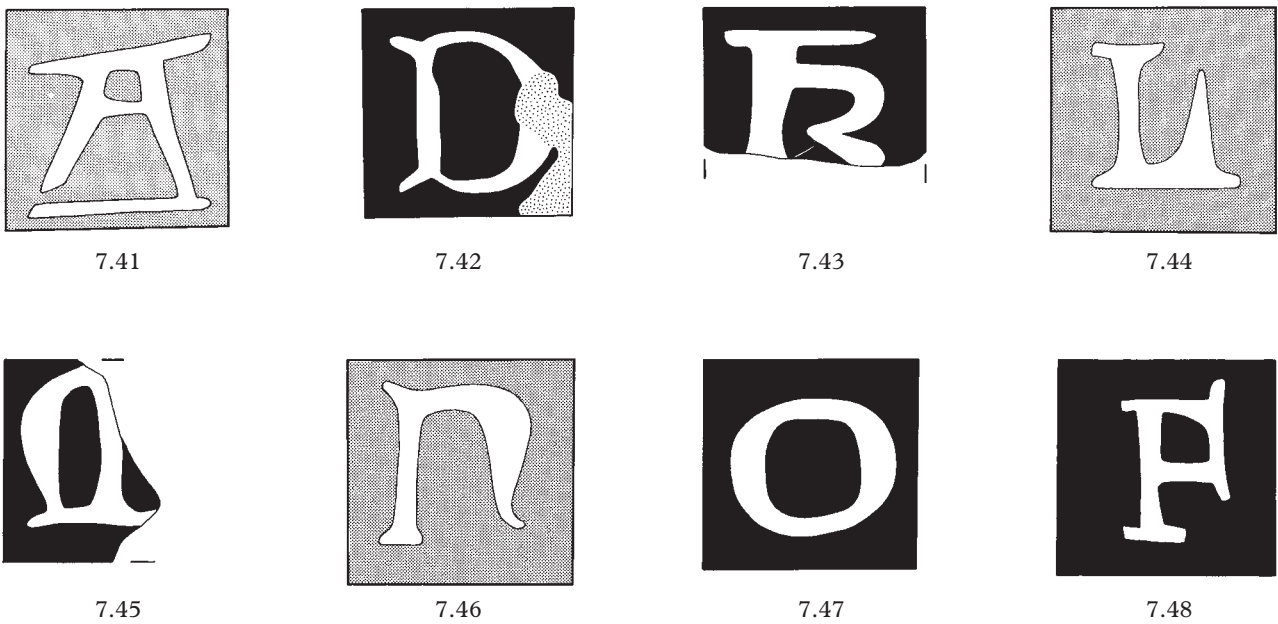
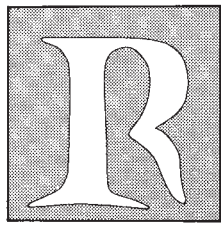


Fig 14.1d: Decorated Mosaic Group, large letter tiles. Scale 1:3



7.49



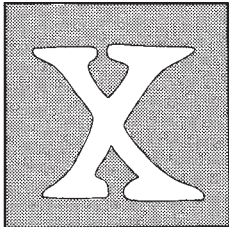
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7.51



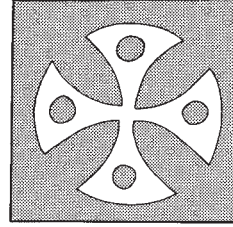
7.52



7.53



7.54



7.55

Fig 14.1d (cont'd): Decorated Mosaic Group, large letter tiles. Scale 1:3



7.56



7.57



7.58



7.59



7.60



7.61



7.62



7.63



7.64

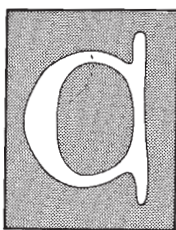


7.65



7.66

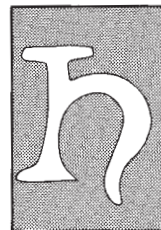
Fig 14.1e: Decorated Mosaic Group, small letter tiles. Scale 1:3



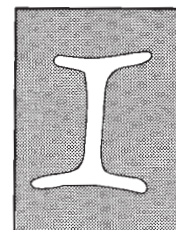
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7.68



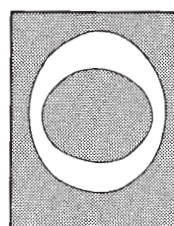
7.69



7.70



7.71



7.72



7.73



7.74

Fig 14.1f: Decorated Mosaic Group, rectangular letter tiles. Scale 1:3

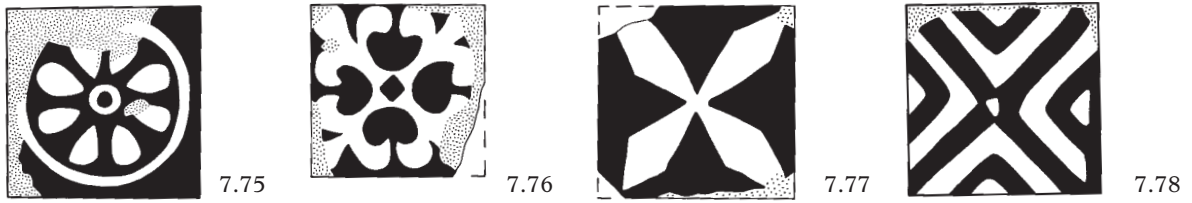


Fig 14.1g: Decorated Mosaic Group, small square tile designs. Scale 1:3

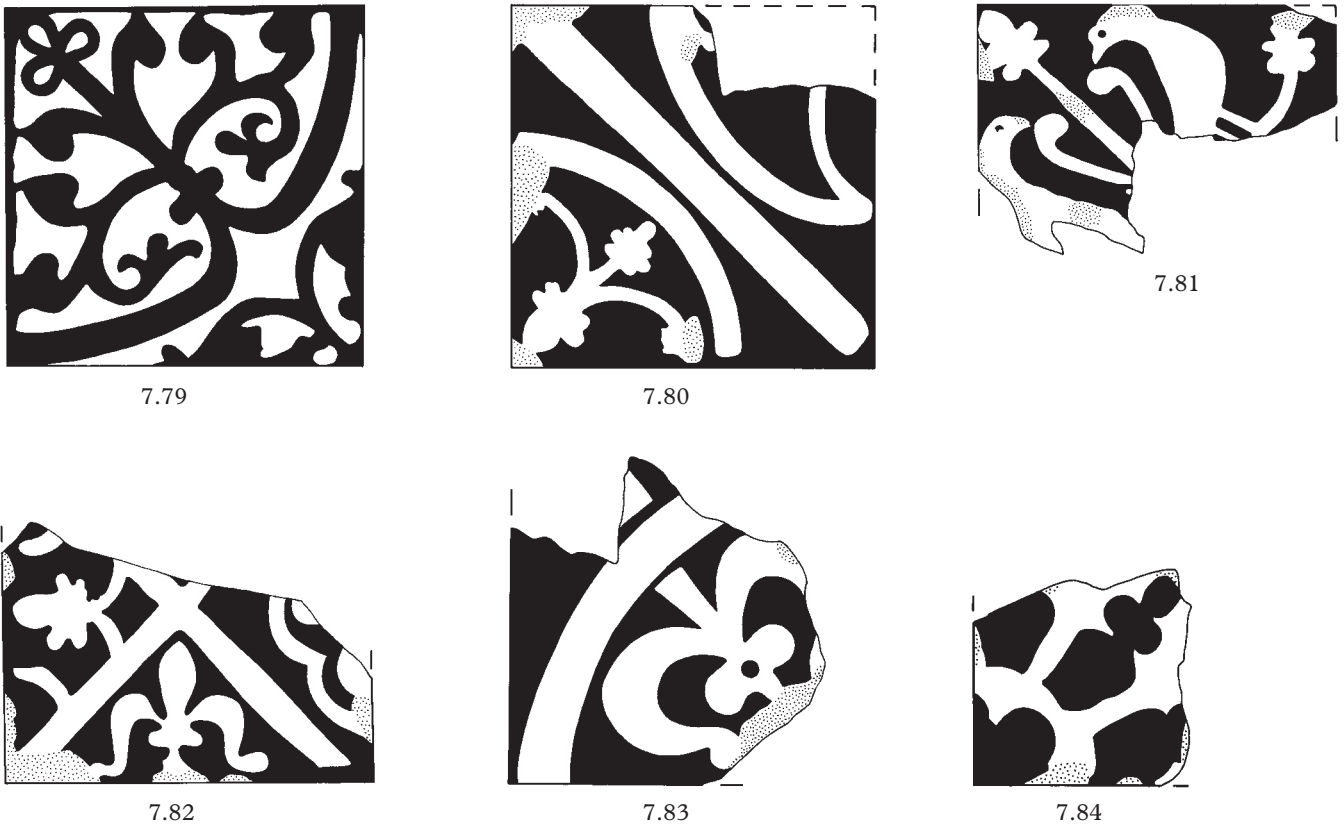


Fig 14.1h: Decorated Mosaic Group, large square tile designs. Scale 1:3

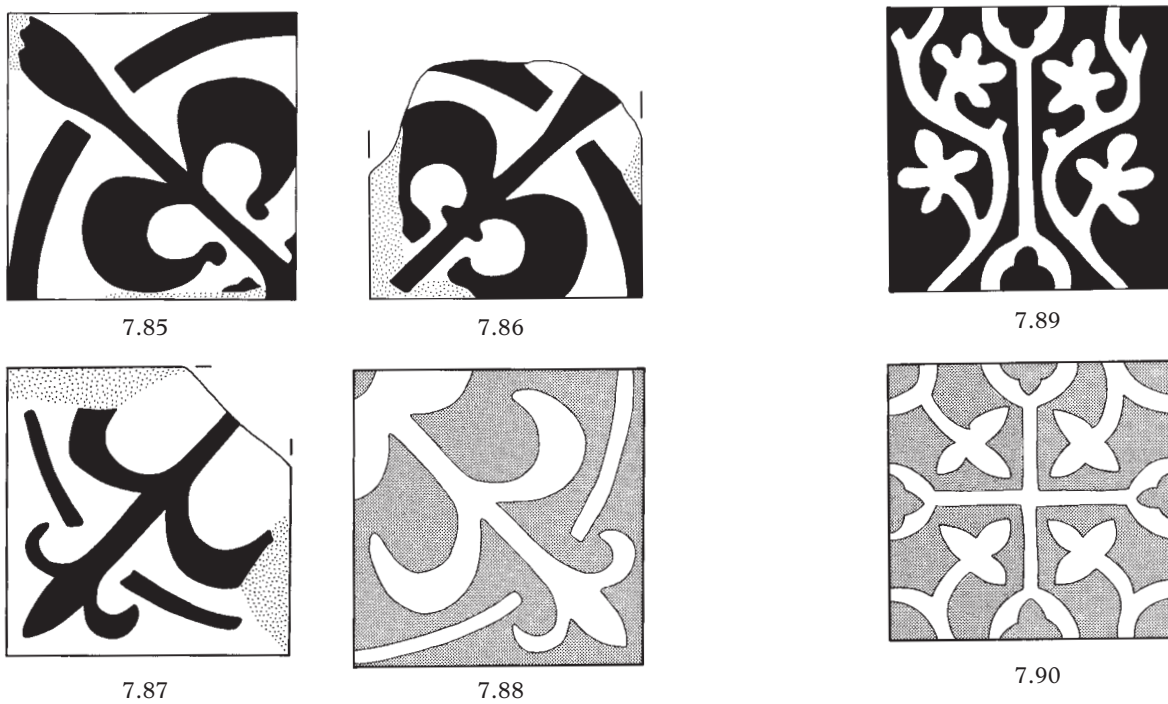
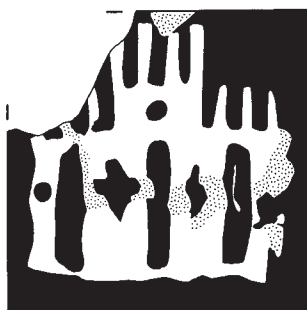


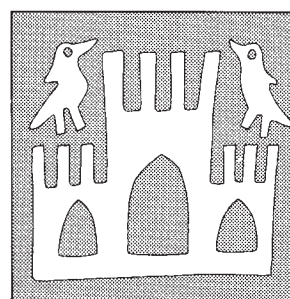
Fig 14.1i:- Decorated Mosaic Group, medium square tile designs. Scale 1:3



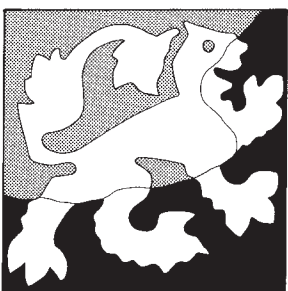
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7.92



7.93



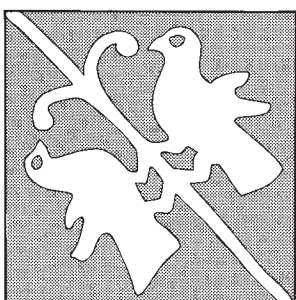
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7.95



7.96



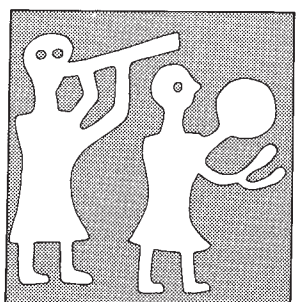
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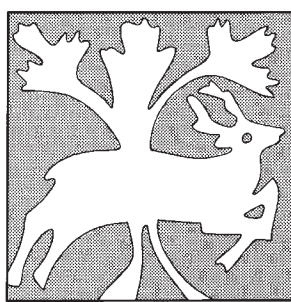
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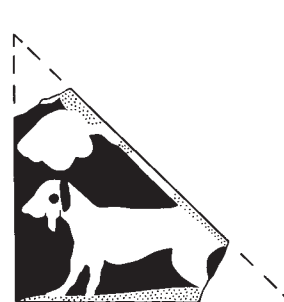
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7.100

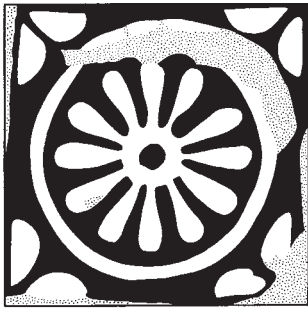


7.101

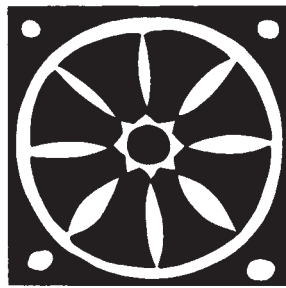


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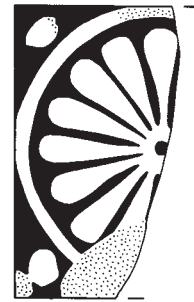
Fig 14.1i (cont'd): Decorated Mosaic Group, medium square tile designs. Scale 1:3



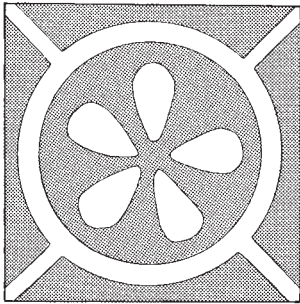
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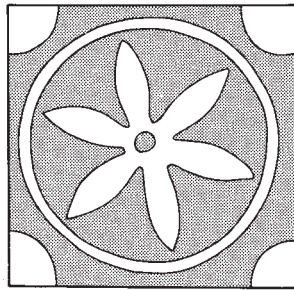
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7.105



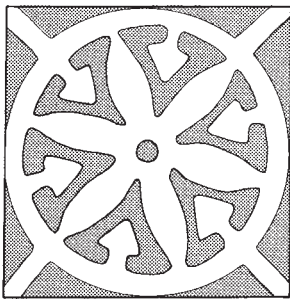
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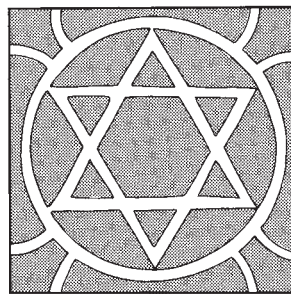
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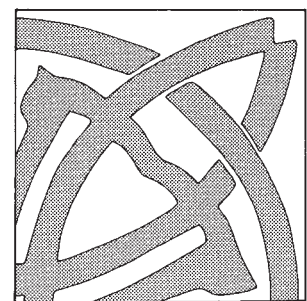
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7.109



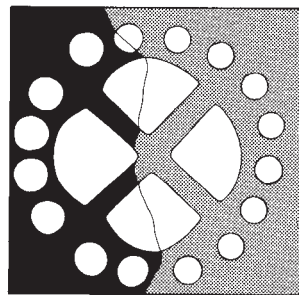
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7.117



7.118

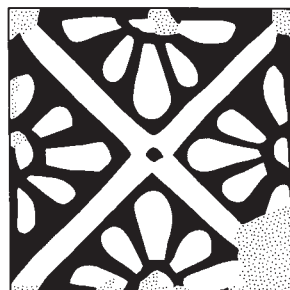
Fig 14.1i (cont'd): Decorated Mosaic Group, medium square tile designs. Scale 1:3



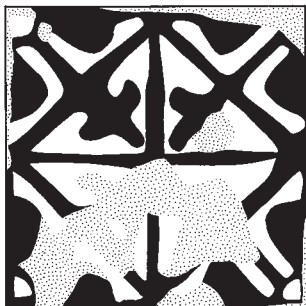
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7.121



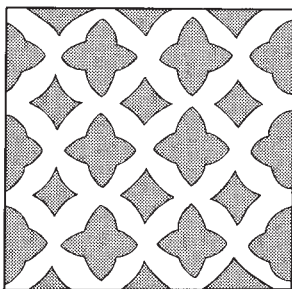
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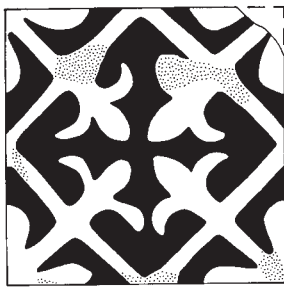
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7.124



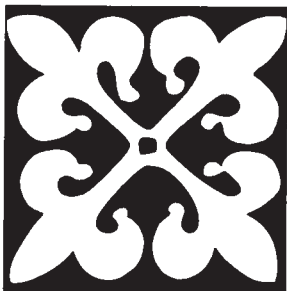
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7.126



7.127



7.128



7.129



7.130

Fig 14.1i (cont'd): Decorated Mosaic Group, medium square tile designs. Scale 1:3



7.131



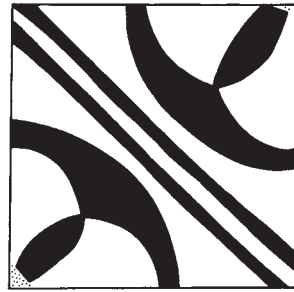
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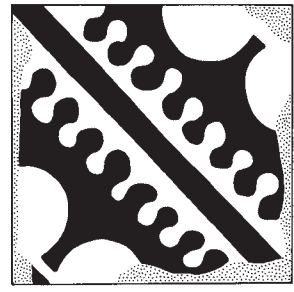
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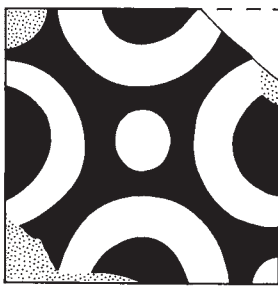
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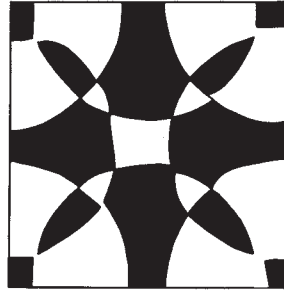
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7.136



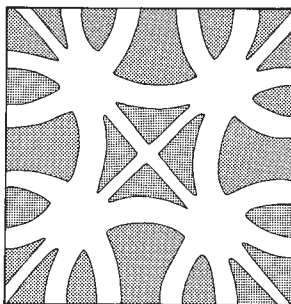
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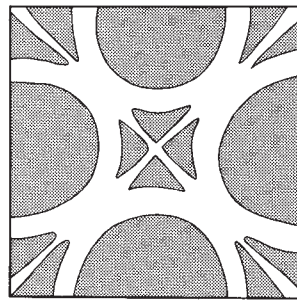
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7.139



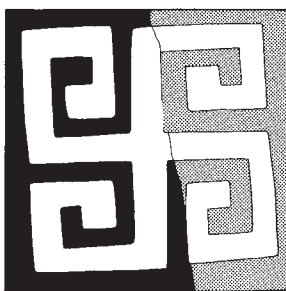
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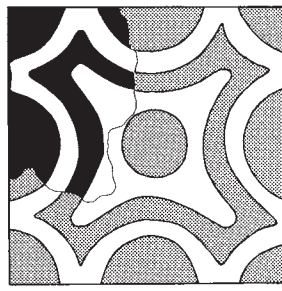
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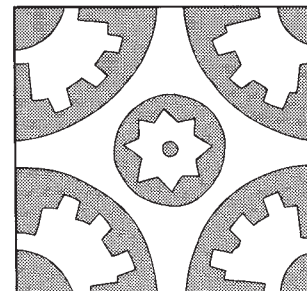
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7.143

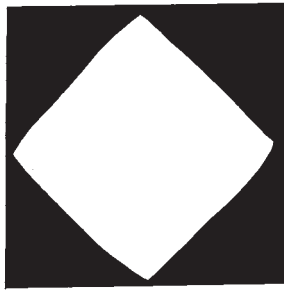


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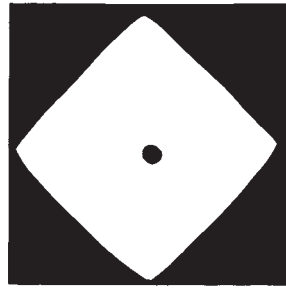


7.145

Fig 14.1i (cont'd): Decorated Mosaic Group, medium square tile designs. Scale 1:3



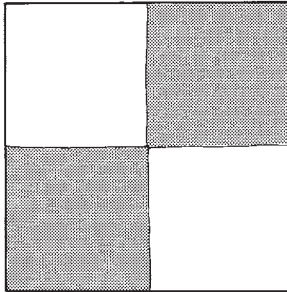
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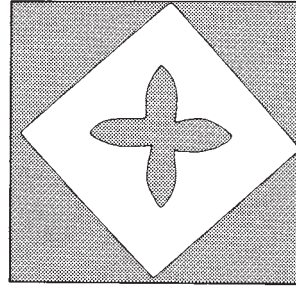
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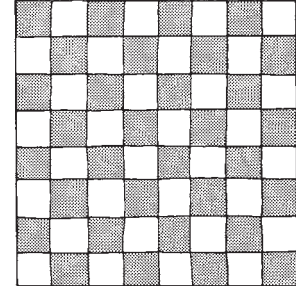
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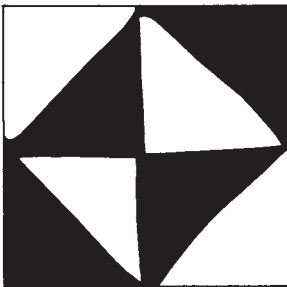
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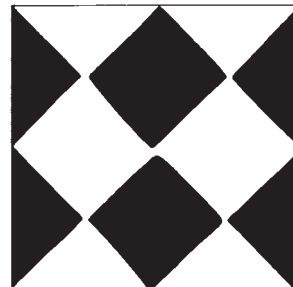
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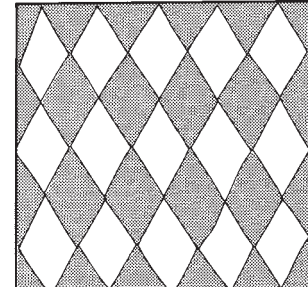
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7.152



7.153



7.154



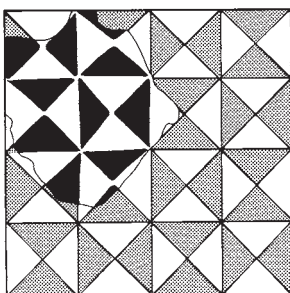
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7.156



7.157



7.158



7.159



7.160

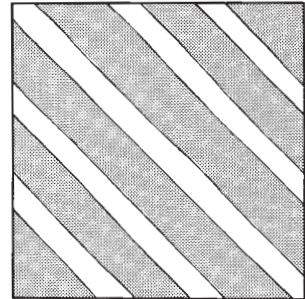
Fig 14.1i (cont'd): Decorated Mosaic Group, medium square tile designs and the rectangular design 7.160. Scale 1:3



7.161



7.162



7.163



7.164



7.165



7.166



7.167

Fig 14.1i (cont'd): Decorated Mosaic Group, medium square tile designs. Scale 1:3

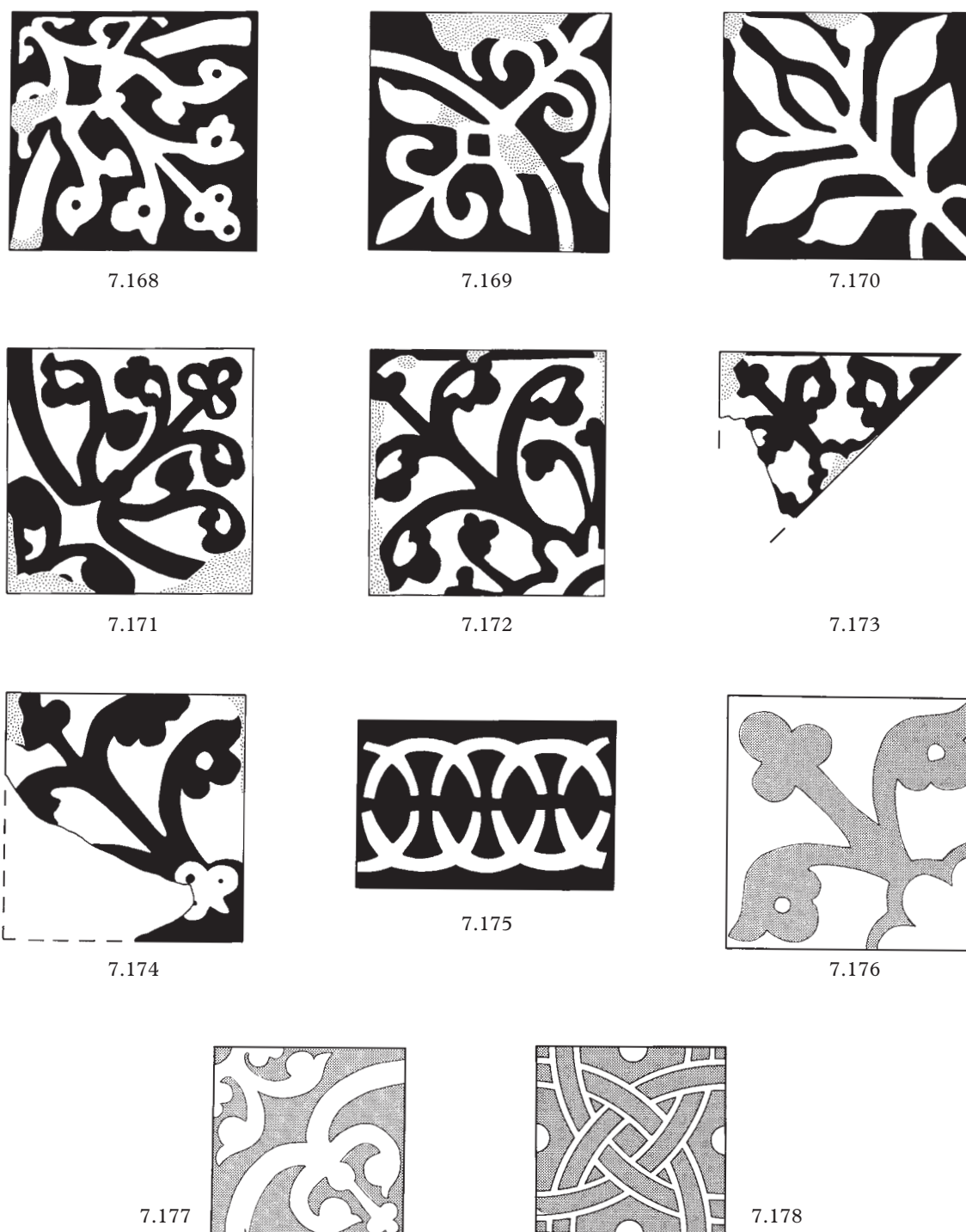


Fig 14.1i (cont'd): Decorated Mosaic Group, medium square tile designs and the rectangular design 7.175. Scale 1:3. Designs 7.176–7.178 are of unknown size

The tile assemblages varied in condition. The tiles from Kirkstall Abbey and Scarborough Castle were relatively unworn, but 73% of those from Jervaulx and 91% from Kirkham were worn. At Thornton, only six examples were in the loose collection, the others either being re-set on site or in the site exhibition. The shaped tiles from Thornton were completely worn with no decoration remaining. Although the sample size for the group as a whole appeared good, the number of extant, accessible tiles in a reasonable condition from individual sites was small. There were 32 designs for

which there are no extant examples (designs 7.10, 7.12, 7.33, 7.39, 7.67–70, 7.72, 7.88, 7.90, 7.93, 7.97, 7.100, 7.101, 7.106, 7.107, 7.109–111, 7.125, 7.140, 7.141, 7.145, 7.149–151, 7.154, 7.163, 7.176–178).

As Table 14.1 clearly shows, there is no one site with the full range of Decorated Mosaic tiles. Shaped tiles have only been found at five sites, straight-sided letter tiles at three and large-sized square tiles at two. Those sites with shaped tiles also had the most varied assemblages in other categories. The medium-sized square tiles (illustrated in Fig 14.1i) were by far the most widely distributed type.

Mosaic arrangements

Ward and Shaw's record of the paving at Jervaulx included illustrations of four roundels, three large and one much smaller one (Figs 14.2–14.5). These were designated the EC, RS, NL and small roundels, from the letters shown by Shaw in the band of tiles surrounding the centrepiece (No Letters, in the case of the NL roundel). Comparison of these drawings with the record of shaped tiles from Watton and the extant assemblages from Jervaulx, Kirkstall and Scarborough

suggested that there may in fact have been only two, rather than three, large roundels in the Decorated Mosaic Group.

The 'RS' roundel (Shaw plate IX; Figs 14.1a, 14.2, Tables 14.2–14.3)

Of the three large roundels illustrated by Shaw, the RS roundel is the only one with a light coloured pattern against a dark background. Extant shaped tiles with light-on-dark designs not illustrated by Shaw are:

Table 14.2: The presence or absence of the RS roundel designs in Shaw's drawings and at the various sites. The design numbers are ordered from the outermost band to the centre of the roundel

<i>Shaw's drawings</i>	<i>Jervaulx</i>	<i>Kirkstall</i>	<i>Scarborough</i>	<i>Watton</i>
7.14	7.14	7.14	7.14	–
similar to 7.16 plain band	7.16	–	–	–
7.1 and 7.2	7.1, 7.2	7.2	7.1	7.2
7.3	7.3	7.3	7.3	–
7.4	7.4	7.4	–	–
7.5	7.5	7.5	7.5	7.5
7.6	–	7.6	–	7.6
7.7	7.7	7.7	–	7.7
letters R and S	–	–	–	–
7.34	7.34	7.34	–	–
plain circle	–	plain circle	–	–

Table 14.3: Designs in the spandrels of the RS roundel

<i>Shaw</i>	<i>Jervaulx</i>	<i>Kirkstall</i>	<i>Scarborough</i>	<i>Watton</i>
7.24	–	7.24	–	–
7.29	7.29	7.29	7.29	7.29
7.30	7.30	7.30	–	7.30

Table 14.4: The presence or absence of the EC roundel designs in Shaw's drawings and at the various sites

<i>Shaw's drawings</i>	<i>Jervaulx</i>	<i>Kirkstall</i>	<i>Scarborough</i>	<i>Thornton</i>	<i>Watton</i>
7.8	7.8	–	–	–	–
possibly 7.9	7.9	–	–	–	–
7.10	–	–	–	–	–
7.11	7.11	–	–	–	–
7.12	7.12	probably 7.12	–	–	–
7.13	–	–	7.13	–	–
7.15	12.1	–	–	–	–
7.16	7.16	–	–	–	–
7.17	7.17	–	–	–	–
letters E and C	–	–	–	–	–
7.34	7.34	7.34	–	–	7.34
plain circle	–	–	–	–	–

Table 14.5: Designs in the spandrels of the EC roundel

<i>Shaw</i>	<i>Jervaulx</i>	<i>Kirkstall</i>	<i>Scarborough</i>	<i>Thornton</i>	<i>Watton</i>
similar to 7.23	–	–	–	–	–
7.29	7.29	7.29	7.29	–	7.29
7.30	7.30	7.30	–	–	7.30

1. Design 7.22 and the letter tiles, designs 7.35–7.36, 7.38, 7.40 (all from Kirkstall). These, and possibly design 7.39, could have been used instead of Shaw's plain outer band. Tiles recorded as plain are often worn.
2. Design 7.28, which could have been used as an alternative centre piece (replacing design 7.34 and the plain circle).
3. The circular tile design 7.33, known from antiquarian records of tiles at Kirkstall, which might have been used either as an alternative to the plain centre circle or design 7.30 in the spandrels.
4. Designs 7.20 (Jervaulx, Kirkstall and Watton) and 7.21 (Jervaulx and Scarborough Castle). Design 7.20 was found in use as a shaped tile in the outer-

most band of the RS roundel discovered in the refectory at Kirkstall Abbey (Mitchell *et al.* 1961, xvii, pl 1). A curved band containing tiles of design 7.20 was also shown in an illustration of tiles re-set in the southern chapel of the south transept at Kirkstall in the 19th century (Anon, *The Builder* 1896, 2; and see Fig 14.12). The tiles currently in this location are probably the same ones, although now completely worn. The design requires a mirror tile to make up the scroll and it is possible that this exists as a fragment from Jervaulx (design 7.21). The shape of design 7.20 supports the idea that it and design 7.21 were used as an outer band, possibly instead of designs 7.16 or 7.14. Shaw showed a similar arrangement (design 7.19) in the outermost



Fig 14.2: Decorated Mosaic, Jervaulx Abbey: 'RS' roundel. H. Shaw 1858, after J. Ward 1845 (compare Fig 14.1a)

band of the NL roundel. If this were the case, an additional band of tiles of similar size to the letter designs 7.35–7.36, 7.38, 7.40, or 7.22, would have been needed to maintain the diameter of the RS roundel.

Design 7.32 is the only extant tile of the correct size to fit the band that Shaw showed as having the ‘R’ and ‘S’ letter tiles. Designs 7.32 and the adjacent design 7.7 are smaller than the equivalent tiles (designs 7.13 and 7.12) in the EC roundel. The extant example of design 7.32 is a dark-on-light design. However, it was published in a light-on-dark version in the 1896 record of tiles re-set in the south transept at Kirkstall (Fig 14.12).

The ‘NL’ roundel (Shaw plate VIII; Fig 14.3)

The body of this roundel is identical to the RS roundel but in reversed colours (dark-on-light). There are no extant examples of any of these tiles in these colours. The centre piece is the same as in two other Shaw illustrations and the band of leopards (design 7.15) is repeated in the EC roundel. It is possible, therefore, that this roundel did not exist and that there were only two large-scale roundels in the Decorated Mosaic assemblage; one light-on-dark (RS) and one dark-on-light (EC).

The outermost band of the NL roundel is represented by two extant tiles of design 7.19 (from



Fig 14.3: Decorated Mosaic, Jervaulx Abbey: ‘NL’ roundel. H. Shaw 1858, after J. Ward 1845. There is little evidence to support the medieval existence of this roundel

Jervaulx). However, the shape of these tiles suggests that this design may have replaced design 7.16 in the EC roundel. It fits more happily in this position than the extant example of design 7.16 does. Design 7.16 is more successful nearer the outside of the RS roundel.

The designs in the spandrels of the NL roundel include designs 7.29 and 7.30 which are also shown in the EC and RS roundels. Design 7.25 is extant in dark-on-light colours. Designs 7.26 and 7.27, again dark-on-light designs, are also extant corner tiles not illustrated by Shaw.

The 'EC' roundel (Shaw plate VII; Figs 14.1a, 14.4, Tables 14.4–14.5)

Two bands of this roundel, and the letter tiles, are unrepresented in the extant collection. However,

enough survives from Jervaulx to suggest that the antiquarian reconstruction is accurate and that a large dark-on-light roundel existed.

The outer bands of Decorated Mosaic roundels are interchangeable and design 7.16 is found in both the RS and EC examples while design 7.15 is shown in both the EC and NL roundels. The extant fragment of design 7.15 has been drawn with straight sides but it is probably slightly curved. Variations from Shaw among the extant tiles are as follows:

1. The only extant example of design 7.17 is in reversed colours.
2. Design 7.32 may have been used as a variation to 7.13. The design was shown in reversed colours in *The Builder* (Anon 1896, 2; Fig 14.12). It was drawn by Ward in his alternative centrepiece for the



Fig 14.4: *Decorated Mosaic, Jervaulx Abbey: 'EC' roundel. H. Shaw 1858, after J. Ward 1845 (compare Fig 14.1a)*

Jervaulx tiles, being used in place of the letter band in Shaw's RS roundel, and was found in this location when the pavement in the refectory at Kirkstall was uncovered (Mitchell *et al.* 1961, pl 1).

3. Design 7.31 could have been used as a variation on 7.12. It is considerably larger than design 7.7 in the RS roundel. It is curiously cut by the shape of the tile.
4. The centre of the roundel is shown as four tiles in Shaw's drawing. Among the extant tiles, design 7.34 is the nearest to their design but would have had a separate circular tile in the centre.
5. Design 7.25, 7.26 and 7.27 are all alternatives to 7.23 and 7.24 shown by Shaw in the spandrels.

The 'Small' roundel (Shaw plate XI; Fig 14.5)

In Shaw's drawing this arrangement is shown as composed of only four different designs and measured 860mm across, while Ward recorded only three designs with the mosaic measuring 640mm across. None of the drawn designs is exactly replicated in the extant collection but inside the west doorway of the church at Kirkstall is an area of tiling which extends the width of the nave and about 3m into the church (Fig 14.8). The tiles are completely worn, with no slip or glaze visible, but the diamond-shaped blocks are composed of 36 tiles of 112mm or 64 tiles of 80mm size. Two of these blocks also contain small roundels (*c.*400mm across) made of



Fig 14.5: Decorated Mosaic, Jervaulx Abbey: 'Small' roundel. H. Shaw 1858, after J. Ward 1845 (compare Fig 14.7)

tiles similar in shape to those in the antiquarian records (Fig 14.7) but without the outer border. The extant tiles are more similar to Ward's drawing than Shaw's. The corner tiles are split in two and the tiles around the centre are in one piece, both as shown by Ward.

Among the less worn tiles in the extant collection, only design 7.26 is similar to a segment of Shaw's small roundel. Extant examples of the border tiles drawn by Shaw (design 7.18) are not thought to have been used as shown by him. The three extant fragments of this design have curved sides and must have been used as an outer band to one of the large roundels. They would be the same size and shape as design 7.17 in the EC roundel.

None of these variations from the antiquarian drawings show that there was another roundel of completely different design. It seems more likely that additional bands were added onto the existing roundel designs in order to vary their size, and that there was more variety in the corner pieces and centre pieces than the antiquarian drawings suggest. However, Shaw did think, 'from the arc of the circle of some of the remaining tiles, and those apparently not exterior ones' that there was another larger roundel arrangement. Unfortunately he did not publish these designs and they are not apparent in the extant assemblage.

In the limited assemblage of extant tiles there is little evidence for variation among the roundels at different sites. The absence of extant letter tiles from Jervaulx is belied by the antiquarian drawings, although letter tiles of the shape shown in the antiquarian drawings are not extant from any site. The shaped letter tiles from Kirkstall would have been used in an outer band of the roundels. There may have been differences between the Kirkstall and Jervaulx roundels in this respect.

Ward and Shaw give different measurements for the diameters of the roundels, with Shaw's the greater of the two (Ward 1845; Shaw 1858). Ward's dimensions are more consistent with the extant assemblage. Easiest to compare is the RS roundel, whose diameter to the inner plain band Ward gives as 1.25m. The extant tile drawings measure 1.34m, making no allowance for mortar joints. It is possible that Shaw's measurements included a border of small square plain tiles. Ward's overall diameter for the RS roundel is 1.65m and for the EC roundel, 1.93m.

Pavement layout

Since the roundel in the refectory at Kirkstall was re-laid in that location in the 15th century we are heavily reliant upon the 19th-century plans of the church floor at Jervaulx for information regarding the layout of Decorated Mosaic paving. The antiquarian drawing, shown in Figure 14.6, suggests that much of the body of the church at Jervaulx was paved with tiles laid in diamond-shaped blocks. The spaces taken up by the choir stalls are clearly visible and no tiles were found in the area of the High Altar. Graves had been inserted along the strip of tiling down the centre of the choir

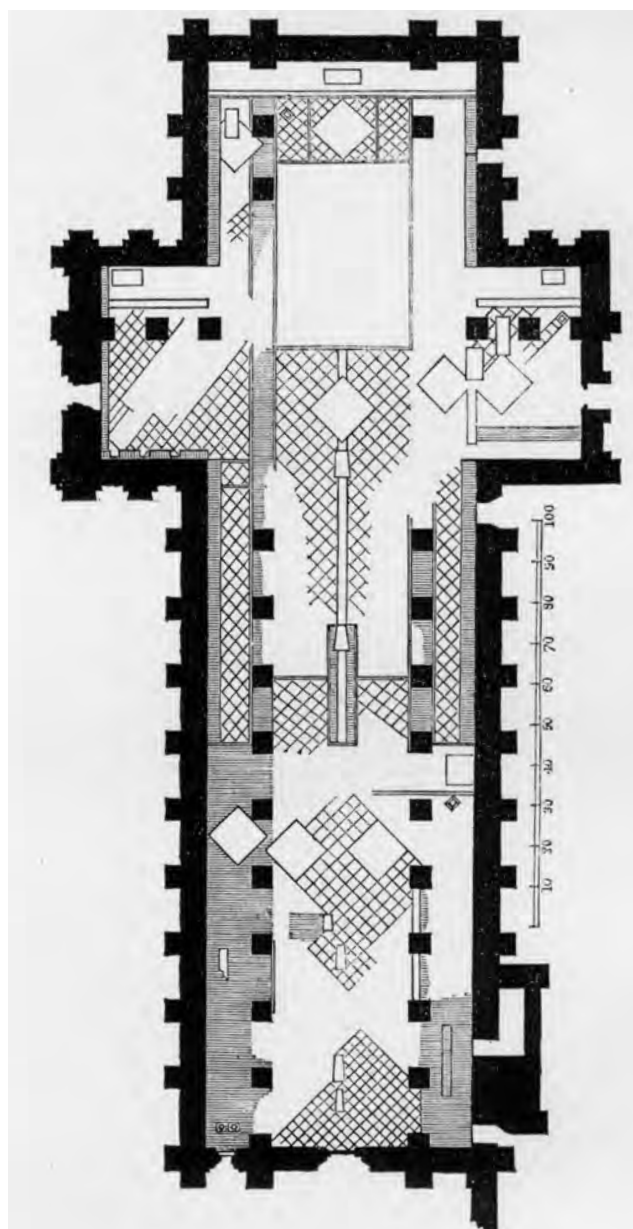


Fig 14.6: *Jervaulx Abbey church, antiquarian record of the tiled pavement. H. Shaw 1858, after J. Ward 1845. Shaded areas against the walls were 'Plain red tiles'*

and elsewhere in the church. All this is straightforward. However, the locations of the roundels in this drawing are difficult to explain. Eight of the large Decorated Mosaic roundels are shown dispersed about the church, with the largest (EC) roundel under the crossing tower. Only this and a roundel in the chancel, east of the High Altar, are centrally located. The other roundels are in the north presbytery aisle, north nave aisle, two in the fifth bay (from west) of the nave, and one in each of the south crossing aisle and the south transept. In Ward's plan, the outer borders of two roundels are interrupted by pier bases (in the north presbytery aisle and the fifth bay from the west of the nave). In the plan published by Shaw, the location of the roundels on the north side of the nave and in the nave aisle have been adjusted to avoid the pier base.



Fig 14.7: *Decorated Mosaic, Kirkstall Abbey: detail from Fig 14.8 below showing one of the only surviving examples of part of a 'Small' roundel (compare Fig 14.5)*

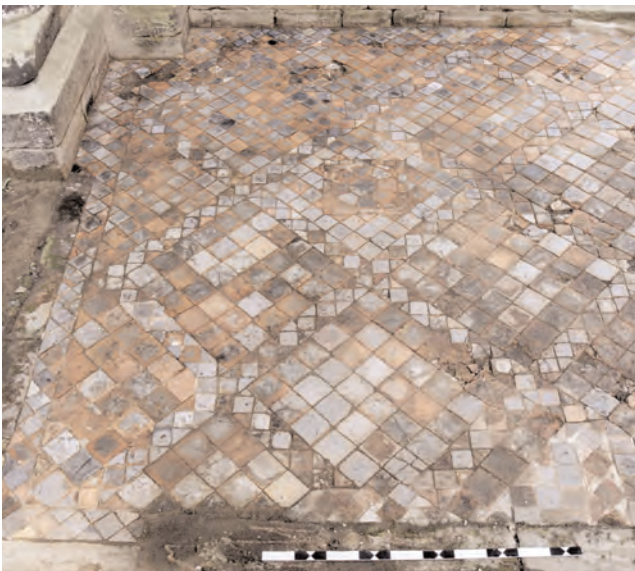


Fig 14.8: *Decorated Mosaic, Kirkstall Abbey: tiles in the west end of the nave, now completely worn but showing medium square tiles laid in diagonal blocks. Two of the blocks, to the north and south, contain possible 'Small' roundels (see detail, Fig 14.7 above)*

Such elaborate and complex pieces of flooring are unlikely to have originally been laid in the positions shown in these plans. The five small roundels appear equally haphazardly placed, with two set at right angles at the far west end of the north nave aisle, and one in

the south aisle of the laybrothers' choir, the south transept and the north side of the presbytery.

It is unlikely that the church floor at Jervaulx would have survived through the medieval period without some alterations, disturbance and re-laying. However, the



Fig 14.9: Decorated Mosaic, Kirkstall Abbey refectory: the less worn areas of re-set tiles showing the effect of designs 7.135 (top left), R7.137 (top right), 7.138 (bottom left) and 7.161 (bottom right). A difficulty with publishing single design drawings is that their effect is quite different from that achieved when they are laid in a block (i.e. as intended); compare Fig 14.10

oddities of the plan may be further explained by indications that few unworn tiles were, in fact, found *in situ* at Jervaulx. An unattributed report in the *Gentleman's Magazine* suggests that little of the pavement was intact by 1821 and Shaw's report confirms that very few tiles remained on the site by the mid 19th century. The antiquarians blamed the loss of the tiles on theft, destruction by frost or re-use as building rubble (Shaw 1852; 1858; Brayshaw ms NYCRO ZJX 11, MIC 1322; Worsley 1988, 72). Destruction of the whole floor by frost is unlikely. The extant assemblage from Jervaulx is worn, not shattered by frost. At Meaux, reconstructions of Plain Mosaic arrangements were achieved by G.K. Beulah from a relatively small assemblage of tiles, and the plan of the floor was based on the locations of disturbed tiles. Comparison with Meaux might suggest that something similar occurred at Jervaulx, with few tiles found *in situ* or in good condition. Full-scale roundels may have been included on the plan where only a scattering of shaped tiles remained. Later antiquarians concluded that the pavement had been found as shown on the plan and sought to explain the absence of the large tile assemblage. The speculative nature of the

19th-century plan of Jervaulx is further indicated by its inaccuracy when compared with the plan of the church recorded by Hope and Brakspear (1911).

Square tile arrangements

Shaw, Ward and the tiles re-set in both the refectory and west end of the church at Kirkstall all suggest that square tiles of a single design were arranged in diagonally placed blocks divided by bands of plain tiles (Figs 14.8 and 14.10). The square tile designs in the diamond shaped blocks in Kirkstall refectory are nos 7.85/R7.85, 7.86, 7.94, 7.95, 7.104, 7.112, 7.120 (but in reversed colours), 7.128/R7.128, 7.133/R7.133, 7.135, 7.136/R7.137, 7.138, 7.161, 7.166 and 7.172/R7.172. The divider lanes are of *c.*70mm squares flanked by triangles made from halved *c.*70mm squares. The number of tiles in the blocks varies. Shaw thought that the blocks at Jervaulx were made up of 36 tiles of the medium square size, while in the refectory at Kirkstall there are 64 medium squares in each block. In the nave at Kirkstall there are either 36 medium-sized squares or 64 *c.*80mm square tiles (either large letter tiles or small squares – all

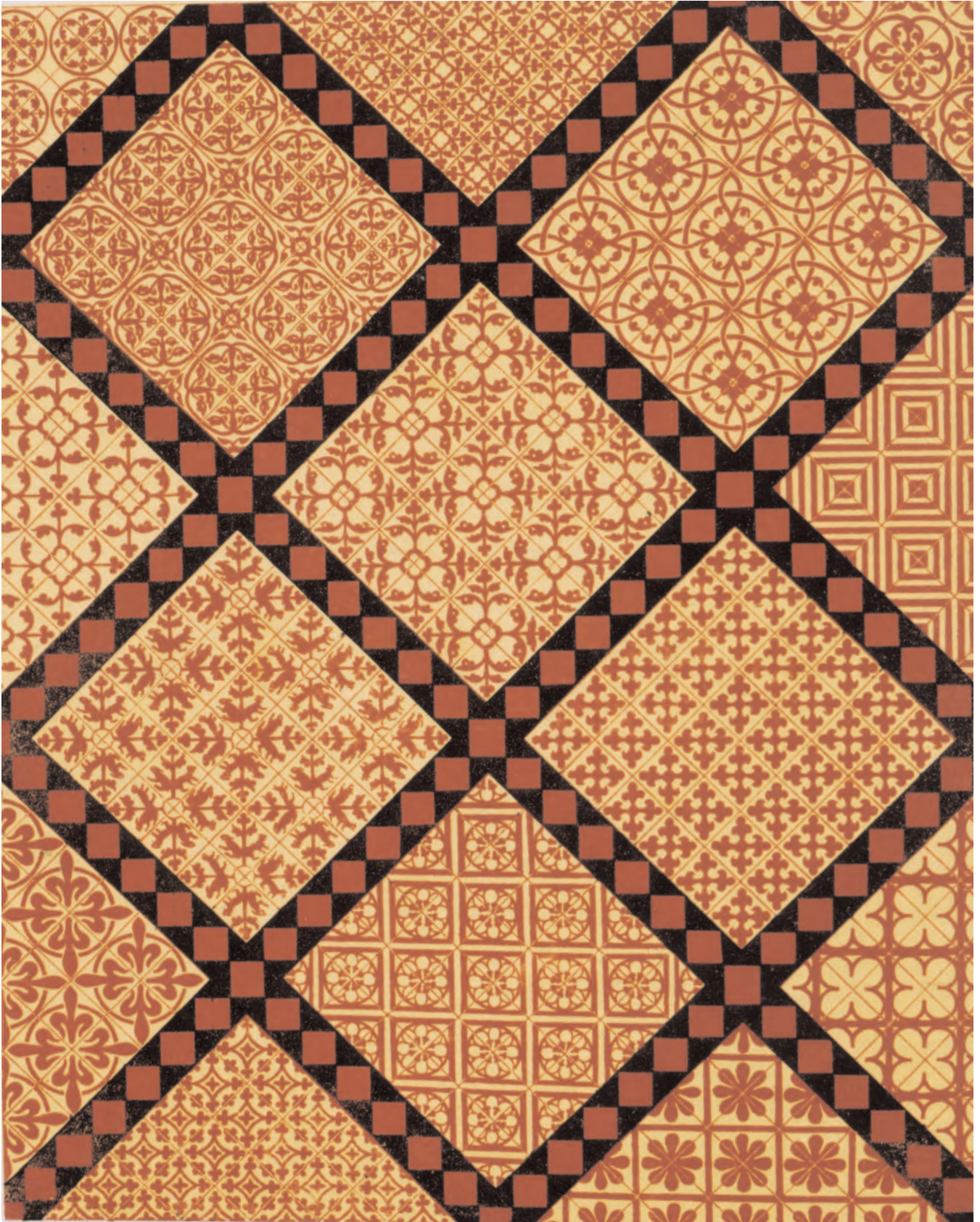


Fig 14.10: Decorated Mosaic, Jervaulx Abbey: square tile arrangements with representations of designs 7.85, 7.102, 7.116, R7.128, 7.129, 7.132, R7.133, R7.134, 7.161, 7.171, 7.173, 7.172 or 7.174, and versions of designs 7.79 and 7.80 (R = colours reversed). H. Shaw 1858, after J. Ward 1845



Fig 14.11: Decorated Mosaic, Jervaulx Abbey: antiquarian drawings of square tile arrangements, designs 7.79, 7.81, 7.118 and R7.172 (R = colours reversed). H. Shaw 1858, after J. Ward 1845

these tiles are completely worn). A block of 36 large squares and 64 medium squares take up about the same area so it is possible that the large and medium square tiles were both used in this way. Shaw does not mention the use of the large square tiles at Jervaulx and this size of tile is unknown at other sites. The use of the square letter tiles in these blocks seems unlikely but there is no other indication of their layout.

The use of small squares in the banding between the blocks as suggested by Shaw is confirmed in both the nave and refectory at Kirkstall. Shaw also noted that small plain squares were set in double or treble

rows as borders to the roundels. They have been re-set in a chequered pattern of alternating dark and light squares along the east and west sides of the pavement in Kirkstall refectory and around the paving in the nave of the church. Two or three groups of triangular tiles were also found arranged into a square block of 150mm in the refectory excavation (Mitchell *et al.* 1961, 9). These were not included in the reconstruction of the refectory floor since their location within the pavement was unknown, but an example of this arrangement is visible in the re-set floor in the south transept chapel.

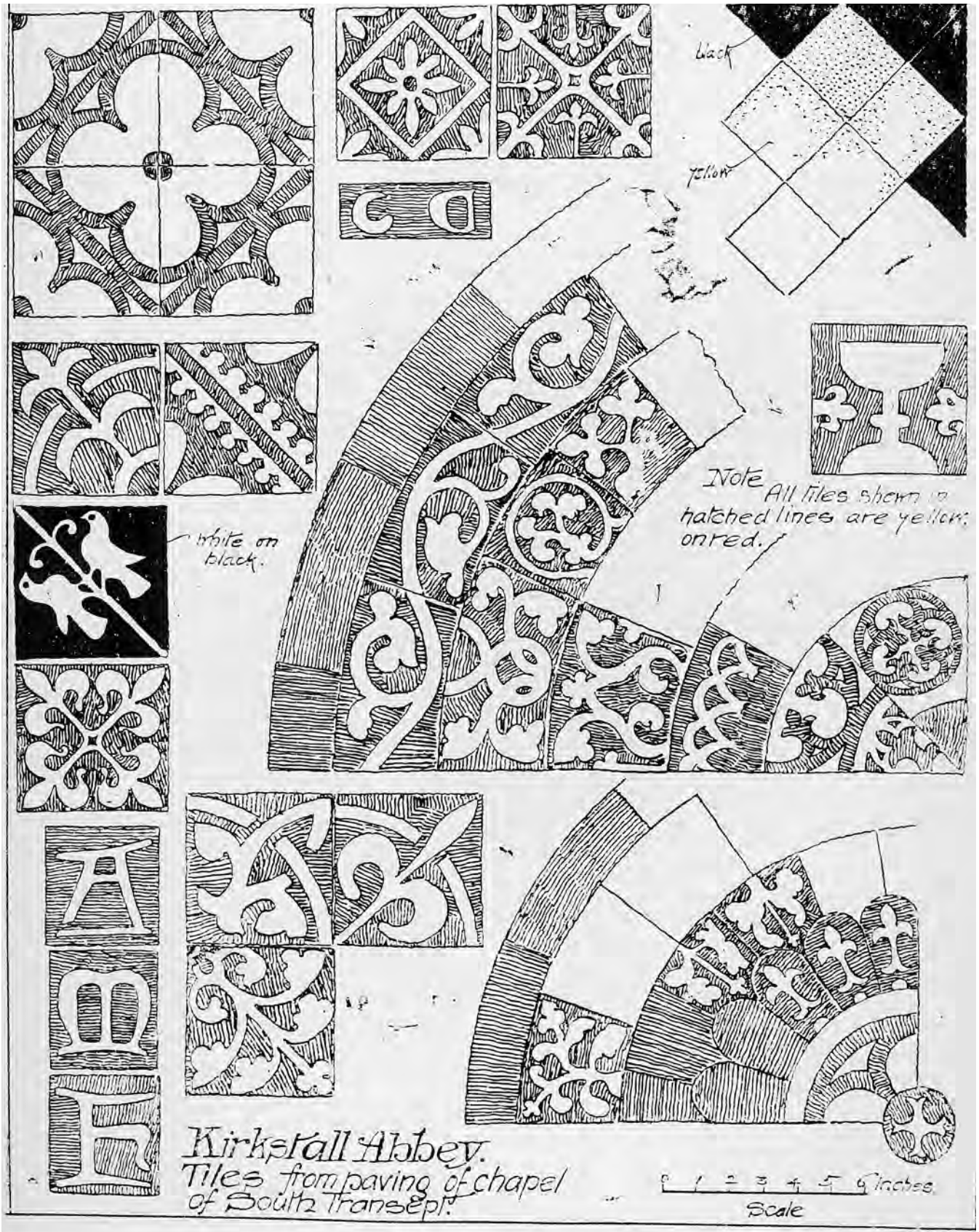


Fig 14.12: Decorated Mosaic, Kirkstall Abbey church: tiles re-set in the south transept chapel in the 19th century, including designs 7.39, 7.88, 7.120 and 7.124. The tile of design 7.39 (the rectangular letter tile) may, in fact, have had curved sides. The tiles remain in place but are now completely worn. *The Builder* 1896

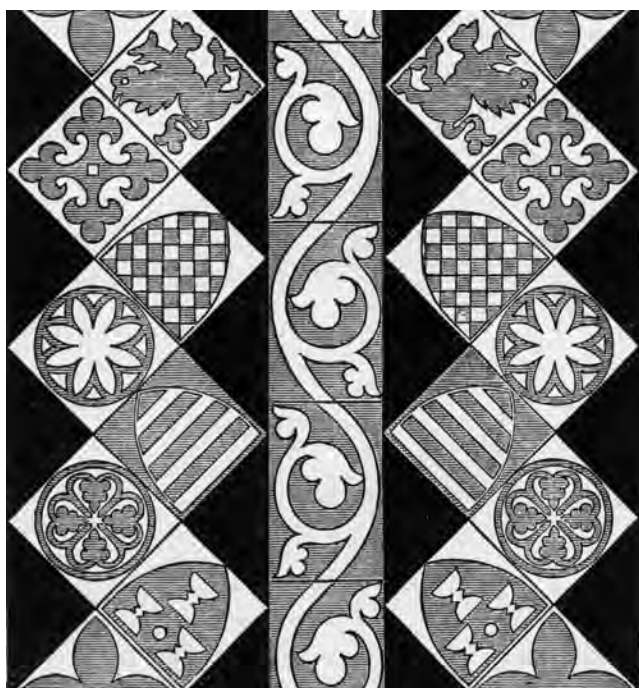


Fig 14.13: *Decorated Mosaic, Jervaulx Abbey: antiquarian record of a strip of tiling, made up of small square tiles set diagonally either side of a rectangular scroll design, running east-west through the choir. H. Shaw 1858, after J. Ward 1845*

The only indication of the layout of the small square decorated tiles is given by Shaw/Ward (Fig 14.13). The way the straight-sided letter tiles were used is not known.

The identity of the plain red tiles shown on the antiquarian plan of the church at Jervaulx has not been resolved (shaded areas on Fig 14.6 and see entry 52, Chapter 27: *Jervaulx Abbey*). They might be worn tiles or (later medieval) oxidised plain-glazed tiles. The location of these tiles in the plan is curious. They appear to have been laid around much of the outer wall of the church, in the western nave aisles and between the pier bases. Shaw describes the plain red tiles as laid 'lengthwise', perhaps meaning on the same angle as the church, and therefore in opposition to the diamond-shaped panels. They were only shown in the body of the church on either side of part of the strip of tiling in the choir and abutting a grave in the fourth bay (from west) in the nave. Tiles between the pier bases and against the outer walls of the church are in locations least likely to be subject to wear. One explanation might be that the less worn decorated tiles from these locations were exchanged for the more worn tiles in the body of the church.

Shapes

As the shapes of the tiles are shown in the design drawings (Fig 14.1), the Decorated Mosaic shapes have not been drawn or numbered separately. The only undecorated shapes are shown in Fig 14.14. However, of these, S.443, 444, 451 and 452 might be worn examples of designs 7.3, 7.7, 7.13 and 7.29 or 7.30 respectively.

Dimensions of extant tiles

The range of dimensions for the extant square and rectangular tiles were:

Large squares: 142–149mm (one outlier of 128mm)
 Medium squares: 103–119mm
 Small squares: 70–76mm

Large letters: 82–87mm
 Small letters: 42–45mm
 Rectangular letters: 89 × 63mm

Other rectangles: design 7.175 = 119 × 78mm
 design 7.160 = 110 × 37mm

The depth of the tiles was uniform regardless of other differences in shape and size. All were 21–30mm deep, with the majority 25–26mm. Scored and split triangles made up 7% of the assemblage of decorated square tiles.

Dimensions of tiles in the antiquarian records

One of the main inconsistencies between the extant assemblage and the square tiles recorded in the antiquarian record was in the tile dimensions. All authorities agree on the medium sized squares being *c.*112mm. The large square tiles are shown by Shaw as either the same size as the medium squares or without a scale, while Ward showed them as varying between 138mm and 154mm. The 15 extant examples measure between 142–9mm but with one apparently anomalous example of design 7.82 measuring 128mm. Ward showed both the small squares and some of the designs only known on medium squares in the extant collection as *c.*87mm across. There are only eight extant examples of the small squares but they measure 70–77mm across; it is the large letter tiles that measure *c.*87mm. Shaw notes that 'great pains' were taken in the making of Ward's reconstruction, and that Ward used the scaled parts of Reinagle's plans (the original surveyor) to deduce the scale of the rest. This may be what caused Ward such problems. Designs illustrated by Ward for which there are no extant examples are shown as antiquarian drawings in Figure 14.1 (designs 7.176, 7.177, 7.178) and their scale is uncertain.

Shaw describes the plain tiles that divided the blocks of 36 decorated tiles as being less than 50mm square. However, there are no extant examples of this size. The dimensions given by Shaw for the strip of tiling running through the choir suggests that these small squares and the associated triangles were about 70mm across. Large numbers of plain *c.*75mm tiles do survive from Jervaulx. Some of these are glazed brown or green over the body fabric, or yellow or green over the white clay, but the majority are completely worn and could have been either decorated or plain. Many

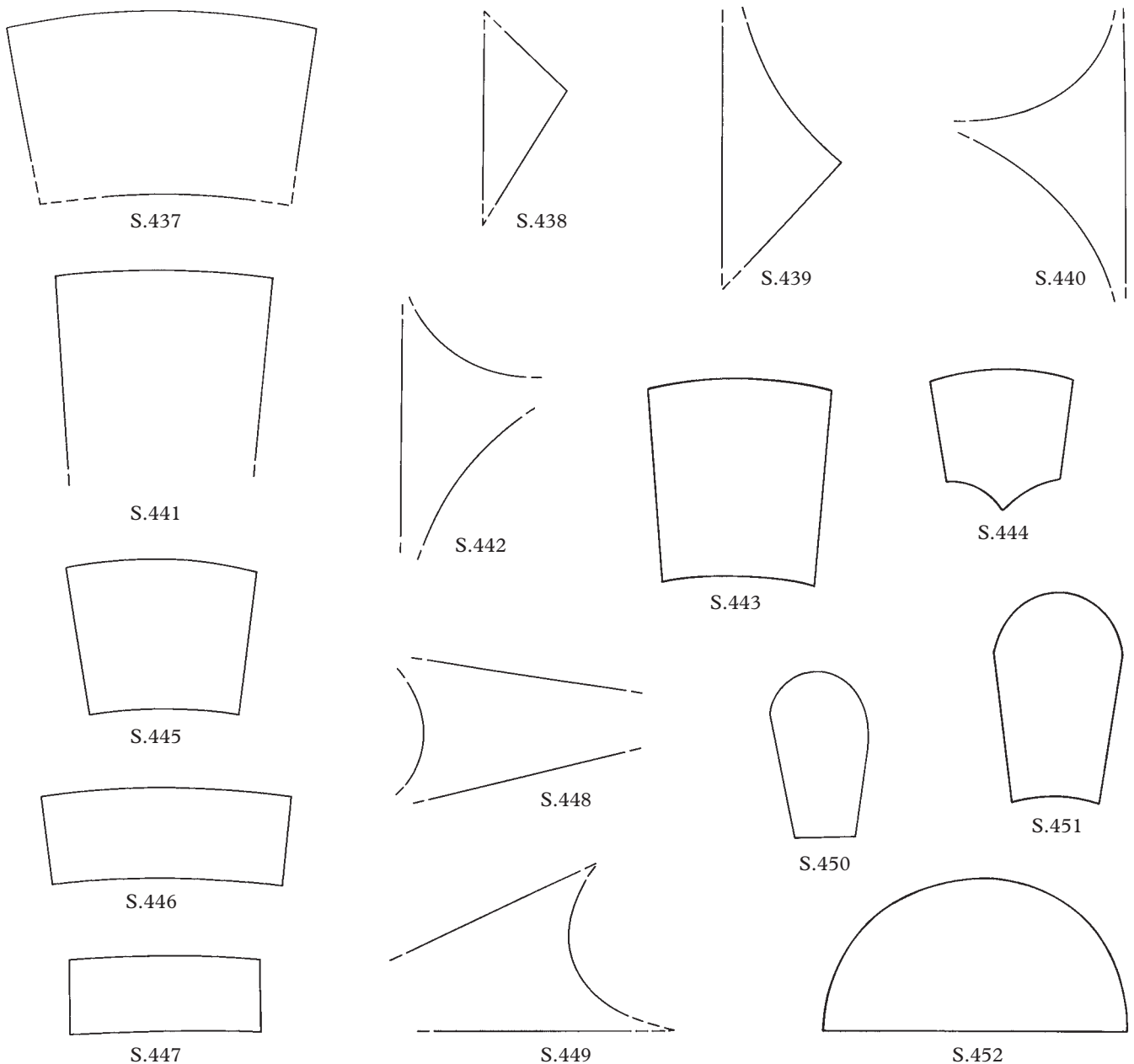


Fig 14.14: *Decorated Mosaic Group, undecorated shapes. Scale 1:3*

are scored on one diagonal and split into triangles. They could have been used to divide up the diamond-shaped sections of paving and for the roundel surrounds. A few plain tiles of the *c.*112mm size also survive from Jervaulx but are not mentioned by the antiquarians. There are no extant examples of plain large squares.

It is uncertain how many tiles from Jervaulx either Shaw or Ward actually saw. We know that Ward obtained a collection of 33 tiles from Jervaulx at some stage because he gave them to the British Museum in 1853 (Eames 1980, 1, 132). However the 33 Jervaulx tiles now in the British Museum collection include several examples of *c.*112mm tiles which Ward drew at *c.*85mm. These tiles may, of course, have been acquired by Ward after his drawings were made in

1845. Alternatively Ward may have decided to keep his copies consistent with the Reinagle originals regardless of other evidence.

Designs

As seen, Decorated Mosaic designs include:

- Shaped tile designs: 7.1–7.40 (Fig 14.1a–c).
- Large letter tile designs: 7.41–7.55 (Fig 14.1d).
- Small letter tile designs: 7.56–7.66 (Fig 14.1e).
- Rectangular letter tile designs: 7.67–7.74 (Fig 14.1f). The extant version of design 7.74 is square but there is a photograph of this design as a rectangle from Watton Priory (Fig 14.15).
- Small square tile designs: 7.75–7.78 (Fig 14.1g).

- Large square tile designs: 7.79–7.84 (Fig 14.1h).
- Medium square tile designs: 7.85–7.159, 7.161–7.174 (Fig 14.1i; designs in reversed colours that are not illustrated are R7.85, R7.87, R7.128, R7.132–R7.135, R7.137, R7.146, R7.158, R7.167, R7.172, R7.174; see Table 14.6).
- Others: size unknown, designs 7.176–7.178; rectangles, designs 7.175, 7.160 (Fig 14.1).

The practice of counter-changing the colours of designs, already seen to be a feature of the Decorated Mosaic roundels, was similarly employed with the square tile designs. Table 14.6 shows which designs are known to occur in reversed colours. In general only one version of each design has been illustrated (either light-on-dark or dark-on-light). It should be noted, however, that the two colour ways were made with two different stamps and there are often slight differences between them (see further below).

By far the most common Decorated Mosaic designs are those on the medium square tiles (totalling almost 100). Table 14.7 shows the number of medium-sized square designs common to each pair of sites. The diagonal line, in bold, from top left to bottom right shows the total number of these designs from each site.

Table 14.7 shows that 35% of the designs at Jervaulx were also found at Kirkstall. However, only 6% of designs on the medium square tiles at Jervaulx and about 25% of designs at Kirkstall were also found at Watton. These are the sites with the largest number of designs. By contrast 85% of the designs from Lockington were also known from Watton and all six designs from Kirkham were known at both Watton and Winthorpe. A high proportion of the designs at Scarborough were found at both Kirkstall and Jervaulx. There was, therefore, little overlap between the design assemblages on medium-sized squares between Kirkstall, Jervaulx and Scarborough, on the one hand, and Watton, Kirkham and Winthorpe on the other.

Decoration: The depth of white clay was 0.5–1mm on 99% of examples, suggesting that the white clay had been applied as a slip rather than as an inlay. A total of six tiles, at Thornton, Beverley and Scarborough, had white clay of 2mm or 3mm depth. On a few tiles a ‘tide line’ of slip was visible on the sides of the tiles as if they had been dipped into the slip face down. However, on tiles from Thornton and Reedham the white clay tended to stand slightly proud of the body fabric – perhaps indicative of inlay. The worn condition of one of the Reedham tiles suggested that the white clay was harder wearing than the body, but the white clay was also raised on some unworn examples.

The constituents of the white clay varied. That on the Jervaulx and Scarborough tiles was easily recognised, with lots of inclusions giving a cracked or marbled effect after firing. The white clay used at other sites was of much higher quality. At Kirkstall and

Table 14.6: Decorated Mosaic designs found in reversed colours

<i>Illustrated designs</i>	<i>Illustrated designs in opposite colours</i>	<i>Design numbers of versions in opposite colours, not illustrated</i>
7.85		R7.85
7.87		R7.87
7.107	7.108	
7.117	7.115	
	7.116	
7.128		7.128
7.132		R7.132
7.133		R7.133
7.134		R7.134
7.135		R7.135
7.137		R7.137
7.146		R7.146
7.158		R7.158
7.167		R7.167
7.168	7.171	
7.172		R7.172
7.174		R7.174

Also not illustrated is design 7.179, a fragment, possibly a variation on design 7.85

Thornton it was noticeably clean and white and smooth with no marbling. This clay was more prone to falling out than at Jervaulx, possibly the result of not mixing in enough red clay or other material to prevent differential shrinkage between the body fabric and the white clay during firing. The white clay at Burnham, Durham, Reedham and Winthorpe was pinkish suggesting a greater admixture of red clay. All this showed that the sources and preparation of the white clay varied.

The glaze on tiles from Jervaulx, Kirkstall, Scarborough and Thornton tended to fire black, dark brown or dark olive over the body fabric and dark yellow or olive over the white clay. At Kirkham, Watton and Habrough, the glaze was a light or medium brown over the body fabric where oxidised, or olive where the body fabric is reduced, and yellow or light olive over the white clay.

Design stamps: Different stamps were used to make the light-on-dark and dark-on-light versions of Decorated Mosaic designs. This was apparent from the stamp tracings, which showed that the stamps of versions in opposite colours varied, and also from examination of tiles with dark-on-light designs, which sometimes had a dark border along one or more of the tile edges. This suggested that the background on the dark-on-light designs was proud, with the design cut away. A raised background on the stamp would leave a ridge of clay along any edge of the quarry that extends beyond the area of the stamp. This raised area would not be coated with white clay, but glazed and fired dark brown, just like the areas of the design left raised on

Table 14.7: A count of designs common to pairs of sites. The figures in bold give the total number of designs WA=Watton, KS=Kirkstall, J=Jervaulx, WI=Winthorpe, S=Scarborough, TH=Thornton, KH=Kirkham, R=Reedham, BU=Burnham, BE=Beverley, H=Habrough.

	WA	KS	J	WI	S	TH	KH	R	BU	BE	H
WA	45	10	2	17	2	2	6	3	1	1	1
KS	10	38	11	6	9	4	–	2	2	–	–
J	2	11	31	1	7	–	–	2	–	–	–
WI	17	6	1	20	1	2	6	1	1	1	–
S	2	9	7	1	10	1	–	1	1	–	–
TH	4	5	–	3	1	12	1	–	2	–	–
KH	6	–	–	6	–	–	6	–	–	1	–
R	3	2	2	1	1	–	–	4	–	–	–
BU	1	2	–	1	1	2	–	–	2	–	–
BE	1	–	–	1	–	–	1	–	–	1	–
H	1	–	–	–	–	–	–	–	–	–	2

purpose. This unusual feature was found on both shaped tiles and all three sizes of square tiles (designs 7.9, 7.11, 7.17, 7.29, 7.78–7.79, 7.114, 7.164, 7.172 and 7.173).

Comparing the stamps used on tiles from different sites was difficult because the total number of designs was large and the sample sizes for most of the sites was small. Consequently, relatively few designs were common to two or more sites. However, it can be stated with reasonable confidence that the same stamps were used on tiles of design 7.14 at Scarborough, Jervaulx and Kirkstall, also designs 7.3, 7.5, R7.85 and R7.128 at Kirkstall and Jervaulx, and 7.86 and R7.133 at Scarborough and Jervaulx. The tiles from Reedham in Norfolk were worn but two examples of design 7.155 and one fragment and one complete tile of design R7.172 suggested that the same stamps were being used as on Yorkshire sites.

Despite the large number of stamps, there were no cracked examples among the tiles of this group. This, and the number of variations found of some designs, suggested that replacement stamps were easily available. Any damaged stamps were discarded.

Small stamps may have been used to make the individual letters on different sizes of tile. The letters on the shaped tiles were the same size as those on the small squares of the series and those on the large squares were the same size as on the rectangles. It is possible that the same stamp was used to make the letter L on the curved tile (design 7.40) and on the small square (7.62). The extant example of the rectangular tile with the letter D was identical to an antiquarian drawing of a letter D on a large square tile (design 7.71). The letter F or P (design 7.73) on a rectangular tile at Kirkham and a square tile at Watton may also have been made with the same stamp.

Nail holes: None.

Firing: The majority of the extant tiles from Kirkstall, Scarborough, Thornton, Watton, Habrough, Winthorpe and Kirkham, and the single fragment from Beverley, were either partly or predominantly reduced. The Jervaulx tiles were subject to more variable firing conditions, with about equal numbers oxidised and reduced. The spalled tile attributed to Durham was oxidised. At Jervaulx, Scarborough and Kirkstall some of the tiles were highly fired, with a few fired to the point of vitrification. At Thornton several of the surviving square tiles are partly distorted through over-firing (Fig 27.40).

Fabric: Visual examination of the tile fabrics suggested that more than one clay source was used for both the body clay and the white clay (see above). The body fabric of tiles from Scarborough and Jervaulx contained a variety of inclusions and fine quartz (fabric code 4; see Chapter 9 for fabric descriptions). At Watton, Habrough, Beverley, Burnham, Durham, Kirkham and Reedham the body fabric had a lower iron content, firing pink and grey rather than red and black (fabric code 2).

Treatment of tile sides: All the tiles, both shaped and square, from all the sites, had either vertical or only very slightly bevelled sides. The curved sides of the shaped tiles were trimmed in a series of planes in the same manner as the Plain Mosaic but with at most only a very slight angle from the upper to lower surfaces. The edges of the tiles were often sharp.

Treatment of bases: The sandy bases of the tiles were not keyed.

Quality: A characteristic of the tiles at Watton, Kirkham, Winthorpe, Habrough, Beverley and Thornton was the slight pitting over the upper surface. A characteristic of tiles at Jervaulx and Scarborough

was the marbling of the white clay. In general, the tiles were hard wearing and quality was good apart from over firing (particularly at Thornton). Other types of damage were recorded for 8% of the assemblage, mainly either cracked fabrics or poor colour differentiation between the white clay and body fabric.

Discussion

Despite a heavy emphasis on design, shape and size, comparison of the extant tiles suggested that there were other common features of manufacture at the various sites. In consequence, the shaped tiles, large and medium squares and the letter tiles were all thought to have been the products of the same workshop. Conclusions regarding the small square decorated tiles were more tentative as there are few loose survivors of this type. Two of their designs were recorded as found at Newminster Abbey in the 1920s. These are the only Decorated Mosaic designs directly paralleled at Newminster and comparison of the characteristics of the six extant examples of Newminster tiles (all types) suggested that they were not part of the Decorated Mosaic Group (see further, Chapter 15).

The characteristics of Decorated Mosaic tiles that suggested they were made by the same tilers for all sites include consistency in depth, the use of the same stamps, the technique of cutting two stamps to make designs in reversed colours and the vertical or near vertical sides to the tiles. Aspects that showed variation were the design assemblages, the fabric of both the tile quarries and the white clay, the glazes and firing.

Some of the distinctions varied with geographical location and there appeared to be three sub-groups of the material: (A) Jervaulx and Scarborough, (B) Kirkstall and (C) Burnham, Beverley, Habrough, Kirkham, Reedham, Watton and Winthorpe (designated the Humber sub-group). The single fragment attributed to Durham may belong to the Humber sub-group. The tile from Dornoch has not been seen but description of the fabric by Christopher Norton and photograph published by Richardson suggested that it also belonged to this group (Richardson 1929, 305, fig 21; Norton 1994, 146, fig 6.6 and fn. 40). Tiles at Thornton had some similarities to both sub-groups (B) and (C).

The tiles of the Humber sub-group were distinguished by their body fabric and white clay, and consequently by the colours of the glaze. They had a characteristic pitting of the upper surface and, apart from Thornton, tended to be less highly fired and made of a paler fabric than tiles from Jervaulx, Scarborough and Kirkstall. Thornton tiles had similar body fabric and white clay to the other Humber sites but were often over fired, like the sites further north and west. The assemblage of designs on the medium-sized square tiles was similar at Watton, Kirkham and Winthorpe and different from that at Jervaulx, Kirkstall and Scarborough.

These distinctions, particularly the differences in fabrics, suggested that Decorated Mosaic tiles were made in more than one location, perhaps with different production sites for Jervaulx and/or Scarborough, Kirkstall and in the area of the Humber. The tiles from the more distant sites were probably supplied by water transport along the east coast, perhaps suggesting manufacture near a port for the Humber sub-group.

The design assemblage included two large sized roundels (RS and EC), rather than the three of the anti-quarian record. The designs forming the bodies of these roundels were loosely based counter-changes in colour, one being dark-on-light (EC) and the other light-on-dark (RS). A similar counter-change in colours was prevalent in most designs on the square tiles, at least among the medium and large sizes. The widest range of tile types were found at Jervaulx, Kirkstall, Watton, Scarborough, Thornton and possibly Kirkham. Some of the types used at these sites were site specific. For example, the large squares were only known at Jervaulx and probably Scarborough, and the small square letter tiles were only found at Kirkstall. The assemblages at the sites of lesser status, at Winthorpe, Burnham, Reedham and perhaps Habrough were much more restricted with, apparently, only tiles of the medium square size represented. These medium-sized squares were also the only tile type represented at all sites. It seems likely that the more unorthodox shapes and sizes were special orders for higher status sites.

Dating

Independent dating for the use of the Decorated Mosaic tiles at individual sites is scanty (see Chapter 27 for details). The tiled floor at St Lawrence's Church, Burnham, was thought to belong to a restoration of the early or mid 14th century. It is possible that the supply of Decorated tiles to this site was linked with their supply to Thornton Abbey. St Lawrence's Church was granted to the Augustinians at Thornton by their founder William le Gros in 1139, and was held by the priory until the suppression. If the Decorated Mosaic tiles at Thornton, now re-set in the undercroft of the refectory on the south side of the cloister, had originally formed a floor in the refectory above, a similar date might be suggested here. The entire south claustral range at Thornton was rebuilt to the south of the earlier range in the first half of the 14th century. The cloister was being built in 1322 and was roofed in 1326. Money was paid for work on the new refectory in 1327 and the refectory windows were glazed in 1331. It is, of course, possible that the tiles at both these sites were re-used in these locations.

A date after 1300 is also suggested at Reedham Church in Norfolk and at Watton Priory. If the Decorated Mosaic tiles found in the south chapel at Reedham were in their original locations, they must have been laid after about 1300, when this chapel was built. At Watton, the Decorated Mosaic tiles were



Fig 14.15: *Decorated Mosaic, Watton Priory: medium square and letter tiles, possibly from the nuns' chapter house. A. Oswald 1935 (reproduced by kind permission of Country Life Picture Library)*

found in the chapter house floor and set into a rebate cut in the horizontal plane of the four steps leading up to the high altar in the nuns' church (Fig 14.15). According to Hope's analysis of the site, the chapter house at Watton was rebuilt in the 14th century (Hope 1901a, 15). The introduction of the tiles in the presbytery steps, which were otherwise paved with chalk blocks, might be associated with the insertion of a tomb on the north side of these steps in the 14th century.

These 14th-century dates refer to sites of the Humber sub-group. The dating from Scarborough Castle may be earlier since the second chapel at Scarborough, with which the tiles were associated, was replaced in the early 14th century. There is, unfortunately, no evidence for the date of first use of the tiles at either Jervaulx or Kirkstall. The tiles in the refectory at Kirkstall were re-used in this location in the later 15th century. Kirkstall was taken into receivership in the 1280s, suffering financial difficulties at the same time as several other religious houses in the area, and

it seems unlikely that large sums would have been spent on elaborate tiled flooring in the immediate aftermath of such an event, unless of course the pavement itself was a bequest.

On stylistic grounds, a later 13th-century date might be suggested for the Decorated Mosaic roundels. The segment-shaped tiles of the roundels, the stylised foliage of the designs and the use of letter tiles are broadly paralleled in France (Norton 1986b; for example at the abbey of Cunault in Maine-et-Loire and Saint Pierre-sur-Dives in Calvados) and in southern and western England (Eames 1980, 128–40; Hope and Brakspear 1906; Clarendon Place in Wiltshire; Muchelney and Cleeve Abbeys in Somerset; Beaulieu Abbey in Hampshire). The pavement at Clarendon is dated from documents to between 1237 and 1244 and the other pavements are thought, on stylistic grounds, to be of similar date (Eames 1980, 138–9). Many of the square Decorated Mosaic tile designs might be placed in the later 13th century. Elizabeth Eames compared the pierced terminals on some of the Jervaulx designs in the British Museum collection with 13th-century examples from Winchester and other Wessex sites (Eames 1980, 1, 214). The motifs that became fashionable on the death of Eleanor of Castile in 1291 (7.91–7.93, 7.98–7.99) might be thought to date to the last decade of the 13th century but could be later. The musicians of design 7.100 (from Watton) might be thought more similar to 14th-century material. Both the Eleanor and musician motifs were used by sub-groups B and C but were not found at Jervaulx or Scarborough.

A stylistically based date would, therefore, place the Decorated Mosaic roundels and some of the square tiles in the later 13th century, with a 14th-century date for other square tile designs. The archaeological evidence gives a slightly later impression, with manufacture continuing well into the first half of the 14th century. It is possible that the more northerly sites (Jervaulx and Scarborough) were provided with Decorated Mosaic first, followed by Kirkstall, and then by production for sites in the Humber region in the first half of the 14th century. There was no evidence, however, for a temporal distinction in the use of shaped and square tiles. Some of the monastic sites in the Humber sub-group (Watton, Thornton and probably Kirkham) seem to have had shaped as well as square tiles, although there are few extant examples.

Concordance

There are 32 Decorated Mosaic tiles from Jervaulx in the British Museum (BMC/11203–11235). Tiles BMC/11332 and 11333 are of Decorated Mosaic type but of uncertain provenance.

15 Parallels to the Decorated Mosaic tile group (possibly c.1300)

Tile Group 8 (Figs 15.1–15.4)

There are only eight extant tiles of this group but a plan and photographs of a substantial pavement were published following their discovery in a building at Newminster Abbey in the 1920s (Honeyman *et al.* 1929; the tiles were discussed by Hunter Blair. See here Figs 15.2–15.4 below and 27.29). One further fragment, thought to be of this group (design 8.2), was published following excavations in the 1960s (Harbottle and Salway 1964, fig 26, no. 12). As a result of the extremely limited extant assemblage, much of the analysis depends upon a comparison of designs. There are clear stylistic similarities to the Decorated Mosaic Group, with shaped tiles, interwoven patterns and small square tiles with simple, stand alone designs. However, the Newminster tiles are interpreted as a separate production group, either locally made copies of, or the inspiration for, the Decorated Mosaic Group.

Site, sample and condition: Eight tiles from Newminster Abbey. Six of these are small squares, four plain and two decorated (designs 8.3 and 8.4). The other two tiles are of the rectangular design 8.1, one being a fragment. All the decorated tiles were worn.

Mosaic arrangements: The intact paving found in the 1920s is not thought to have been in its original location, probably being re-set during the medieval period (Fig 27.29). The only known arrangement of shaped tiles was that recorded by Fig 15.2.

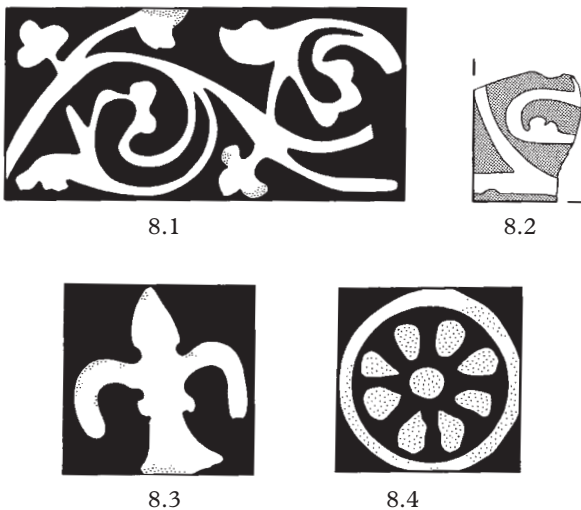


Fig 15.1: Other Decorated Mosaic (Group 8) design drawings of extant examples of 8.1, 8.3 and 8.4. These appear in the plates published by Honeyman *et al.* 1929; design 8.1 is the rectangular tile in Fig 15.2, designs 8.3 and 8.4 are nos 5 and 4 in Fig 15.3. Design 8.2 was published by Harbottle and Sawley (1964, fig 26, no. 12). Scale 1:3

Shapes, size: The rectangle measured 156 × 75mm. The 1929 excavation report noted that plain rectangles, 150mm × 75mm, were found on the south side of the intact pavement. The small squares were c.75mm across. All the extant tiles were c.25mm deep.

Designs: A total of 22 designs were assigned to this group. All except the decorated fragment found in the 1960s are shown in the excavation photographs (Figs 15.2–15.4). The extant examples, plus the fragment recorded in the 1960s, are illustrated in Fig 15.1.

Decoration: The tiles were slip decorated or inlaid, 1mm deep on worn tiles. The white clay included bits of red clay up to 3mm in diameter. The glaze fired yellow over the white clay and dark brown/black over the body fabric.

Design stamps: No comparisons were possible.

Nail holes: None.

Firing: Oxidised. The body fired orange, the white clay fired pink/orange.

Fabric: Laminated, sand variable, size up to 2mm and 20% frequency. No other inclusions (fabric code 8; see Chapter 9).



Fig 15.2: Newminster Abbey, Tile Group 8: excavation photograph of the circular arrangement in the centre of the floor in Fig 27.29. The rectangular tiles on either side are of design 8.1. Fig 27.29 shows that these tiles ran right across the centre of the pavement. Honeyman *et al.* 1929. Scale approximately 25% full size. Reproduced courtesy of the Society of Antiquaries of Newcastle upon Tyne

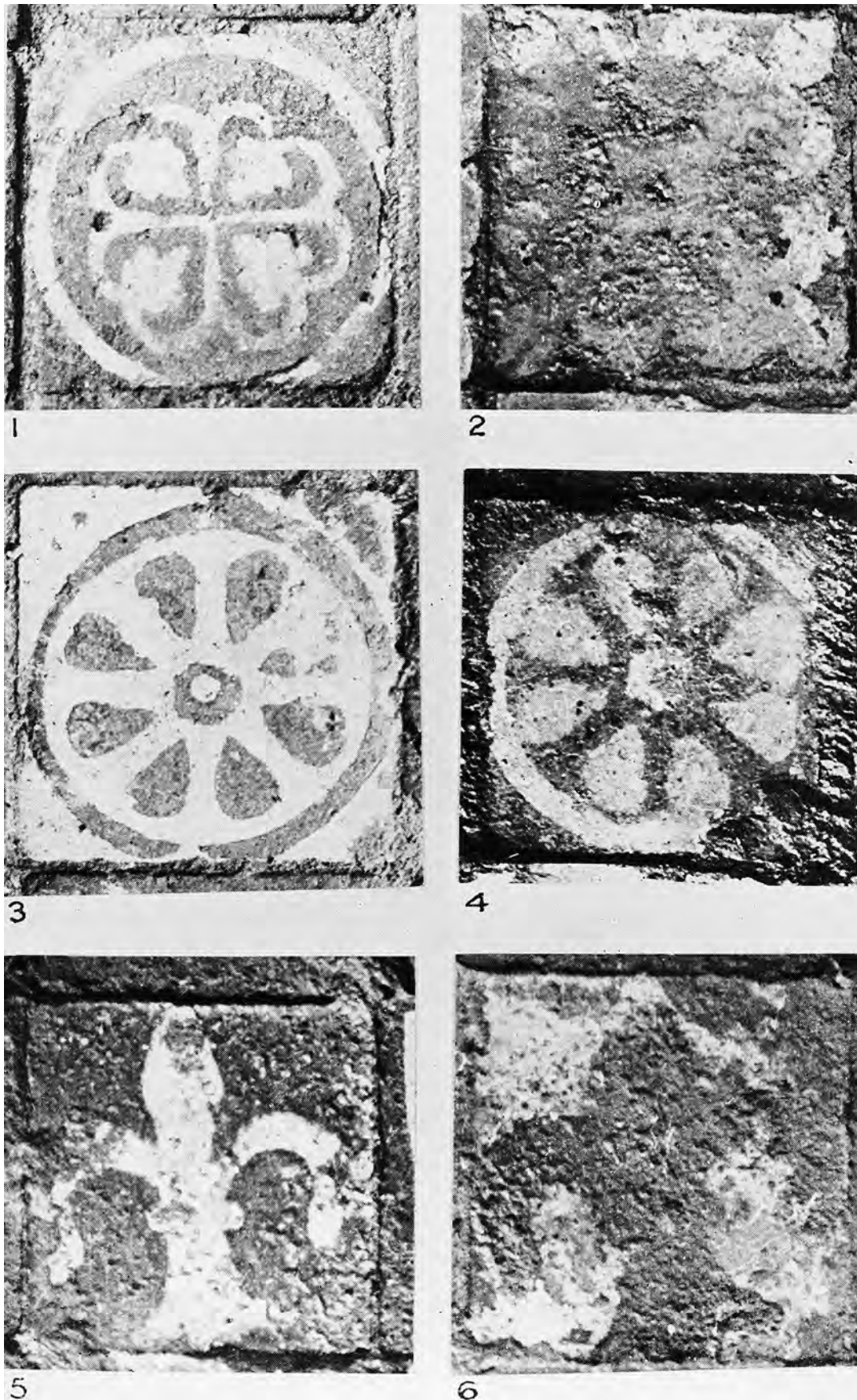


Fig 15.3: Other Decorated Mosaic (Group 8) found at Newminster Abbey: small square tiles. No. 2 can be compared with design 7.76 and Nos 3 and 4 with design 7.75 of the Decorated Mosaic Group. Extant examples of nos 4 and 5 are drawn in Fig 15.1 (designs 8.3 and 8.4). Honeyman et al. 1929. Scale approximately 85% full size. Reproduced courtesy of the Society of Antiquaries of Newcastle upon Tyne

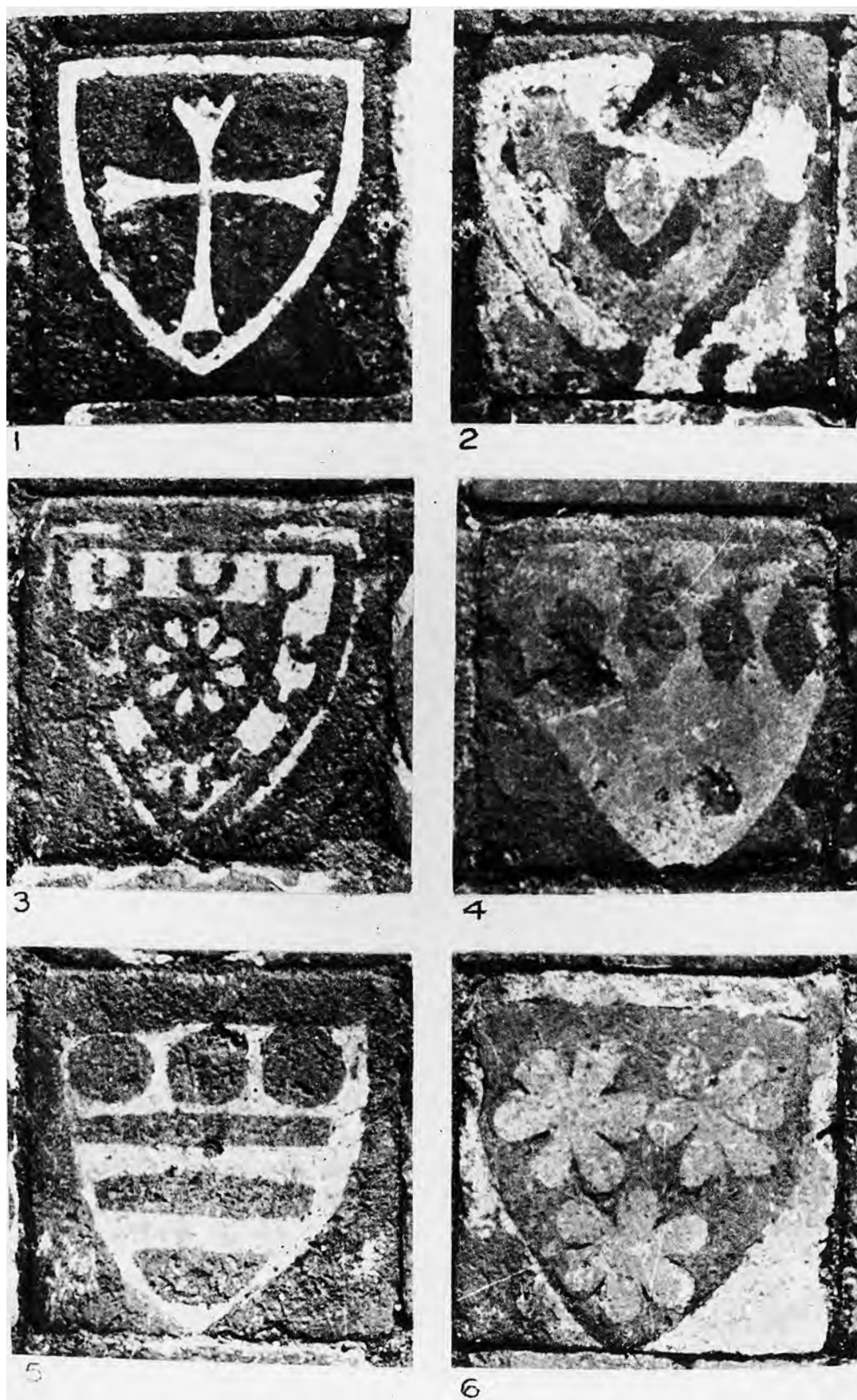


Fig 15.4: Other Decorated Mosaic (Group 8) found at Newminster Abbey: small square tiles with heraldic designs. Honeyman et al. 1929. Scale approximately 85% full size. Reproduced courtesy of the Society of Antiquaries of Newcastle upon Tyne

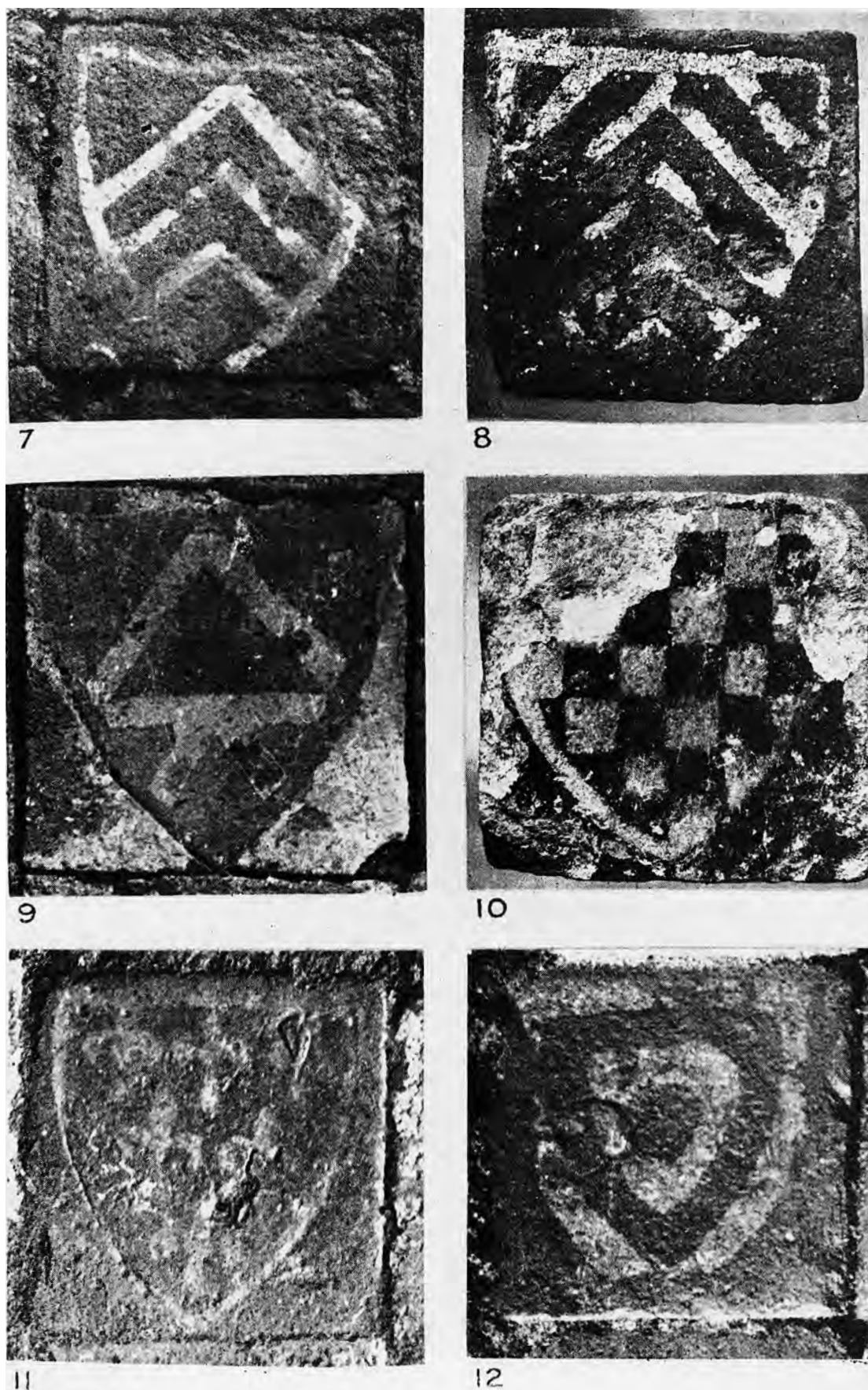


Fig 15.4 (cont'd): Other Decorated Mosaic (Group 8) found at Newminster Abbey: small square tiles with heraldic designs. Honeyman et al. 1929. Scale approximately 85% full size. Reproduced courtesy of the Society of Antiquaries of Newcastle upon Tyne

Treatment of tile sides: Slightly angled.

Treatment of bases: No keys, some bases coated with sand and some without.

Quality: No damage.

Discussion

Comparison of the designs with those of the Decorated Mosaic Group established that there were no exact parallels with the rectangular or shaped tiles from Newminster. The closest parallel was between the centrepiece of the Newminster roundel shown in Figure 15.2 and the antiquarian drawings of the centrepiece of the roundels at Jervaulx (Figs 14.2–14.4). The closest parallel to design 8.1 was the rectangle recorded by the antiquarians as running down the central strip of tiling in the choir at Jervaulx (shown in Fig 14.13, not extant). There were greater similarities between a few of the small square tile designs of the two groups, in particular designs 7.75 and 7.76 (Fig 14.1g) and 8.4 (Fig 15.1) and no. 2 (Fig 15.3). The heraldic designs recorded at Newminster (Fig 15.4) were also similar in style to those recorded by the antiquarians at Jervaulx (Fig 14.13), although none of the designs were replicated at the two sites. In his discussion of the Newminster tiles, Hunter Blair suggested that the heraldry related to prominent local families and this would explain the absence of the same designs at other sites.

The lack of many extant examples of the small square tiles, and the poor condition of the survivors, made comparisons difficult. The white clay of the Newminster tiles was not like that which distinguished Decorated Mosaic tiles from Jervaulx and Scarborough, and their oxidised, orange fired body fabric was unlike both the low iron fabric of Decorated Mosaic from the Humber sites and the predominantly reduced Decorated Mosaic tiles from Kirkstall and Thornton.

From the available evidence it seems unlikely that the Newminster tiles were made by the Decorated Mosaic tilers. Although there are clear stylistic similarities, there are few exact parallels among the designs of the two groups. The closest parallels were among the small square tiles but there are few extant examples of these in either group. At Newminster, there was no evidence for the use of either the medium-sized square tiles or the large roundel arrangements that typify the main Decorated Mosaic assemblages. The Newminster tiles were, therefore, interpreted as a separate production group, with the tilers working in

much the same stylistic tradition as those in Yorkshire. Two unprovenanced shaped tiles in the Yorkshire Museum with heraldic designs similar to those at Newminster and Jervaulx suggest that further variations on Decorated Mosaic tiling were also being produced in the region (see Group 9, below).

Dating

There is no archaeological evidence for the date of the Newminster tiles. Stylistically, the comments made in relation to the Decorated Mosaic Group also apply to the Newminster tiles. Hunter Blair identified five of the arms on the Newminster tiles using the two earliest known rolls of arms and concluded that they could represented prominent Northumbrian figures of the 13th century (Glover's Roll was compiled c.1245 while St George's Roll is thought to date about 20 years later but to contain earlier arms). Heraldic designs are not generally known on tiles before the last quarter of the 13th century.

Tile Group 9 (Fig 15.5)

These tiles are similar in design to the simple heraldic arms of the Newminster Abbey tiles (Group 8), but are on wedge-shaped quarries, suggesting that they were intended for use in a roundel arrangement.

Site: Unprovenanced but possibly York (see entry 109, Chapter 27: *York: the railway station*).

Sample: Two tiles, not fully recorded.

Designs: Nos 9.1 and 9.2 (Fig 15.5). A design similar to 9.2 occurred in reversed colours at Newminster Abbey (Fig 15.4, No. 5).

Concordance: Yorkshire Museum, Brook/75; 76.

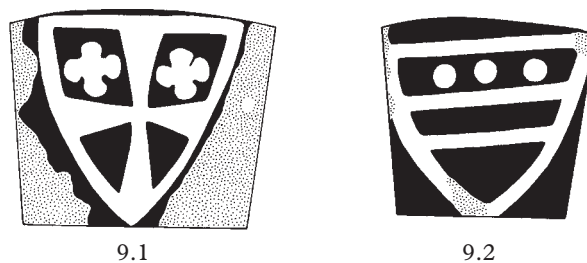


Fig 15.5: Group 9 design drawings. Scale 1:3

16 Line impressed mosaic from the north-west (possibly earlier 14th century)

Two distinct groups of line impressed mosaic tiles are known from Bolton Priory and Lancaster Friary. They lie outside the main distribution area for this type of tiling, which tends to be found on sites across the middle of England and in Wales and Ireland.

Tile Group 10 (Figs 16.1–16.3)

Sites: Bolton Priory; probably not Fountains Abbey (see Chapter 27 for details).

Sample and condition: Twelve tiles, two unworn, four fully recorded. The small number of extant examples are scattered across various collections.

Mosaic arrangements: The 19th-century paving now in the chancel of the parish church at Bolton (the nave

of the priory church) was laid in 1867 as part of Street's restoration (Fig 27.1). Some of the tiles were copies of medieval examples found on the site and their layout may, to some extent, have imitated the medieval floor. If so, the arrangement of these tiles, and the shapes of the extant medieval examples, suggest that the Bolton floor was of similar arrangement to that from Pipewell Abbey, Northamptonshire (Eames 1980, 2, LXIII).

Shapes, size: Shaped tiles as shown in Figure 16.2. Squares, 131–132mm. Rectangles, 156 × 72mm; 127–132mm × 63–65mm; unknown × 39–40mm. Circular, dimensions uncertain (from unscaled excavation photograph, Fig 16.1). The tiles were 23–30mm deep (with one outlier). The variety of shapes in the group was extended by dividing up the c.130mm square tiles in a number of ways. Some tiles of design 10.9 were



Fig 16.1: Tiles found at Bolton Priory in 1928, now lost, including Group 10 designs 10.1, 10.5, 10.7–10.10 (Fig 16.2); Transpennine Group designs 23.36 and 23.19 (Fig 22.1), and Unallocated designs Un/8 and Un/9 (Fig 25.4) and Un/28 (top centre with two leopards or similar just visible; not illustrated elsewhere). A.H. Thompson 1928

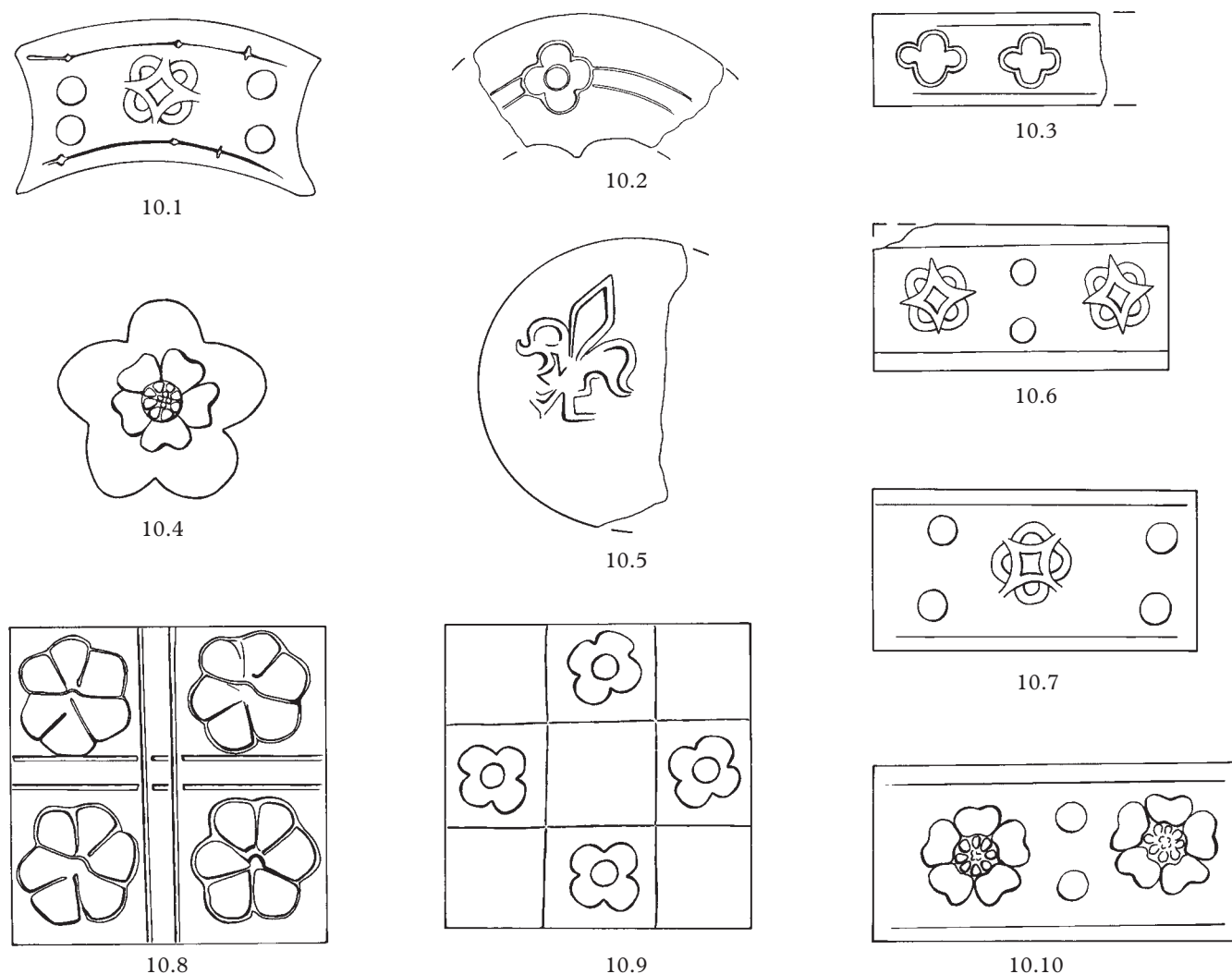


Fig 16.2: Line Impressed Mosaic Group (Group 10) design drawings. Scale 1:3

scored and split into triangles. The unprovenanced tile of design 10.9 in Leeds City Museum has the central small square detached. The lines scored on the example of design 10.9 in the excavation photograph appear shallow and may have been for decoration only. Those on the Leeds tile were sufficiently deep to split the tile up, potentially making nine squares of *c.*43mm. Taking out the centre square only was facilitated by boring holes into its corners, presumably when the tile was scored. The rectangular tile of design 10.6 was scored and split on its long side (probably divided from a square of *c.*130mm). However, the rectangular design 10.7 similarly measures 131mm on the long side and half this across but did not appear to have been scored and split. Likewise, the two fragments of design 10.3 (40–41mm across) could have come from a square tile divided into three but their sides showed no sign of being scored and split. It is possible that some of the tiles were cut apart following decoration, rather than being split following firing.

Designs: Ten designs, nos 10.1–10.10 (Fig 16.2). Design 10.5 is only known from an excavation photo-

graph (Fig 16.1). A small number of motifs were repeated in several of the designs.

Decoration: Line impressed, 1–3mm deep, either slip-coated or glazed over the body fabric. However, the lines that were impressed on to the slip-coated tiles did not have white clay in them, suggesting that these tiles were stamped after the thin slip had been applied and dried. As a result, the designs on the slipped tiles would stand out as brown or black lines against a yellow or olive background. Over the body fabric, the tiles glazed dark brown or green apart from the example of design 10.4, which was a lighter, reddish, brown. The linear designs would be far less visible on these tiles.

Design stamps: Tracings suggested that the same small stamps may have been used within and between the different designs. Small stamps may have been used for the rosettes in designs 10.4 and 10.10, the rosettes in designs 10.2 and 10.9 and the motifs in designs 10.1, 10.6 and 10.7. The clearest example was the rosette repeated four times in the photograph of the tile of design 10.8 (Fig 16.1). In this design, the line of the top

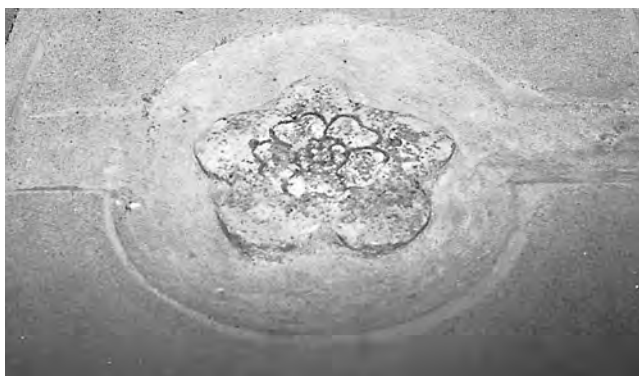


Fig 16.3: Design 10.4 at Bolton Priory, with peg holes

right petal does not run to the centre of the rosette, and this detail is repeated on all four rosettes.

Nail holes: The shaped tile of design 10.4, re-set under the altar at Bolton, had two circular holes of c.4mm diameter in the quarry (Fig 16.3). The tile was difficult to see but the holes were not like the nail holes found on late medieval tiles, which were generally much smaller and only pierced the upper surface. The holes in the Bolton tile looked as if they went well into, or right through, the quarry.

Firing: Partly reduced.

Fabric: Pale in colour, either white or pink, containing grog.

Treatment of tile sides: Vertical or slightly bevelled, no trimming.

Treatment of bases: Sandy, no keys.

Quality: Uneven surfaces to one example.

Discussion

The line impressed mosaic tiles at Bolton are reminiscent of material known from various sites across the country but there are no exact parallels (see, for example, Keen 1970; 1979, 47–57; Eames 1980, 1, 40–3; Eames and Keen 1972; pl XX; Eames and Fanning 1988, 118; Greene 1989, 132–44; Lewis 1999, 183–6). At both Meesden Church, Hertfordshire, and Pipewell Abbey, Northamptonshire, small rosettes and fleur-de-lis similar to those at Bolton were found on shaped tiles, but in no case were the same stamps used. At several sites, including Meesden, Pipewell, All Saints' Church, Icklingham, Suffolk, Prior Crauden's chapel, Ely, Cambridgeshire, and (probably) at Llanfaes Friary, Anglesey, part of the floors were arranged in Eames' Mosaic LXIII. The scale and curvature of the Bolton tiles suggested that they were not used in precisely this arrangement but were probably laid out on similar lines.

The holes on the re-set tile of design 10.4 were comparable to those on shaped tiles from Norton Priory, Runcorn, Cheshire, which in some cases went right through the fabric. Similar depressions may also occur on tiles from Anglesey (Lewis 1999, 78). A design comparable to 10.8 and 10.9 was found at the Benedictine nunnery in Chester (Rutter 1990, 103/52). It would appear that the line impressed mosaic at Bolton had stylistic links with material further south but there was no evidence to suggest that the same workshop or tiler was involved at any of the other sites.

Dating

There is no evidence for the date of the use of these tiles at Bolton Priory. Dates for stylistically similar tiling elsewhere have been put in the first half of the 14th century (Eames and Keen 1972, 65–70; Keen 1979, 47–57; Eames 1980, 1, 84 and 91–2; Greene 1989, 143–4). The only absolute date is provided by an Accounts Roll from Ely, which gives 1324/5 as the construction date for Prior Crauden's chapel (discussed by Eames 1980, 1, 91). The pavement in that chapel must therefore be from 1324/5 or later. An account for 1345/6, referring to building work in the church, included several purchases of many thousands of paving tiles. Only a relatively small number of tiles were needed for Prior Crauden's chapel, but line impressed mosaic tiles were used elsewhere at Ely, for example in the south transept (Keen 1979, 53), and it remains possible that this account included the purchase of all these tiles.

The other site with independent dating is Norton Priory, where a coin suggested the first quarter of the 14th century for the line impressed mosaic pavement uncovered in the transepts and crossing of the abbey church (Greene 1989, 137–8). Shaped line impressed tiles at other sites have been dated on comparative grounds. As in those cases, it is only possible to suggest that the Bolton assemblage would date sometime in the early/mid 14th century if it were made at the same time as this type of tiling elsewhere in England.

Tile Group 11 (Fig 16.4)

The line impressed mosaic tiles from Lancaster were made in the same general tradition as the tiles from Bolton Priory but they are not thought to be products of the same workshop. A larger assemblage of these tiles was published by Penney *et al.* in 1982, suggesting that some of the tiles have been lost in recent times.

Site: Lancaster Dominican Friary.

Sample and condition: 23 examples of 13 different shapes, plus 46 unidentifiable fragments, are extant. A further 20 shapes were published in 1982. All the extant tiles are worn.

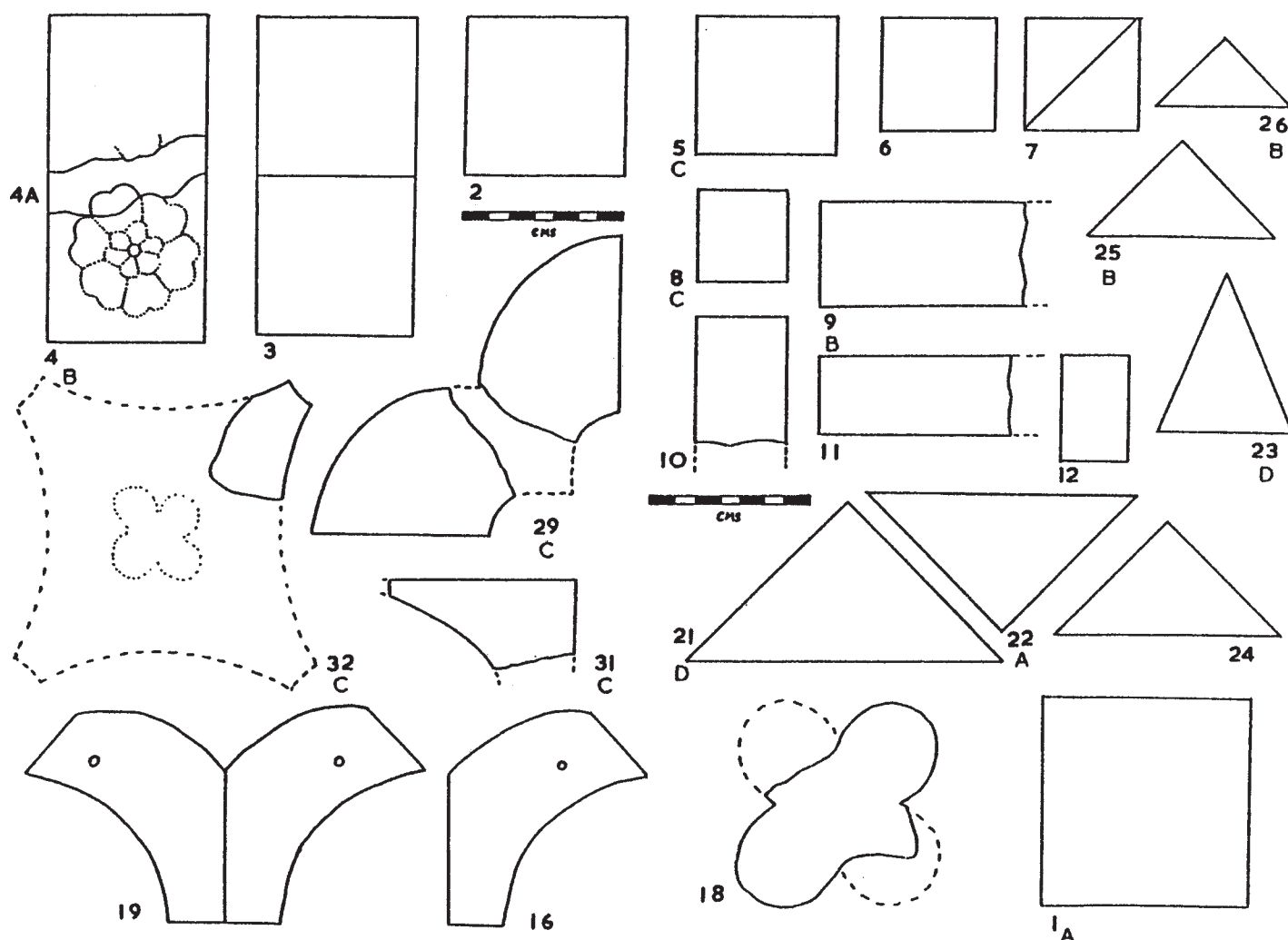


Fig 16.4 (pp.187–8) Group 11 shape drawings, Lancaster Dominican Friary. Penney et al. 1982. Scale 1:3. Reproduced from *Contrebis* Vol 10, 1982, by courtesy of the Lancaster Archaeological and Historical Society

Shapes, size: Fig 16.4 shows the shapes published in 1982 (numbered P.1–33). There are extant examples of 2, 4 (but without the rosette), 6, 7, 9, 15, 20, 21, 23, 26, 28, 31 and 32. Several of the shapes had scored and split sides, having been divided up from larger tiles. Depth was generally *c.*30mm but varied, 20–33mm.

Designs: A fragment, with a small part of what was thought to be a six-petaled line impressed rosette design, was published in 1982 (Fig 16.4, 4A) but is not now extant.

Decoration: Some of the extant tiles had straight scored lines of 1–2mm deep, probably decorative. The depth of slip varied from a thin skim to 1mm. The slipped tiles fired yellow or olive. Examples without slip were dark green, dark brown or black.

Nail holes: Round holes, 3–4mm across and 20mm deep, were present on the upper surfaces of some of the more unusual shapes. A 2mm diameter nail hole, 4mm deep was found on the side of one tile.

Firing: Oxidised.

Fabric: Laminated, quartz size variable, size up to 2mm and 20% frequency. No other inclusions (fabric code 8; see Chapter 9).

Treatment of tile sides: Slightly angled.

Treatment of bases: No keys, coarse sand.

Quality: No damage.

Discussion

Although the Lancaster assemblage did not include any of the same shapes or designs found among the line impressed tiles of Group 10 from Bolton Priory, there were some stylistic similarities between the assemblages (for example, the grid of design 10.9, the rosette of design 10.4 and the shape of the tile with design 10.1). Also, the holes in the tile of design 10.4 at Bolton are similar to those on some of the more

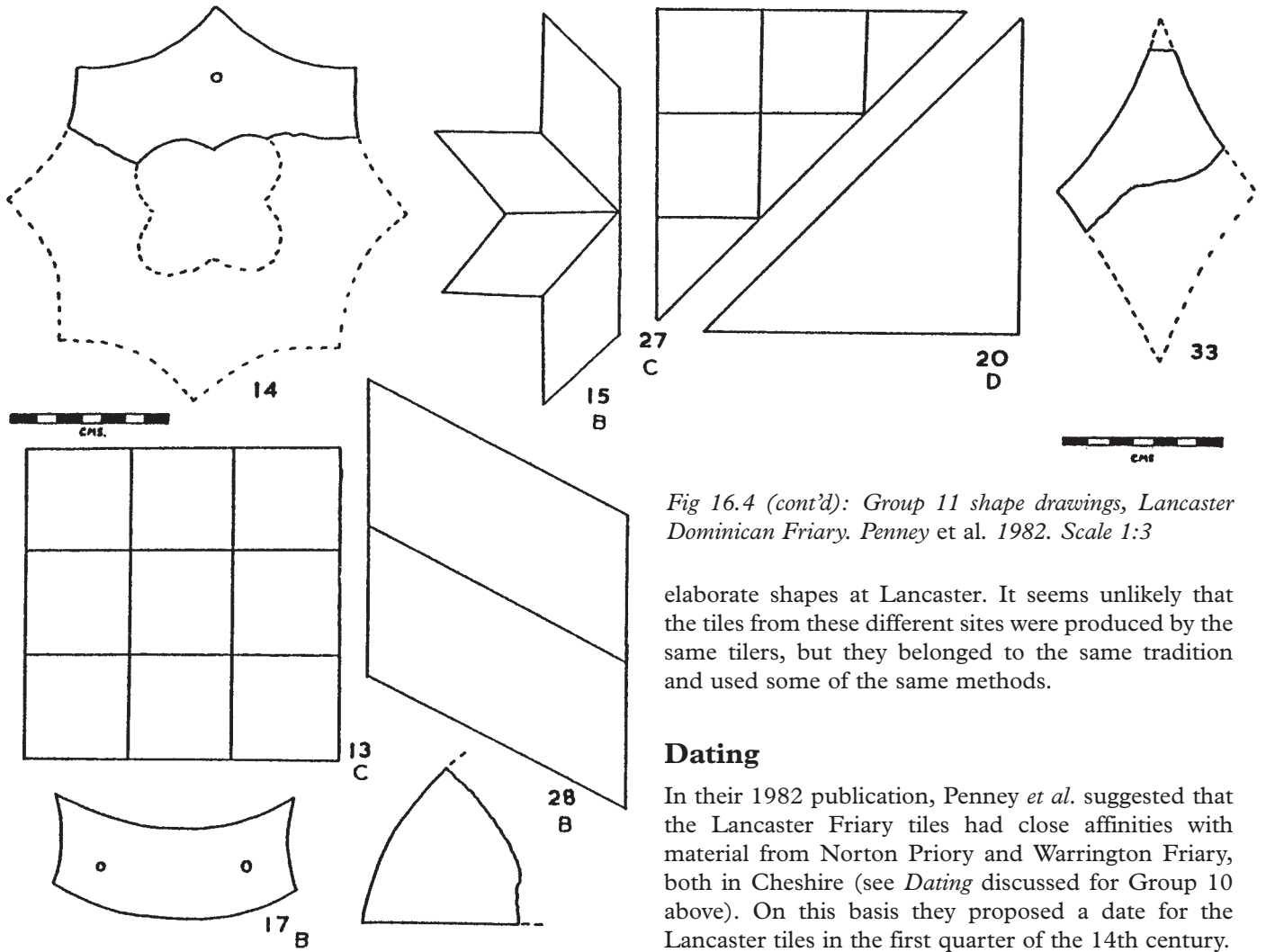


Fig 16.4 (cont'd): Group 11 shape drawings, Lancaster Dominican Friary. Penney et al. 1982. Scale 1:3

elaborate shapes at Lancaster. It seems unlikely that the tiles from these different sites were produced by the same tilers, but they belonged to the same tradition and used some of the same methods.

Dating

In their 1982 publication, Penney *et al.* suggested that the Lancaster Friary tiles had close affinities with material from Norton Priory and Warrington Friary, both in Cheshire (see *Dating* discussed for Group 10 above). On this basis they proposed a date for the Lancaster tiles in the first quarter of the 14th century.

17 Various mosaics at Holm Cultram Abbey (date unknown)

Tile Group 12 (Figs 17.1–17.3)

Tile Group 12 consists of designs known only from an antiquarian drawing of a patch of tiles uncovered in 1906 in the abbey church at Holm Cultram. The designs show some stylistic similarity to square tile designs of the Decorated Mosaic Group.

Site: Holm Cultram Abbey.

Sample and condition: No extant examples. The tiles were worn and/or abraded when recorded in 1906.

Shapes, size: Square, c.112 across.

Designs: Four designs, nos 12.1–12.4, known from Hodgson 1907 (Figs 17.1, 17.3).

Decoration: Two-colour.

Discussion

The two-colour designs recorded by T.H. Hodgson were those recognisable among a block of 35 worn tiles found near the doorway in the north choir aisle of the abbey church. The irregular layout of the tiles in Hodgson's plan suggests that they were not in their original location (Fig 17.2). The tiles discussed here are labelled 'white with black patterns' in Figure 17.2 and shown in detail in

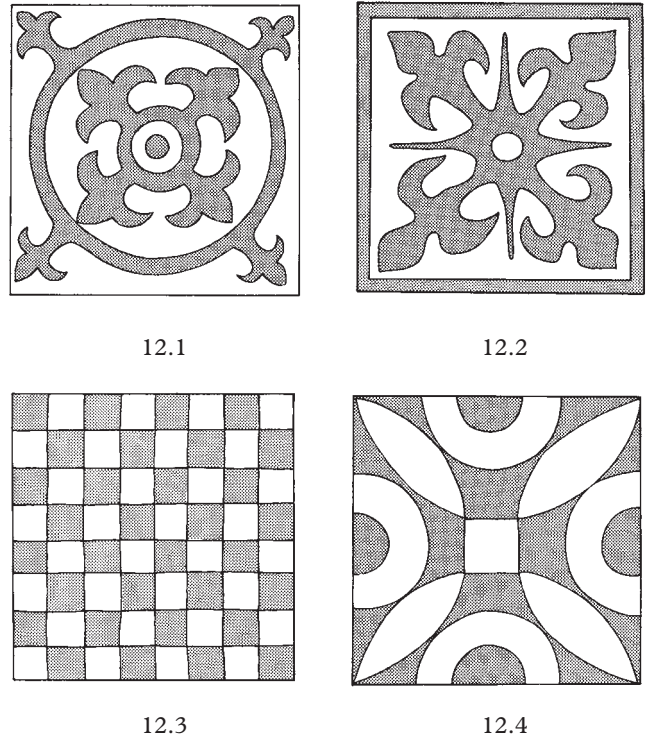


Fig 17.1: Group 12, Holm Cultram Abbey: designs drawn from antiquarian record. Scale 1:3

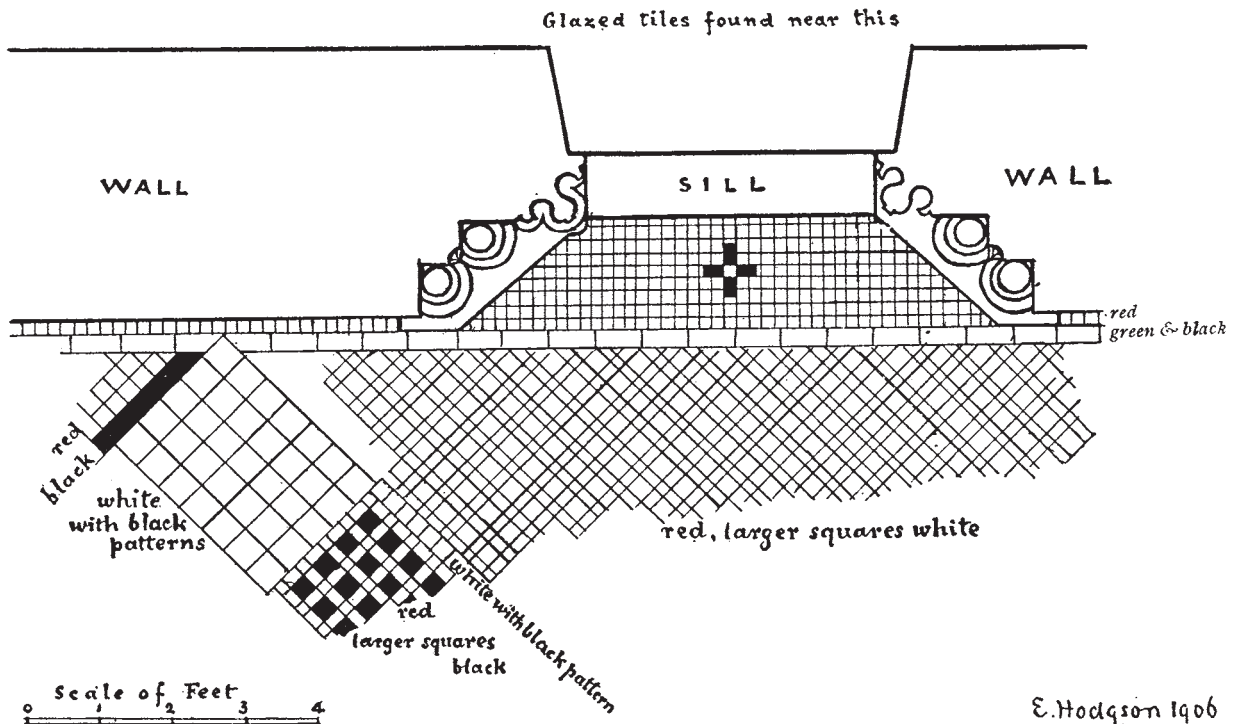


Fig 17.2: Holm Cultram Abbey: plan of tiled floor and doorway. T.H. Hodgson 1907 (Figs 17.2 and 17.3 reproduced by permission of the Cumberland and Westmorland Antiquarian and Archaeological Society)

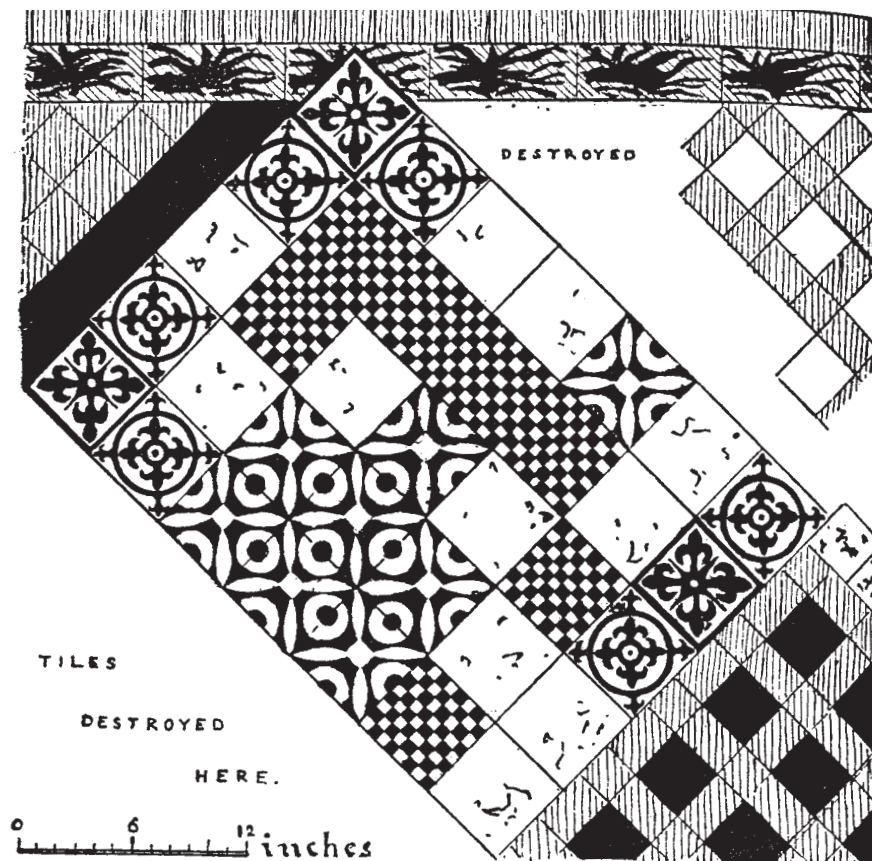


Fig 17.3: Holm Cultram Abbey: detail of decorated tiles, labelled 'white with black patterns' in Fig 17.2. T.H. Hodgson 1907

Figure 17.3. As noted above, the designs are reminiscent of Decorated Mosaic (for example designs 7.137/7.141, the negative of 7.128, and a four tile set of design 7.85). However, only the simple chequered design of 12.3 is exactly paralleled at other sites (Watton, Whalley, Fountains) and this design is found in several different production groups (Decorated Mosaic, Group 25 and Group 26).

Dating

Unknown.

Tile Group 13 (Figs 17.2, 17.4–17.5)

Tiles re-set in the church at Holm Cultram include one decorated hexagonal tile. As with Group 12 from Holm Cultram, very little is known about these tiles but they might be associated with some mosaic arrangements noted in the antiquarian records.

Site: Holm Cultram Abbey.

Sample and condition: Four hexagonal tiles (one with decoration) and sixteen 70mm square tiles are re-set in the church. One 70mm square tile from the site is the only example in a loose collection. All examples apart from the decorated hexagonal are worn.

Mosaic arrangements: The re-set tiles give no clue to their original layout but an M.36 mosaic arrangement, with a central hexagon, was recorded by Gilbanks and Oldfield in 1900 (Fig 17.5). Other possible mosaic tiles included an area of light-coloured 50mm squares laid in the doorway in the north choir aisle of the abbey church, with dark-coloured tiles used to make a cross in the centre (recorded by Hodgson in 1907; see Fig 17.2). Hodgson's drawing also showed an adjacent area apparently of Mosaic M.25 (trellis). This arrangement occurred in both colour-ways. A line of 75mm squares had been patterned (dark on light), according to Hodgson's record, but the designs were almost entirely effaced.

Shapes, size: S.58 (hexagonal) and 70–75mm squares. The loose tile was 42mm deep.

Design: The hexagonal tile was decorated with design 13.1 (Fig 17.4).

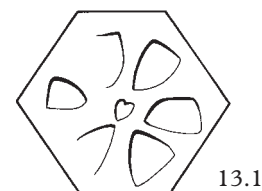


Fig 17.4: Group 13, Holm Cultram Abbey. Scale 1:3

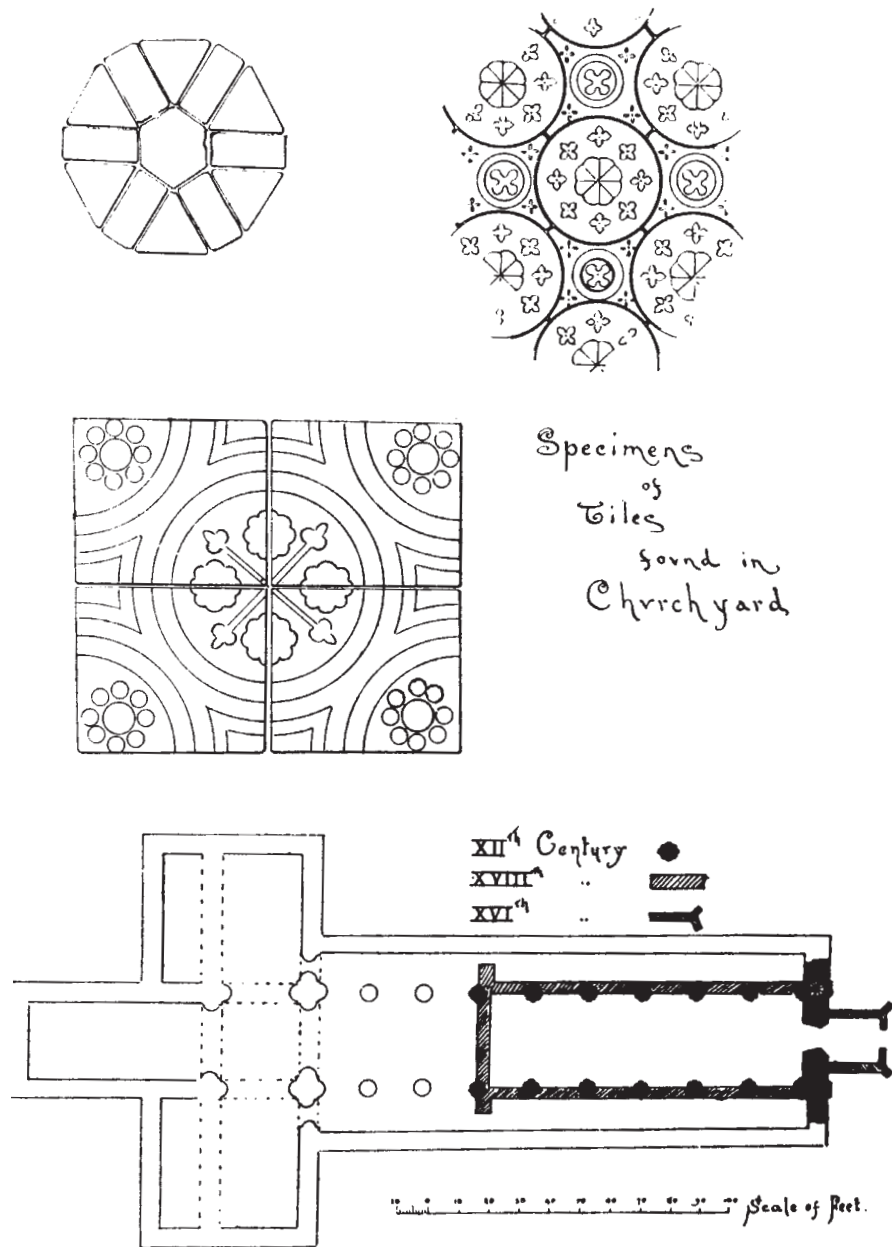


Fig 17.5: Tiles found in the churchyard at Holm Cultram Abbey, now lost. Clockwise from top left, Mosaic 36 (Group 13); possibly line impressed mosaic (Group 14, see p.192) and design 28.1(Chapter 24). Gilbanks and Oldfield 1900

Decoration: The design was in counter relief, lightly impressed on to the quarry. This tile was glazed brown with patches of yellow and olive suggesting that it had a slip coating. The plain examples were dark brown or black.

Nail holes: None.

Firing: Partly reduced.

Fabric: No information.

Treatment of tile sides: Vertical, sharp edged.

Treatment of bases: Sandy, no keys.

Quality: Some horizontal cracking of fabric.

Discussion

Little can be said about the Holm Cultram assemblage given the limited number and inaccessibility of the extant examples. It is certain that the extant tiles were not part of the Plain Mosaic series. The glaze on the extant tiles was unlike that on Plain Mosaic examples, as was the unsuccessfully executed design. Also, the single small square tile in a loose collection did not have a keyed base. However, there is a broad resemblance to Plain Mosaic in the shapes and sizes of the extant tiles and in some of the layouts in the antiquarian record. Plain Mosaic could have been the inspiration for these tiles.

Dating

The dating is unknown. If the motif in the centre of design 13.1 was really intended as a heart this might indicate a 14th-century or later date on stylistic grounds.

Tile Group 14 (Fig 17.5)

As shown in Figure 17.5, a type of line impressed mosaic was also recorded by the antiquarians working

at Holm Cultram Abbey (Gilbanks and Oldfield 1900). There are no extant examples of these tiles and no direct parallels with material elsewhere. The most similar paving within the study area was Group 10 at Bolton Abbey (see Chapter 16).

Although the tiles from Cultram Abbey have been set out in separate groups here, they show broad stylistic similarities to various different types of mosaic found elsewhere in the study area. It is possible that the Holm Cultram tiles were all made by the same tiler, in imitation of tiling styles in use elsewhere in the region.

18 The Nottinghamshire tile group (c.1325–1365)

Tile Group 15 (Figs 18.1–18.2, 27.46)

The Nottinghamshire tile group has been identified and studied on a regional basis by several authorities working in the north-west midlands, in particular by Llewelyn Jewitt (1852; 1868; 1871), John Ward (1892), Alfred Parker (1932) and Norma Whitcomb (1956). Norma Whitcomb's work is particularly valuable, publishing details of form and fabric as well as design and providing an overview of the series. Tiles from the midlands in the British Museum collection, and those from the rescue excavations at Chilvers Coton, have been studied by Elizabeth Eames (1980, 1, 230–4; 1984, 173–85). Scientific fabric analysis of material from some north midland sites has also been carried out (Cherry 1986).

The present study continues the regional trend, aiming only to identify tiles of Nottinghamshire type in the study area and compare them with tiles and published information from the midlands. The northern tiles belong to Whitcomb's Group IV. The drawings of the designs published by Whitcomb have been reproduced here at the (now) conventional scale of 1:3 (Fig 18.2). Several of the designs have also been re-drawn from northern examples where these show more detail (Fig 18.1). Whitcomb's design numbers (prefixed Wh/) were used as far as possible. Six new designs thought to belong to the Nottinghamshire series were allocated numbers in the same way as the other

northern tile groups (15.1–6). For the future, an updated and expanded study of the whole series would be extremely useful. An opportunity for this might be provided by a recently excavated assemblage of good quality Nottinghamshire tiles from the Augustinian friary, Hull.

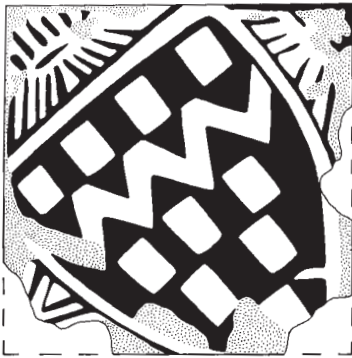
Sites, sample and condition: The numbers of well provenanced tiles surviving from sites around the Humber and places further north are small. The sites are listed in Table 18.1 and plotted in Figure 4.1. Many more tiles than those listed in Table 18.1 have been found at Gisborough Priory and in York but are now lost or unprovenanced. Several of the extant provenanced examples are on display, re-set or otherwise not available for study. Of c.150 tiles, only 27 were fully recorded with 13 of those being fragments. The extant examples were relatively unworn (64% had wear grades of 1 or 2). In the following analysis a distinction was not always made between individual tiles with certain or only possible provenances.

Shape, size: All examples were square, but of two, or perhaps three, different sizes. The dimensions grouped at 115–122mm and 130–141mm but the tiles in the larger size range may split into two further groups (discussed further below). All tiles had a depth of 19–26mm. Both large and small tiles have been found

Table 18.1: Sites, designs and numbers of tiles

<i>Sites</i>	<i>Provenanced designs</i>	<i>Extant tiles*</i>
Beningbrough Hall, York	Wh/80, Wh/144	None
Conisbrough Castle	Wh/100	1
Epworth Manor, Isle of Axholme	Wh/31, Wh/83, Wh/86, Wh/91, Wh/103, Wh/115	42
Gisborough Priory	Wh/30, Wh/42, Wh/50, Wh/52, Wh/74, Wh/90, Wh/101, Wh/105, Wh/110, Wh/120, Wh/135	8
Hull, Holy Trinity Church	Wh/110, Wh/120, Wh/127, Wh/131, Wh/133, Wh/136, variation on Wh/29 (Parker 5c)	18
Hull Old Town	15.2, Wh/38, Wh/50, Wh/59, Wh/63, Wh/73, Wh/80, Wh/86, Wh/101, Wh/120, Wh/133, Wh/135, Wh/144, variation on Wh/29 (Parker 5a), possibly Wh/100	c.30
Hull, Augustinian Friary	Assemblage being processed; includes an unworn example of 15.2	Five boxes
Rossington Manor, near Doncaster	15.1, Wh/35, Wh/44, Wh/54, Wh/70a, possibly Wh/40	2
Winterton Church	15.4, Wh/33, Wh/75, Wh/120, Wh/121, Wh/144	5
York, Micklegate	Wh/85, Wh/108	None
York, St Mary's Abbey	15.1, Wh/35, Wh/40, Wh/57, Wh/80, Wh/85, Wh/99, Wh/133 Possibly 15.2, Wh/24, Wh/30, Wh/38, Wh/44, Wh/46, Wh/70a, Wh/70d, Wh/86, Wh/100, Wh/109, Wh/110	c.25
York Minster	15.2, 15.3, Wh/74, Wh/83, Wh/101, Wh/105, Wh/120, Wh/133	12
York, site of railway	Possibly 15.1, Wh/33, Wh/40, Wh/46, Wh/47, Wh/49, Wh/54, Wh/70	1
York, elsewhere	15.2, 15.6, 15.5, Wh/74, Wh/144	6

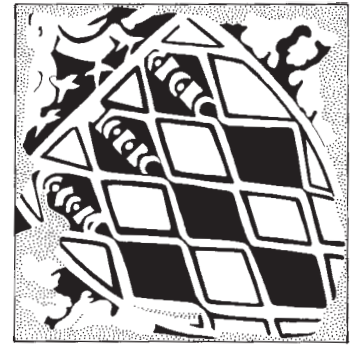
* Decorated tiles used in this analysis.



Wh/54



Wh/40



Wh/44



15.1



Wh/35



Wh/46



Wh/49



Wh/47



Wh/50



Wh/24



Wh/129



Wh/42

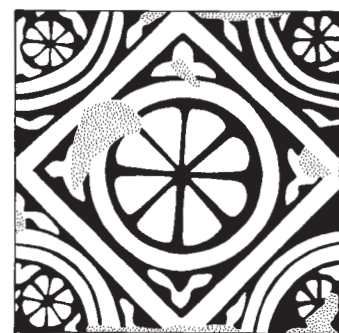
Fig 18.1a: Nottinghamshire Group designs found in the north of England: size/design group A. Design numbers after Whitcomb 1956, with additions. Scale 1:3



Wh/70a



Wh/80



Wh/100

Fig 18.1a (cont'd): Nottinghamshire Group designs found in the north of England: size/design group A. Design numbers after Whitcomb 1956. Scale 1:3



Wh/86



Wh/109



Wh/110



Wh/30



Wh/57



Wh/38



Wh/99

Fig 18.1b: Nottinghamshire Group designs found in the north of England: size/design group B. Design numbers after Whitcomb 1956. Scale 1:3

at Gisborough Priory and St Mary's Abbey, York, whilst only smaller tiles were used at York Minster, Epworth and Holy Trinity, Hull.

Designs: The 54 designs provenanced to sites in the north were Wh/24, 30–31, 33, 35, 38, 40, 42, 44, 46–47, 49–50, 52, 54, 57, 59, 63, 70a, 70d, 73–75, 80, 83, 85–86, 90–91, 99–101, 103, 105, 108–110, 115, 120–121, 127, 131, 133, 135–136, 144, variations on Wh/29. Also designs 15.1–6. The variations on Wh/29 may be as published by Parker (1932, nos 5a and c, not illustrated). Parker gave three versions of Wh/29 but his drawings were published at a very small scale and

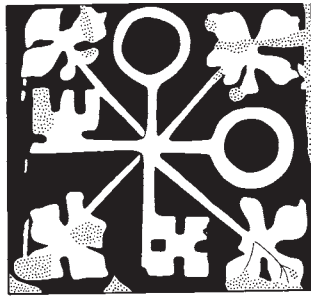
are not generally cross-referenced here. Designs re-drawn from northern tiles in Figure 18.1 have been arranged in three sub-groups, identified on the basis of size and design (discussed further below).

Most of the Nottinghamshire designs in the north would have been used as single repeating patterns or in sets of four, which would have posed few problems when laying a floor. The sixteen-tile pattern of Wh/70 was the only larger arrangement represented (Fig 18.2).

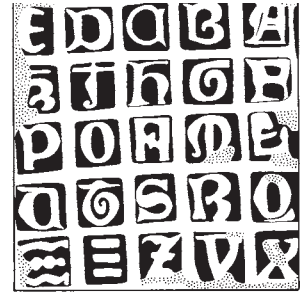
Design stamps: The use of the same stamp on sites in both the midlands and north was clearly demonstrated in one case and suggested a sequence for production.



Wh/74



Wh/120



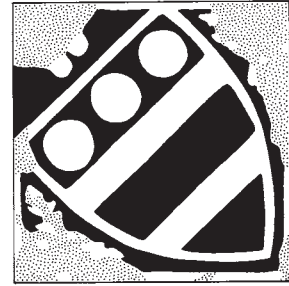
Wh/133



Wh/105



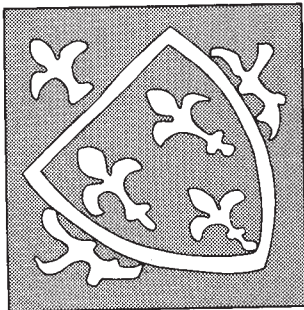
Wh/83



15.2



Wh/101



15.3



15.4



15.5



15.6

Fig 18.1c (above): Nottinghamshire Group designs found in the north of England: size/design group C. Design numbers after Whitcomb 1956, with additions. Scale 1:3

Fig 18.2: (pp.197–206) Nottinghamshire Group designs as recorded by Whitcomb 1956, nos 23–147. Republished at 1:3. (Reproduced with permission from Leicestershire Archaeological and Historical Society)



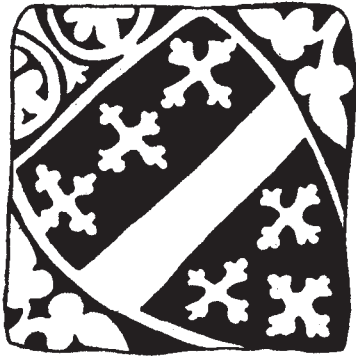
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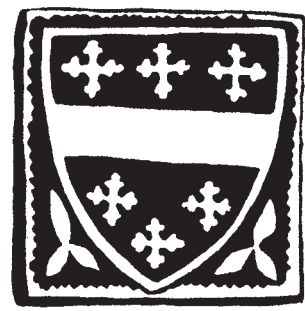
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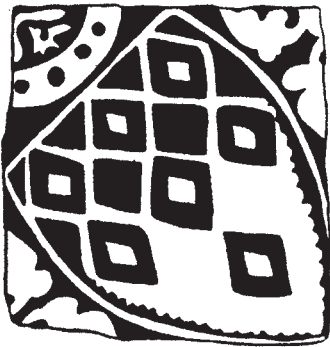
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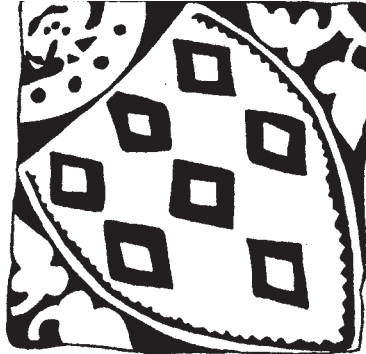
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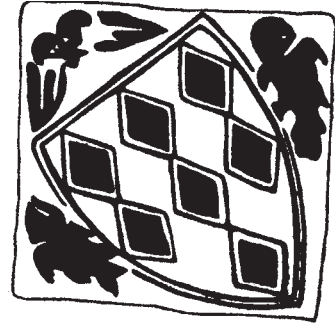
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Fig 18.2 (cont'd): Nottinghamshire Group designs as recorded by Whitcomb 1956, nos 23-147. Republished at 1:3



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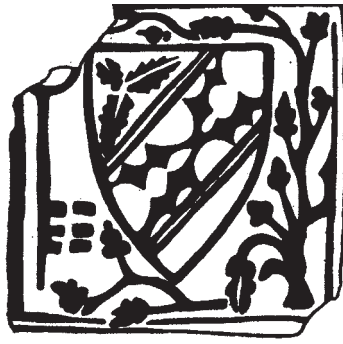
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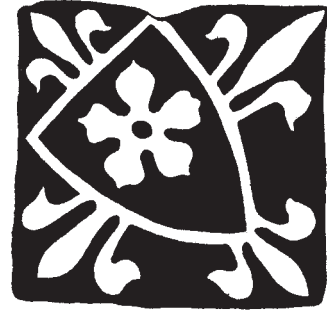
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64



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66



67



68



69



(a)
(b)

70

(c)
(d)



71



(a)

72

(b)



73.



74



75



76



77



78



79



80



81



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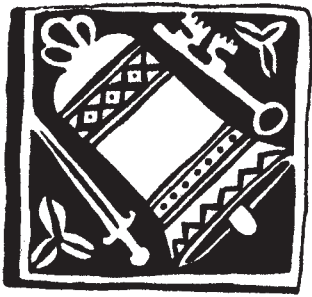
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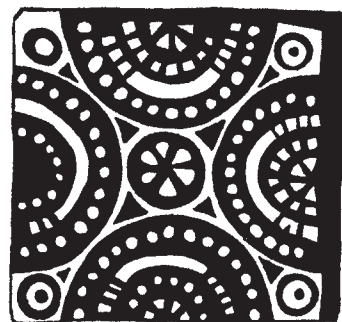
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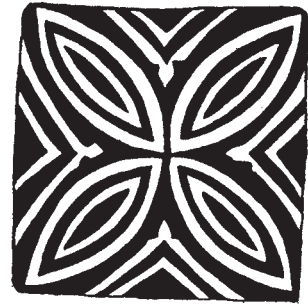
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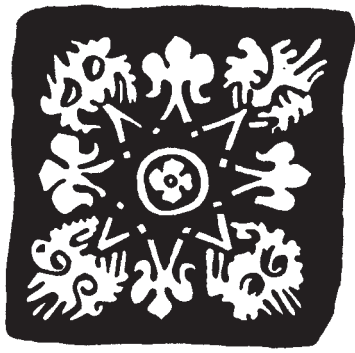
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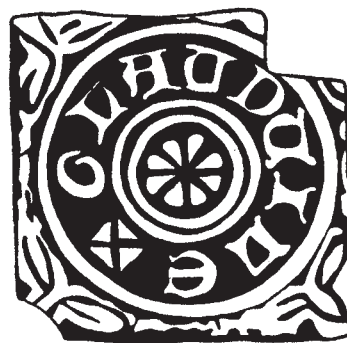
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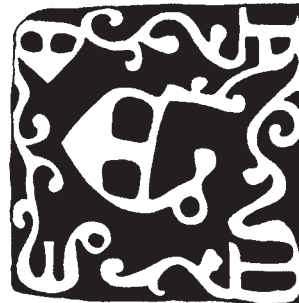
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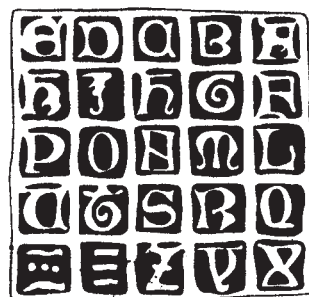


(a)

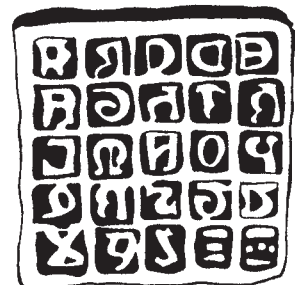
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(b)



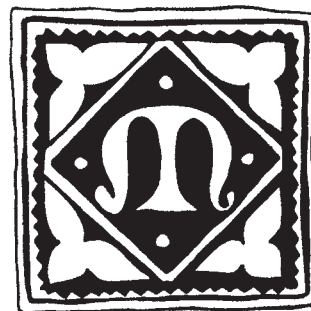
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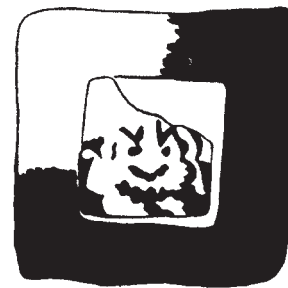
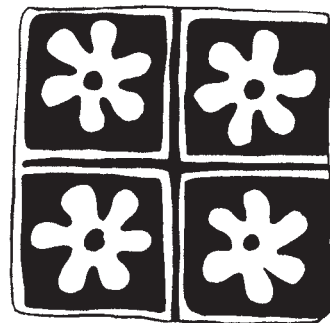
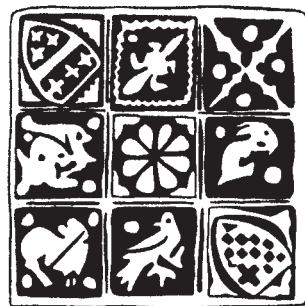
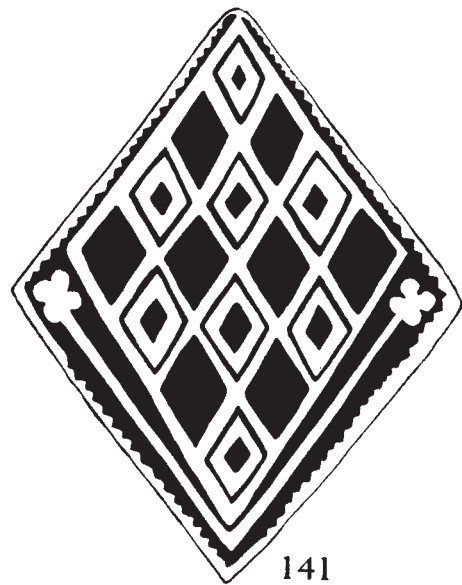


Fig 18.2 (cont'd): Nottinghamshire Group designs as recorded by Whitcomb 1956, nos 23–147. Republished at 1:3

A tile of Wh/30, possibly from St Mary's Abbey, probably from York, had a crack in the stamp visible across the body and one foreleg of the lion (Fig 18.1b) and perhaps the shield and tile frame. The same cracked stamp, drawn by Whitcomb, was used on tiles at sites in the midlands (Fig 18.2). The York tile could have been made earlier in the life of the stamp than the example drawn by Whitcomb, as the crack appeared wider in her drawing than it was on the York tile. A further example of this design, recently found in Hull, was also made with the same stamp. The crack on the Hull tile is slighter than that on either the York tile or in Whitcomb's illustration. This suggested that the Hull tile was made before either of the other two. Whitcomb noted that at some sites in the midlands the crack on this stamp had not developed (1956, 38). The stamp was, therefore, used to make tiles in the midlands both before and after it was used on examples in the north. A tile in the Yorkshire Museum was also made with a cracked stamp of Wh/100.

The cutting of the design stamps was variable in quality. The stamps were probably cut by several different people.

Decoration: Stamped and slip decorated. Depth of the slip was variable, 0.5mm–2mm, but usually gave a good coating to the design. The tiles fired to a dark brown or black and a strong yellow or orange-yellow. Occasionally they were brown and yellow or brown and olive (perhaps on less highly fired pieces).

Firing and fabric: The tiles were usually highly fired, sometimes to the point of vitrification. 50% were oxidised, 50% were partly reduced. The highly fired fabric appeared dark red and black. On less highly fired examples, it was orange. The fabric was homogeneous to the eye, well mixed, with a fine quartz content and few other inclusions (fabric codes 6 and 11; see Chapter 9 for fabric descriptions).

Nail holes: None.

Treatment of tile sides: The majority of the tiles had steeply bevelled sides, others were slightly bevelled.

Treatment of bases: All were sandy and without keys.

Quality: The Nottinghamshire tiles were competently made with a fairly well prepared fabric. The design stamps were detailed, though freely cut. The tiles may have been highly fired on purpose to promote the contrast between the glaze over the body fabric and the white clay. The results were effective.

Discussion

Several factors suggest that the Nottinghamshire Group tiles from northern sites were made in the mid-

lands and transported northwards, rather than being made in the north by travelling tilers. These were as follows:

- 1 The physical characteristics of tiles provenanced to sites in the north were the same as examples found further south and concurred with the characteristics described by Whitcomb as typical of Nottinghamshire tiles. The same design stamps were used to make tiles in both areas.
- 2 No differences in fabric were identified from visual inspection of Nottinghamshire tiles in the north and those further south. Scientific fabric analysis of a few Nottinghamshire tiles from Hull, carried out as part of another study, compared the fabrics of the Nottinghamshire tiles with other ceramics thought to have been made in Hull and with tiles in the north midlands (M.J. Hughes, pers. comm.). There was no identical match between the Hull floor tiles and any of the other samples, but the fabric of the Nottinghamshire Group tiles found in Hull was more similar to material from the midlands than to the locally made products.
- 3 Whitcomb noted that some of the designs made with cracked stamps in the midlands were not cracked on the examples found in Yorkshire (such as Wh/70) and concluded that some of the Yorkshire tiles were made earlier than many midland examples (1956, 10). As noted above, other stamps were cracked when used to make tiles found in the north. The extent of the cracked stamp on tiles of Wh/30 suggested that tiles in the midlands were made with this stamp both before and after it was used to make tiles in the north.
- 4 Lastly, dating evidence discussed below suggests that Nottinghamshire tiles in Hull had been purchased both early and late in the life of the workshop.

On the basis of size and design, three sub-groups were identified among the Nottinghamshire material from northern sites. These were:

- A) large design on largest quarry (see Fig 18.1a; Wh/35, 40, 42, 44, 46, 47, 49, 50, 54, 70, 80, 100, 129 and new design 15.1). Many of these designs were heraldic.
- B) small design stamp on larger quarry (see Fig 18.1b; Wh/30, 38, 57, 86, 109, 110 and possibly Wh/99). The quarries were only slightly smaller than those of sub-group (A).
- C) small design stamp on small quarry (see Fig 18.1c; Wh/74, 83, 101, 105, 120, 133 and new design 15.2).

Sub-groups (A) and (C) were also identified in the midlands by Whitcomb. Designs in sub-group (B) were on small quarries in Whitcomb, as at some northern sites, but on large quarries in York (probably from

St Mary's Abbey). Tiles of both the other sub-groups were also found at that site and in York generally. There was a mix of types from Gisborough Priory and, again in general, from Hull. However, at some sites only one design/size sub-group was represented. At Epworth Manor, Holy Trinity Church, Hull, Winterton Church and York Minster, all the extant tiles were of sub-group (C). At Rossington Manor, all examples were of sub-group (A). Designs Wh/86 and Wh/110 were on large quarries at St Mary's Abbey, York, but on small quarries at Epworth and at Holy Trinity, Hull. It seems likely that the different sub-groups represent different batches of tiles and that there were multiple purchases for some sites.

The location of kiln site(s) in the midlands making tiles for the northern tiles is not known. It is likely that the tiles were being shipped along the Trent to York, Hull and up the coast to Guisborough. Further work on the Nottinghamshire tile group would be rewarding, particularly looking at the co-variance of size and design, the production and use of more than one version of the same designs, and the occurrence of tiles made with cracked stamps in the midlands and elsewhere.

Dating

Whitcomb concluded that the manufacture of Nottinghamshire Group tiles began in the 1320s or 30s, with continuation after 1337 attested by designs bearing the three lions of England quartered with the lilies of France, adopted when Edward III claimed the French throne (1956, 10–11). Whitcomb suggested that production ceased in the 1360s or a little later. A much later date, with continuation into the 15th century, was suggested on the basis of the three fleurs-de-lis in the royal arms on one Nottinghamshire design (Parker 1932, no. 3; Eames 1980, 1, 230–1). The ancient French arms were blue with gold fleurs-de-lis *semy* (scattered evenly throughout). In about 1376 Charles V of France reduced the number of fleurs-de-lis to three (France Modern) and this form was adopted by Henry V of England around 1400 (Bedingfeld and Gwynne-Jones 1993, 115). However, three fleurs-

de-lis would also accord with the ancient arms of France, which did not specify a particular number. It is clear, in any case, that this design stamp is schematic since only two lions are shown.

In Hull, the tiles recently excavated from the Augustinian friary must date after the foundation of that site in 1317. A single example of Parker 5a (a variation on Wh/29) found in Monkgate, Hull, was in a context dated 1320–c.1347 (MY75.377) and its use would have pre-dated deposition here. At Holy Trinity Church, Hull, the tiles were found in the chancel which was constructed between about 1320 and 1370 (Hadley 1788, 788; Ingram 1969, 290–1). The tiles would be expected to date towards the end of construction work and would be later than the example in Monkgate. These dates accord with the range suggested by Whitcomb (c.1325–1365) and tentatively suggest that Nottinghamshire tiles may have been used in Hull towards both the beginning and end of Whitcomb's date range for the series. There is as yet little dating evidence from the northern sites outside of Hull. There seems little reason to connect the Nottinghamshire tiles from York Minster with the tomb of Archbishop Greenfield who died in 1315 (O'Connor 1979, 12). The location precise location of the tiled floor recorded by Fowler is uncertain (see entry 99, Chapter 27 and Fig 27.45) and no doubt there were many other occasions that might have prompted this paving.

Differences in date for the size/design sub-groups were unclear. Whitcomb felt that the large and small Nottinghamshire tiles were not of different dates but were the work of different tilers (1956, 17). However, no other manufacturing differences were apparent among the large and small sized tiles in the north. Whitcomb also suggested that the use of small stamps on large quarries was late in the life of the series (1956, 21). A design on a small-sized quarry in York Minster (Wh/83) was found on larger-sized quarries at sites in Derbyshire and at Leicester Abbey (Ward 1892, 133, no. 3; Whitcomb 1956, 62–3), perhaps giving a date earlier in the sequence for the York Minster tiles (illustrated in colour in Fig 27.46).

19 Fourteenth-century copies

The small tile assemblages detailed below are thought to relate very broadly to the Nottinghamshire Group. The dating and other evidence for these groups is very limited. They are interpreted as locally made imitations of Nottinghamshire and Decorated Mosaic tiles.

Tile Group 16 (Fig 19.1)

Sites: The tiles were found in Hull, at Manor Alley, Lowgate and possibly Suffolk Palace, and in York, on the Bedern Chapel site.

Sample and condition: Eight tiles were extant from Manor Alley, Hull, all complete, four were worn. A worn tile from Suffolk Palace, Hull, might have been an example of design 16.7. A half tile and two fragments from York (design unidentifiable on one) were worn.

Shape, size: Square, 127–137mm or, in the case of designs 16.8 and 16.9, 95–97mm. Depth 17–21mm except for design 16.8 which was 13mm deep.

Designs: Ten designs, nos 16.9–16.10 (Fig 19.1). Eight designs were found in Hull (nos 16.1–16.8). The drawings were based on those published by G.K. Beulah, which showed the designs ‘as the designer intended them to appear’ (Beulah 1931–4, 79–80). Two further designs were on the York tiles (nos 16.9–16.10).

Design stamps: Well cut, very lightly impressed in one case.

Decoration: Stamped and, in the case of the Hull tiles, probably slip decorated. On one example there was up to 1mm of white clay. However, the glaze was dark brown, black, grey or olive over the whole surface of all tiles. The York tiles were stamped and slip decorated or inlaid with 1mm of white clay and were glazed yellow, olive, orange over the white clay and brown or dark brown over the body.

Nail holes: None.

Firing: Partly oxidised, partly reduced.

Fabric: Laminated, fine sand with no other inclusions at York, firing pink/grey. Pale buff colour at Hull.

Treatment of tile sides: Irregular, either slightly or steeply bevelled.

Treatment of bases: No sand or keys. Bases uneven in some cases. Lines scratched on base of one tile from York.

Quality: The designs on the Hull tiles were barely distinguishable because the white clay was little different from the tile quarries, both firing to a similar colour. In two cases, the design was visible only because the slip and glaze had flaked off from the body. On the York tiles the inlay had also flaked from the quarries and the glaze may have been similarly undifferentiated when unworn.

Discussion

Design 16.1 was reminiscent of the crowned head of the Nottingham series (Wh/74; see Figs 18.1c and 27.46), a design probably based on 14th-century coinage. Others bear a general similarity to Decorated Mosaic designs and to material widely distributed in the south of England. The depth of white clay was reminiscent of the Nottinghamshire Group but quality was poor. The lack of technical expertise demonstrated clearly that these were not products of either the Nottinghamshire or Decorated Mosaic workshops. No evidence was found to support G.K. Beulah’s idea that the Hull tiles were made on the outskirts of the town in the de la Pole brickyard (1931–4, 79–80).

Dating

Uncertain. There was no dating evidence beyond the tile designs. The crowned head suggests a 14th-century date but, on stylistic grounds, several of the other designs could be of the later 13th century. Possibly these were archaic at the time of manufacture.

Tile Group 17 (Fig 19.2)

The designs of this group are the work of an artist but the maker lacked technical expertise in floor tile manufacture.

Site: Meaux Abbey.

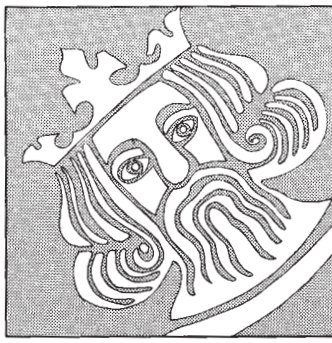
Sample and condition: Eight decorated examples, four of them fragments.

Shape, size: Square. 111–118mm × 18–24mm deep.

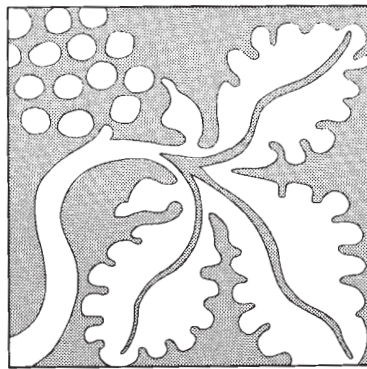
Designs: Six designs, nos 17.1–17.6 (Fig 19.2).

Design stamps: Skilfully drawn by an artist.

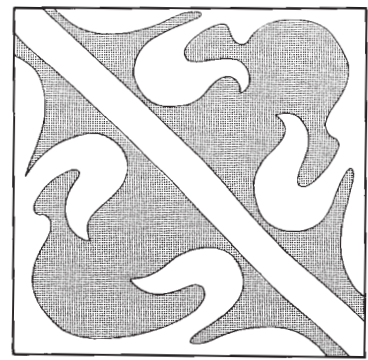
Decoration: The slip was barely apparent and the stamp impression was up to 2mm deep. Nonetheless,



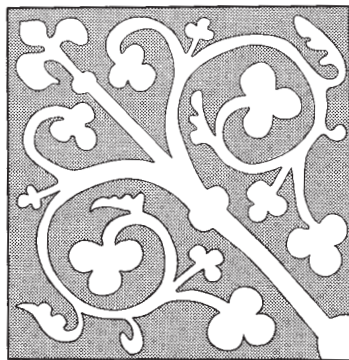
16.1



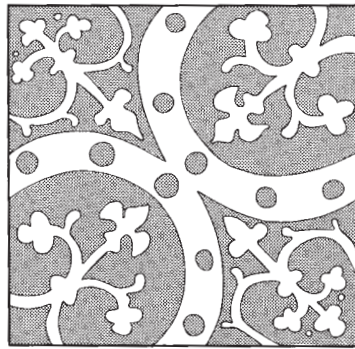
16.2



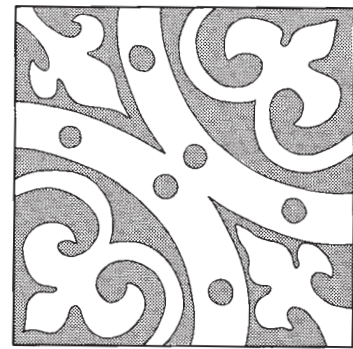
16.3



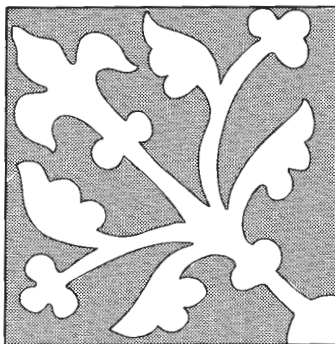
16.4



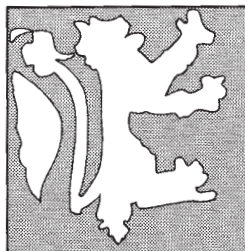
16.5



16.6



16.7



16.8



16.9



16.10

Fig 19.1: Group 16 design drawings. Scale 1:3

the decoration was probably intended to be two-colour, rather than counter relief. The tiles were mainly glazed dark brown but also with yellow, olive and green.

Nail holes: None.

Firing: Reduced.

Fabric: Smooth fracture, fine sand, no other inclusions.

Treatment of tile sides: Slightly or steeply bevelled.

Treatment of bases: Sandy without keys, some cracking where clay poorly mixed.

Quality: The glaze over slip and body was very poorly differentiated. A reaction of the glaze and slip was apparent on one example.

Discussion and dating

Manufacture was not successful and the designs are very difficult to see. On stylistic grounds, design 17.1 parallels the crowned head of the Nottinghamshire Group design, Wh/74 (see Figs 18.1c and 27.46), and suggests a date in the 14th century.



17.1



17.2



17.3



17.4



17.5

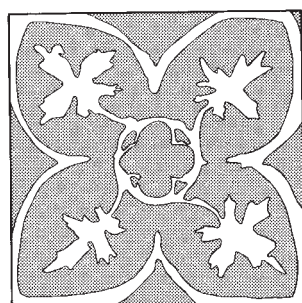


17.6

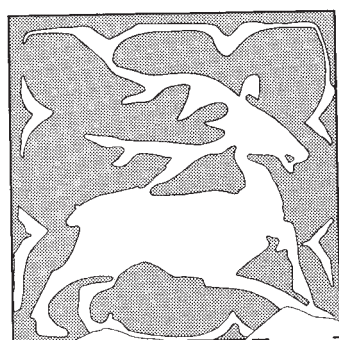
Fig 19.2: Group 17 design drawings. Scale 1:3

Tile Group 18 (Fig 19.3)

Two designs (18.1 and 18.2) were published following excavations in Hull Old Town (Watkins 1987, 232–4, fig 141, 1 and 2). The tiles are now lost but the excavation report suggested that they were of Nottinghamshire type. The tiles were slip decorated or inlaid and c.120mm square. They were found in post-medieval contexts.



18.1



18.2

Fig 19.3: Group 18 design drawings. Scale 1:3

Tile Group 19 (Fig 19.4)

Site: Tynemouth Priory, possibly from the Lady Chapel.

Sample and condition: Seven incomplete tiles or fragments, one worn, plus two fragments with unidentified designs comprise the loose collection. An area of tiling, re-set on the site of the Lady Chapel and now completely worn, may be of the same group. These tiles were recorded as decorated when found (see entry 87, Chapter 27: *Tynemouth Priory*) and their size and other characteristics appear similar to the loose examples.

Shape, size: Probably square, 106–108mm across and 15–18mm deep.

Designs: Five designs, nos 19.1–19.5 (Fig 19.4).

Decoration: Stamped and slip decorated, glazed yellow over the slip and brown over the body.

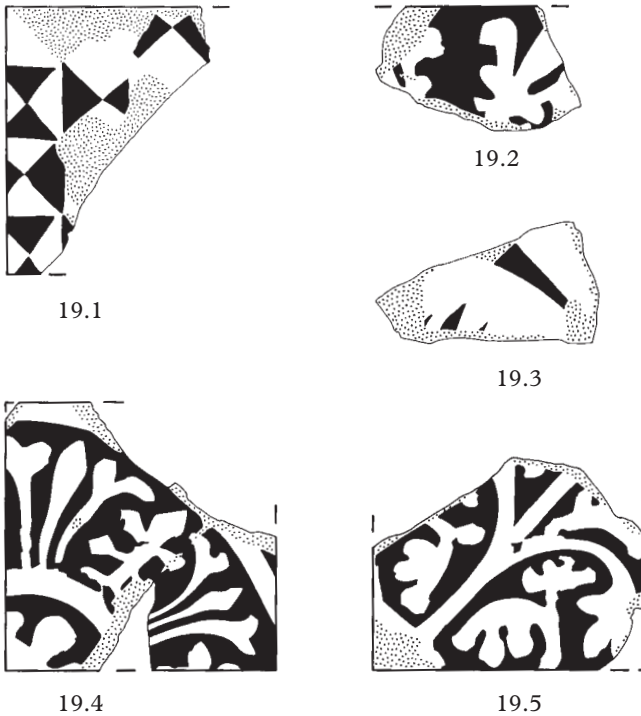


Fig 19.4: Group 19 design drawings. Scale 1:3

Nail holes: One in the corner of one tile, 20mm from tile edge.

Firing: Oxidised.

Fabric: Fine fabric, fired brick red, slightly laminated, no other inclusions.

Treatment of tile sides: Vertical or slightly bevelled.

Treatment of bases: Sandy without keys.

Quality: The designs were smeared on two tiles.

Discussion

The gyronny design 19.1 also belongs to the Decorated Mosaic Group but the characteristics of the Tynemouth tile were the same as other tiles from this site and were not similar to the Decorated Mosaic tiles.

Dating

If the Lady Chapel was the original location for these tiles, they must date after its construction in *c.*1326 (Hadcock 1936, 135). The combination of decoration and nail holes is only otherwise known in the study area on tiles of the 15th-century Transpennine and Huby/Percy Groups. However, on stylistic grounds the tiles would be assigned to the 14th century. Design 19.1 and the stylised foliate design 19.5 were most reminiscent of the Decorated Mosaic series.

20 The Plain-glazed tile groups (14th, 15th and 16th centuries)

As explained in Chapter 9, Plain-glazed tiles are defined as square tiles, or square tiles scored and split into triangles, that were not decorated. The tiles were glazed, either over slip or over the body fabric, and fired. All the decorated tile groups in the north included some undecorated tiles, often used as borders or dividers between decorated examples. However, in the late Middle Ages, Plain-glazed tiles were made for use on their own. These are the tiles considered here. They were usually laid to give a simple chequered effect, alternating light and dark coloured examples (see, for example, Fig. 20.1).

Plain-glazed tiles were of little interest to antiquarian collectors and tend not to be represented in museum collections. Material from recent excavations is more plentiful but the samples kept are often small, in part because archaeologists are uncertain how far it is possible to characterise these types of floor tile sufficiently closely to provide evidence worthy of further analysis. What follows here is an attempt to see what levels of characterisation are possible for Plain-glazed floor tiles and to consider their potential for further study. This

section is not, therefore, concerned with a single tile group. All the Plain-glazed floor tiles that are not attributed to a decorated tile group are discussed here.

Sites, sample and condition

The surviving assemblages of Plain-glazed tiles are listed in Tables 20.1–20.3. The distribution of the tiles is plotted in Figure 5.1.

Where tiles are not extant or sample sizes are small and the tiles are worn, it is possible that the tiles had formed part of a decorated group. Assemblages with a small number of worn tiles included those from Eastgate and the Minster in Beverley, Lindisfarne Priory, Newminster Abbey, Scarborough Castle, Stockton Castle, Thornholme Priory and Winteringham Church (Table 20.1). Sites where there were records of plain tiles but no extant examples included Beverley Lurk Lane, Hexham Abbey, Meaux Abbey, Newcastle Dominican Friary, Pontefract Priory, Scarborough Paradise Estate, Watton Priory and York at St Mary's Abbey and the Benedictine Priory, Micklegate (Table 20.1).

Table 20.1: Loose assemblages

<i>Site</i>	<i>Numbers of extant loose tiles</i>	<i>Site</i>	<i>Numbers of extant loose tiles</i>
Ayton Castle	4 fragments	Prudhoe Castle	1 tile, 5 fragments
Barton, St Peter's Church	1344 tiles/fragments (not fully recorded for this study)	Rievaulx Abbey	–
Beverley Minster	3 fragments, no details on provenance	Scarborough Castle	1 tile
Beverley, Lurk Lane	–	Scarborough, Paradise Estate	–
Beverley, Dominican Priory	c.30 fragments	Stockton Castle	2 fragments
Beverley, Eastgate	2 fragments	Thornholme Priory	1 fragment
Bridlington Priory	14 tiles/fragments	Thornton Abbey	37 tiles/fragments
Fountains Abbey	c.100 tiles/fragments	Tynemouth Priory	–
Gisborough Priory	90 tiles/fragments	Warkworth Castle	–
Hartlepool Franciscan Friary	10 tiles/fragments	Watton Priory	–
Hexham Abbey	–	Whalley Abbey	6 tiles/fragments
Howden Bishop's Palace	23 tiles/fragments	Whitby Abbey	25 tiles/fragments
Hull Old Town	189 tiles/fragments	Winteringham Church	2 fragments
Hull, Rotenheryng	1 tile	Wressle Castle	2 tiles
Hylton Castle	75 tiles/fragments	York:	
Jarrow Priory	51 tiles/fragments	Barley Hall	c.12 tiles/fragments, possibly now lost
Jervaulx Abbey	22 tiles	Bedern	2 boxes
Kirkham Priory	53 tiles/fragments	Benedictine Priory, Micklegate	–
Lindisfarne Priory	4 fragments	Clementhorpe Priory	3+ tiles/fragments
Meaux Abbey	–	Gilbertine Priory	204 tiles/fragments
Mount Grace Priory	15 tiles/fragments	Holy Trinity Church	4 tiles/fragments
Newcastle:		Minster	8 tiles/fragments
Carmelites/White Friars	1 box	St Mary's Abbey	–
Dominican Friary	–	St Mary Bishophill Senior Church	6 tiles/fragments
Old Town	6 boxes	St Mary's Hospital, Horsefair	10+ tiles/fragments
Newminster Abbey	1 fragment	Other	1 tile
Pontefract Castle	Several boxes – not fully recorded		
Pontefract Priory	–		

Table 20.2: Areas of Plain-glazed paving that remain on site

<i>Site</i>	<i>Plain-glazed tiles visible on site</i>
Durham Cathedral Priory	Refectory
Fountains Abbey	Part of north transept, patches in nave
Rievaulx Abbey	Western bay of nave and part of abbot's house
St Mary's Church, Beverley	Priest's room
St Peter's Church, Barton	Part of north aisle
Thornton Abbey	Part of west cloister (carrels)
Tynemouth Priory	Warming room
York Minster	Consistory court Crypt

Table 20.3: Reburied or covered pavements

<i>Site</i>	<i>Areas of Plain-glazed tiles now reburied</i>
Blackfriars, Newcastle	Presumed reburied. Plain/worn tiled floors, found in most of the re-used claustral buildings
Howden, Bishop's Palace	Tower stair well
Meaux Abbey	Alterations or patching in east presbytery aisle, north transept, nave. Floor in claustral walk
Pontefract Priory	Possibly reburied in: north-east corner of the cloister polygonal chapter house room to the north of the chapter house infirmary buildings
Scarborough, Paradise Estate	Presumed reburied in unidentified stone building
Watton Priory	Presumed reburied by Hope: altar platform in canons' chapel

Characterising Plain-glazed tiles

The recording methodology used in this study was least satisfactory in relation to the Plain-glazed tiles (Stopford 1990b). In accordance with the methodology, Plain-glazed tiles were not recorded individually. Instead, in an assemblage, Plain-glazed tiles with the same characteristics and context number (where relevant) were recorded together. As a result it is not now possible to quantify the correlation of individual characteristics. For example, all fragments glazed dark green in a clearance assemblage might be recorded together. Only some of those pieces might include a corner of a tile in which a nail hole was visible. It is not now possible to quantify the proportion of material with or without nail holes. It would be possible, but time consuming, to overcome this by dividing up the assemblage into much smaller batches in which the presence of all the recorded characteristics were more closely matched.



Fig 20.1: Photo-montage of Standard Plain-glazed flooring, York Minster Consistory Court. Not to scale

Characteristics and variability

The most variable characteristic of Plain-glazed tiles in the north of England was the size of the tiles. Table 20.4 shows the range of sizes at different sites. It also shows that there was more than one size of tile at many sites (at Barton, Bridlington, Fountains, Gisborough, Hartlepool, sites in Hull Old Town, Jarrow, Kirkham, Mount Grace, all sites in Newcastle, Pontefract, Thornholme, Tynemouth, Warkworth, Whalley, Whitby, York Gilbertine Priory, York Clementhorpe, York Minster crypt). Despite this, there were few instances where tile sizes co-varied between different sites. At Warkworth, Whitby and Kirkham, there were tiles of 111–120mm and 241–250mm. Kirkham and Whitby also had tiles of 121–130mm but only the 111–120mm sized tiles at the three sites were also similar in other respects. Tiles of 101–110 and 121–130mm were found at both Jarrow and Clementhorpe, York.

As shown in Table 20.4, the smaller sizes were most popular, followed by tiles of *c.*235mm across. It was notable that larger sized tiles survived in far fewer numbers than smaller ones. At many of the recently excavated sites where there were two or more sizes of

Table 20.4: Tile size by site
(using the mid-point of the range of upper surface dimensions)

<i>Size (mm)</i>	<i>Sites</i>
101–110	Bridlington, Jarrow, Mount Grace, Pontefract Priory, Prudhoe, Newcastle Carmelites, York Gilbertines, Whalley, York Clementhorpe Nunnery
111–120	Barton, Fountains, Gisborough, Hartlepool, Hull Old Town, Jervaulx, Kirkham, Newcastle Carmelites and Old Town, Thornton, Warkworth, Whitby, York Bishophill Senior, York Coffee Yard, York St Mary's Hospital
121–130	Hull Rotenheryng, Jarrow, Kirkham, Newcastle Old Town, Tynemouth, Whitby, Wressle, York Clementhorpe Nunnery, York Minster
131–140	Fountains, Bedern
141–150	Fountains, Tynemouth, Whalley, Hull Old Town
151–160	Scarborough, possibly Jarrow
161–170	Whitby
171–180	Bridlington, York Minster
181–190	Barton, Hylton, Fountains, Whalley
191–200	Meaux, Rievaulx
201–210	–
211–220	Newcastle Carmelites
221–230	Barton, Newcastle Blackfriars
231–240	Ayton, Beverley St Mary's, Gisborough, Newcastle Old Town, Newminster, Pontefract Priory and Castle, Tynemouth
241–250	Bedern, Durham, Howden, Kirkham, Mount Grace, Warkworth, Whitby
251–260	–
261–270	Pontefract Priory, York Gilbertines
271–280	York Minster

Plain-glazed tiles, the great majority of the survivals were of the smaller size (for example, at the Gilbertine priory in York, St Peter's, Barton, the Franciscan friary in Hartlepool and Blanket Row, Hull). This may genuinely reflect the quantities of medieval material.

Depth did not show the same variability as the upper surface dimensions, with the majority of tiles of all sizes being 25–35mm deep. Some larger tiles were thicker. At Warkworth, Whitby and in the crypt of York Minster, tiles of *c.*250–275mm across were 40–45mm deep. Exceptionally thin were tiles from Hull Old Town and York (15–17mm), while the thickest were from Prudhoe Castle (50mm).

The 'Standard' characteristics of Plain-glazed tiles in northern England

Size apart, there was a good deal of uniformity in the characteristics of Plain-glazed tiles in the north. In the majority of cases, they had slightly angled sides, a coating of fine sand over their bases and no keys. Fabrics were of an apparently homogeneous type: well mixed and prepared, with a fine quartz and few voids and grog or other inclusions (codes 3, 6; see Chapter 9 for fabric descriptions). The tiles were often, although not always, fired to an oxidised orange-red. Where information was available, there were five nail holes (one in each corner and one in the centre) in the upper surface of the tiles. The size of the nail holes tended to be small (*c.*1mm diameter) and those in the corners were located at variable distances from the tile edges. The tiles were glazed to give a strong contrast between the light and dark coloured versions, with a high gloss. The glaze over the body surface usually fired a very dark green, dark brown or almost black. The glaze over the slip fired to a bright yellow or orange/yellow. Some had a yellow rim around an orange centre, perhaps where the glaze or white clay has gathered to form a thicker layer (see Fig 20.2). Tiles with these characteristics were designated Standard Plain-glazed tiles (Figs 20.1–20.2, see also Figs 5.2 and 27.27).

A feature of many Standard Plain-glazed tiles was the way they responded to wear. Most decorated tiles will gradually wear down so that they first lose their shine and become dull looking, and then are left with very little glaze but with the remains of the white clay. Among Standard Plain-glazed tiles it was unusual to find an example where the glaze has worn down to expose the white clay. Instead they tended to wear unevenly, with areas where both the white clay and shiny glaze remained and areas where the tile body fabric was exposed. Similarly, where only part of the dark coloured glaze over the body fabric remained, it was still shiny, the rest having flaked off from the quarry. Tiles with this tendency for the glaze and white clay to flake off from the body fabric were found at St Peter's, Barton, Beverley, Gisborough, Jarrow, Thornton, Warkworth, Whitby and the Consistory Court in York Minster (Fig 20.1).

The many tiles with standard characteristics had one variable feature. This was the application of the slip. The most competently produced tiles were those that had been glazed to a very dark green or black over the body fabric and a strong yellow or yellow/orange over the slip. On these tiles the slip was applied as a thin layer (usually only about 0.5mm deep) but covering the whole of the tile surface. On the less carefully produced tiles, the slip, which was very thin, had been put on quickly, probably with one swipe of a brush, and did not properly cover the upper surface of the tile (Fig 27.27). In these cases, the tiles fired to a streaked yellow and medium or reddish brown (where the glaze was on the exposed quarry surface).

The tiles with more carefully applied slip were designated Standard Plain-glazed Grade 1. Tiles of Grade 1 included those in the Consistory Court in York Minster (Fig 20.1), from St Mary's Hospital, York, in the west cloister of Thornton Abbey (Fig 20.2), the castle chapel at Warkworth, and the castle at Wressle. They were also found in monasteries at Jarrow (small size), Kirkham (small size), Gisborough, and perhaps Mount Grace and Whitby (also small sizes). Standard Plain-glazed tiles with the streaked slip were designated Grade 2. Sites with the Grade 2 tiles included the crypt of York Minster, Ayton Castle, St Peter's Church, Barton, Hartlepool Franciscan Friary, Hylton Castle, Jarrow (largest size), Newcastle Whitefriars and, probably, the Gilbertine priory in York.

Sites which appeared to have tiles with standard characteristics but for which information is incomplete include Bridlington Priory, Durham Cathedral Priory, Lindisfarne Priory, Newcastle Old Town, Scarborough Castle and Tynemouth Priory.

Plain-glazed tiles in the north of England without 'Standard' characteristics

The Plain-glazed tiles that depart from this overall uniformity in one or more respects were described as Non-Standard tiles. The most obviously Non-Standard Plain-glazed tiles were those in the westernmost bay of the nave of the church and in the abbot's house at Rievaulx (Fig 20.3). The tiles were of poor quality, both roughly made and over fired. Their fabric was largely reduced and, while it is clear that some examples were coated with white clay, they tended to fire to various shades of brown and olive so that there was little distinction between light- and dark-coloured examples. There were no nail holes in the upper surfaces and the tiles wear down without flaking. They were also an unusual size (see Table 20.4).

The smaller sized Plain-glazed tiles (*c.*135mm) from the Bedern in York had five nail holes but otherwise clearly differed from Standard Plain-glazed tiles. The tiles were slipped and glazed a light or dark green and were much thinner than usual (*c.*17mm) with steeply bevelled sides. Similar tiles were found in Hull Old Town. One example was 140–145mm across with



Fig 20.2: Standard Plain-glazed tiling at Thornton Abbey, carrels in west claustral walk. Note the darker centres and paler surrounds of some of the yellow tiles

nail holes in the corners. All five examples found were 15–17mm deep, with slip under both the yellow, light green and dark green glaze. Standard Plain-glazed tiles do not have slip under the green glaze.

The very small sample from Prudhoe Castle also included some tiles with an unusual combination of features. One of these had a scooped key in the base and nail holes in the upper surface. Another, a fragment, had lines scored across the upper surface. These could have been made for splitting the tile up into several small triangles, but the scored lines were shallower than usual if this was the purpose. An olive glaze and the depth of some of the fragments were other non-standard features.

At Whalley Abbey, the Plain-glazed tiles were in poor condition. Those in the church had four nail holes, often doubles, close to the tile edges. It is possible either that the nailed board had two nails through each corner or that it was pressed onto the clay twice. The tiles had been over fired, with some warping and a metallic sheen on the little remaining glaze. The smaller tiles at this site may be of similar type but their condition was very poor. The few examples of the smallest size that retained their slip and glaze were streaked a very dark brown or black and yellow.

Two pieces of kiln waste found in Hull had fused together during firing (Watkins 1993). These glazed tiles are now lost but no decoration was noted and it is possible that they were part of a Plain-glazed group. The distorted tiles measured 98–112mm across and 32–45mm deep. They had a central scooped key and several stabbed keys, square in section, in their bases. No other tiles in the region are known with this treatment of the bases.

Tiles from St Mary Bishophill Senior, York, may be Non-Standard despite their usual size and quality. The worn tiles had four nail holes, and steeply bevelled sides with sharp edges.



Fig 20.3: Non-standard Plain-glazed tiles re-set in the west bay of the nave, Rievaulx Abbey church, taken c.1936.
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At Fountains Abbey, slight variations from the norm were apparent on all three sizes of Plain-glazed tiles. There were no nail holes in those of the 110–115mm size, which were deeper than usual (*c.*40mm) and had predominantly reduced fabrics with good quality glaze. Those of the 190mm size were worn. Fragments of more than 170mm across had nail holes in the corners and were glazed dark brown with the glaze blistered in places. The 130–140mm size also had four nail holes, with predominantly reduced fabrics, vertical sides and streaked olive/yellow or brown glazes. Several examples had concave or dished upper surfaces. All these examples were thought likely to be Non-Standard types. However, there was one tile in the loose collection, and another re-set in the church, both 145–150mm across with the five nail holes typical of Standard type tiles in the study area. The less worn example was glazed dark green. It is possible that both Standard and Non-Standard Plain-glazed tiles were used at Fountains.

The small collection of Plain-glazed tiles from Jervaulx included at least three different types. Two of these were certainly Non-Standard, roughly made with uneven surfaces, poorly prepared fabrics, vertical sides and no nail holes. The glazes ranged from buff to olive-yellow and light to dark brown. The third group (of seven tiles) may be of Standard Grade 1 type but with four rather than five nail holes. The yellow tiles were

not streaked and the slip had flaked from the quarries. These tiles were of competent manufacture with a relatively well-prepared, oxidised fabric, slightly angled sides and sandy bases. Again, it appears that both Standard and Non-Standard material was in use at Jervaulx.

Only two fragments survived from Stockton Castle. These had no sand on the bases, are partly reduced and thinner than average (22mm).

More difficult to assign to a particular type were the tiles from the Bishop of Durham's mansion at Howden. These were oxidised, with the slip, glaze and possibly also the nail holes usually associated with Grade 1 Standard Plain-glazed tiles. However the oxidised fabric was less well prepared than usual, with a higher proportion of inclusions, and had cracked badly on some fragments. The tile sides were slightly bevelled or vertical and some had drips of slip running down them.

Similarly, tiles from Pontefract Castle had many characteristics of the Grade 2 Standard Plain-glazed type except that there appeared to be three nail holes, rather than two, along one side of several of the tiles.

Imports from the Netherlands?

Tiles with characteristics similar to those of the Standard type described here are known from many

sites around England, Wales and Scotland and are generally thought to have been made in the Low Countries (see, for example, Knapp 1956; Keen 1972; 1984; Norton 1976; 1994; Drury 1977; Eames 1980, 1, 18–19 and 273–5; Lewis 1999, 72). The telling characteristic of Plain-glazed tiles imported from the Netherlands is thought to be the nail holes in two or more corners and sometimes in the centre of these tiles. A process which would make these nail holes is known from the manufacture of 17th-century tin-glazed tiles in the Netherlands (Lane 1960, 49; Korf 1963, 12–13; Eames 1980, 1, 18–19). After being shaped in a mould, the clay was transferred to a board with nails sticking through it. The nails held the clay in place while the sides of the tile were trimmed with a knife.

Other characteristics thought to result from Netherlandish manufacturing techniques include a high shine and the flaking, rather than wearing, of the glaze. These may result from a double-firing technique in which the tiles were fired first as quarries and again after the glaze had been applied (Eames 1980, 1, 19). Korf's description of the double-firing process suggests that the slip was applied to the quarry before the first firing (1963, 12–13). In such a process the glaze may not fuse to the body fabric as well as on a tile produced from a single firing, and can be prone to flaking off when the tiles come into use. Elizabeth Eames also suggested that the streaked slip of some Plain-glazed tiles found in the Orkneys was a feature of tiles made in the Netherlands, since no floor tiles are thought to have been manufactured on the Orkneys in the medieval period (1980, 1, 274).

The procedures described by Korf and others for the manufacture of post-medieval tiles found in the Netherlands were probably not identical to those used to produce the medieval Standard Plain-glazed tiles found in northern England. If, as suggested by Korf, the slip was applied to the quarry before the first firing, and the glaze afterwards, the slip should be left behind when the glaze flaked off. On Standard Plain-glazed tiles the slip and glaze tended to flake off together. Experimental work in this area would be useful. There was, also, no evidence for the trimming of the sides of Standard Plain-glazed tiles after shaping the quarry. These tiles – and all the straight-sided tiles of the medieval period in the north – have not had their sides treated in any way beyond being cut out, or otherwise formed, so as to produce a bevel. Shaping the quarries in moulds would be time consuming and require extra equipment. Tiles made in this way might be expected to have inclusions in the fabric dragged vertically on the tile sides as the tiles were released from the mould. This was not a feature of the northern tiles. Some of the assemblage from St Peter's Church, Barton, had a cracked fabric which might have resulted from lumps of clay being pushed into a frame or mould, but might also have resulted from poor amalgamation of the clay before the quarries were made. The practicality of another approach to forming the quarries, in which a board with nails

knocked through it was used to hold the clay in place while the tiles were cut out, was successfully demonstrated in experimental work at Norton Priory, Runcorn, Cheshire (Greene and Johnson 1978, 35).

A complicating factor in the debate about the characteristics of imported Plain-glazed tiles is that some of their features, particularly the nail holes and brushed-on slip, are found on decorated tiles thought to have been made in England in the 15th century. These features were found on decorated tiles of the 15th and early 16th century in the north of England (see Chapters 22 and 23; Transpennine and Huby/Percy Groups). The heraldic associations and distributions of these tiles makes their importation highly unlikely and yet they had four nail holes and poorly applied, smeared slip. They were also similar to the Standard Plain-glazed tiles in their homogeneous, predominantly oxidised fabric. They do not, however, appear to flake from the body fabric in the same way as the Standard Plain-glazed tiles. The dark green glaze of many of the Grade 1 Standard Plain-glazed tiles is also less common among tiles of the Transpennine and Huby/Percy Groups but does occur occasionally on examples of design 23.36/24.33 in both groups.

Tiles with nail holes, thought to have been manufactured in England, are also known in other regions. A set of rectangular tiles of c.1500 from Bordesley Abbey, Worcestershire, with an English inscription scraped, in sgraffiato, through a layer of slip, had nail holes in each corner (Stopford and Wright 1998). One of these tiles was included in a programme of chemical analysis using the neutron activation technique. The fabric of the inscribed tile was grouped with kiln furniture found elsewhere in the monastic precinct, strongly suggesting local production (Stopford 1990a, 153–61 and appendix 5; Stopford *et al.* 1991). Relief decorated tiles from the precinct of the leper hospital at Burton Lazaars, Leicestershire, had nail holes in two diagonally opposite corners. These tiles were decorated with English heraldic designs and dated to the late 15th or early 16th centuries (Eames 1980, 1, 117–23).

Some of the characteristics associated with floor tile manufacture in the Netherlands are, therefore, found on tiles made in England. However, there is no doubt that floor tiles were also imported from the Low Countries to England, since they were listed in some of the customs accounts compiled at major ports for tax purposes on overseas trade. Where tile was part of a cargo it was usually listed in the accounts as Flanders tile. Terminology can be a problem and in some cases 'Flanders tile' can refer to either brick or tile (Salzman 1923, 180–2; Drury 1981, 126–42). However, in other instances floor tiles are clearly specified as 'floare' or 'pavyngtyles' and bricks are referred to as 'walle tiles'. Roof tile does not appear to have been imported. References to Flanders tile have occasionally also been found in fabric rolls and wills (Salzman 1923, 180–2; Ward-Perkins 1937, 443; Salzman 1952, 140–8; Knapp 1956; Keen 1972, 148; 1984; Norton 1994, 149–53). These references could,

of course, indicate a type of tile known as Flanders tile (perhaps any Plain-glazed tile) rather than tiles actually made in Flanders and imported to England.

The medieval customs accounts for Hull are the most complete from the study area (Childs 1986). Twenty-eight accounts survived from the second half of the 15th century, with nineteen entries that related to tiles. In all cases the accounts specified whether the material concerned was brick or floor tile. The implications of the Hull accounts are discussed in Chapter 5. The issue addressed here is the extent to which the documented imports can be associated with material in the archaeological record. Linking surviving tiles directly with the documentary evidence for imports is difficult since little or nothing about the physical characteristics of the tiles are recorded in the documents. At present, there are only two cases in Britain where extant tiles can be identified with some confidence as those mentioned as imports. These are the tiles in the Muniment Rooms at Winchester College (Norton 1976) and, perhaps, those in the crypt of York Minster. The recorded characteristics of the Winchester tiles were that they measured *c.*127mm across and 25mm deep, had an oxidised fabric, nail holes in their upper surfaces and were without keys. The glaze was fired to a dark brown, dark green or black over the body fabric, and yellow, or yellow and orange, over a thin layer of white clay. Purchases of tiles were recorded in the surviving College accounts and, as Christopher Norton has argued, the tiles in the Muniment rooms seem likely to be those mentioned as Flanders paving tiles in the accounts for 1396/7. The same account lists monies paid for 1,000 tiles of a larger size, for unloading from a ship and for carriage – providing some support for the suggestion that the tiles were imported.

At York Minster, two sizes of floor tiles were listed in the fabric roll of 1415: 600 large Flanders tiles were bought for the crypt from William Newland for 33s 4d and 600 smaller tiles for 8s 4d (Raine 1859, 36).¹ A further 8d was paid for carriage. In the mid 19th century, two sizes of Plain-glazed floor tile were recorded as in the crypt, with a chequered floor of 7" (175mm) tiles, glazed alternately yellow and blue, and 11" (275mm) tiles arranged in a similar way (Browne 1847, 198 and 210). Tiles of both the sizes recorded by Browne remain in the crypt today, although their locations are not as he described. The 275mm tiles are now almost entirely worn, with little sign of slip or glaze, and a pitted surface that makes the identification of nail holes impossible. The 175mm examples, on the altar platforms, are much less worn (these should not be confused with the two panels of decorated and

mosaic tiles from Meaux Abbey and Watton Priory which have been re-set between the altars in recent times – see the entries for these sites in Chapter 27). Glazed yellow and dark green, and with an oxidised fabric, they probably had five nail holes, although the condition of the tiles and the poor light made their identification uncertain. The slip covered the whole of the upper surface of the yellow tiles in most cases and both it and the dark green glaze had flaked off from the body fabric. These characteristics accord with those of Standard Grade 1 Plain-glazed tiles. The low carriage charge for the York tiles suggested, at first sight, that the tiles were purchased locally. However, comparison of the overall price of the York tiles with those from Winchester suggested that the York examples could have been imported, but with the cost of transport to York and the associated middlemen included in the price of the tiles (see Chapter 5).

No substantial work has yet been done on Plain-glazed tiles in the Netherlands. There is a floor of Plain-glazed tiles in the treasury of the Belfry in Bruges. Like part of the consistory court floor in York Minster, this has been patched with later material but much appeared to be coherently arranged (Fig 5.2). The centre of the floor was largely worn but the tiles around the walls were in good condition. The tiles were oxidised or reduced but with a greater proportion reduced than usual among the Standard Plain-glazed tiles in the north of England. Four small nail holes were identified on some examples but it was not possible to inspect the unworn tiles closely. The glaze was yellow/orange or almost black. The slip and glaze had a tendency to flake off from the quarries. The slip covered the whole of the upper surface of the tiles. A date for the tiles was provided by an inscription of 1463 (with some undeciphered lettering) cut through the slip, but under the glaze, on one tile (Fig 5.3).

Conclusions

As far as can be told, both the Winchester tiles and the 175mm tiles in York Minster crypt conform to the characteristics of Standard Grade 1 tiles, although the number of nail holes are uncertain at both sites. If this is correct, other tiles of Standard Grade 1 type might be interpreted as imports. The characteristics of Standard Grade 2 tiles were identical to those of Grade 1 apart from the streaked slip. There is, as yet, no direct evidence to show that any of the Grade 2 Standard Plain-glazed tiles came from the Low Countries, although their easterly distribution as compared with Non-Standard tiles, does suggest that they were similarly transported by sea (Fig 5.1).

The characteristics of Standard Plain-glazed tiles in the study area were remarkably homogeneous. The same sets of upper surface dimensions seem to have been used at many sites, with two sizes found together in several cases. A depth of 25–30mm was also stan-

1 In d.c largis tegulis Flaundrensibus emptis pro les cruddes de Willelmo Neuland, 33s 4d. In dc minoribus tegulis emptis de eodem, 8s 4d. In cariagio earumdem tegularum usque Monasterium, 8d. This entry is also discussed by John Browne (1847, 198 and 210). Like Raine, Browne interpreted 'les cruddes' as the crypt, although he mistakenly asserts that 500 were bought of each size of tile.

dard, although as noted above some of the larger tiles were slightly deeper. Most striking, however, was the consistency with which five nail holes were found on Standard Plain-glazed tiles in the north where the assemblages were of a reasonable size. Sites with tiles thought to have five nail holes included Barton, Fountains, Gisborough, Hartlepool, Hull Old Town, Hylton, Jarrow, Kirkham, Meaux, Newcastle, Thornton, Tynemouth, Warkworth, Whitby, and York. This contrasted with the tiles that were thought to be Plain-glazed imports to Wales, which had nail holes in opposite corners only (Lewis 1999, 72).

The size of nail holes (some were rectangular 2–4mm diameter, others were small and circular, like pin-holes, of only *c.*1mm diameter) and their distance from the tile edges did not correlate with the size of the tiles. However, at Barton the same nailed board could be shown to have been used on different tiles at the same site. Other features of the majority of Standard tiles in the north were their oxidised fabrics and serviceable quality. Standard Plain-glazed tiles were not damaged in manufacture apart from the poorly applied slip of the Grade 2 tiles. After firing and when in use, however, flaking of the slip and glaze occurred with both Grade 1 and Grade 2 tiles.

Despite consistency in the number of nail holes found on examples in the region, it should be stressed that nail holes alone cannot be taken as a reliable distinguishing characteristic for Standard tiles. Sometimes they cannot be recognised and sometimes they are found on Non-Standard tiles (in both fours and fives). As usual, different types of tile are distinguished by a number of factors, rather than by a single characteristic.

For much of the Non-Standard material, it can probably be argued that the tiles were made specifically for each site and on a local basis. Their characteristics varied from site to site, as would be expected if this were the case, and some of the material was of very poor quality. It is unlikely that the tiles at Rievaulx, for example, could ever have been sold successfully on a large scale. Their manufacture was inexperienced and the products only just serviceable. At Fountains, however, most of the plain tiles were competently made.

The exceptional material among the Non-Standard tiles were the very thin examples found in York and Hull, with the distinctive combination of five nail-holes and slip under the glaze on both green and yellow tiles. The material in Hull had been discarded by the early/mid 14th century. The characteristics of these tiles were otherwise unknown in the study area at this date and, together with their location in York and Hull, might suggest that they were imports. However, they are not thought to have the same origins as the imports of Standard Plain-glazed tiles.

It is questionable how much further the debate on the importation or home production of Plain-glazed tiles can be developed without a detailed study of

material in the Netherlands and evidence from kiln sites. There is, however, no doubt that the study of Plain-glazed tiles is feasible and will produce results. Although the absence of designs and stamps means that the tiles cannot be characterised as closely as decorated examples, other aspects of manufacture do provide a basis for comparison. As noted above, regional differences in the material may be apparent. Variations in characteristics may identify differences in the source of the material. A gradual build up of ICP data may enable sources to be more closely defined. The first priority, however, should be a review of retrieval, sampling and storage practices. It was thought at the outset of this study that there might be an overwhelming amount of Plain-glazed tile to record. In fact, with some notable exceptions, the extant numbers of loose Plain-glazed tiles from most sites were small.

Dating

The types of tile and their possible dating are summarised in Table 20.5. It can be seen that both Standard and Non-Standard tiles were dated to the 14th, 15th and earlier 16th centuries.

Dates for Non-Standard tiles included:

- By early/mid 14th century
- Before *c.*1400 (possibly Non-Standard at Howden)
- 14th century or later
- After 1380
- By end 15th century
- After mid 15th century

The dates for Standard Grade 1 tiles included:

- After 1325
- At or after 1390s
- After *c.*1400
- 1415
- After *c.*1420

The dates for Standard Grade 2 tiles included:

- 14th century
- After 1300
- After *c.*1350
- c.*1400 or later
- After *c.*1400

The earliest Plain-glazed tiles in use in the study area were probably the Non-Standard examples from York and Hull, discussed above, which were used before the mid 14th century. An early date for Standard tiles, in the mid thirteenth century, has been proposed in one instance. This was for tiles used in a floor at the Gilbertine priory in York (Kemp and Graves 1996). Although no examples were found *in situ*, some tiles were in contexts interpreted as from the mid 13th century. This is controversial because some of the stonework from the early contexts might be thought to be of later date and also because the distri-

Table 20.5: Sites with Plain-glazed tiles, types and dating where evidence available

<i>Site</i>	<i>Type</i>	<i>Date</i>
Ayton Castle	Standard, Grade 2	c.1400 or later
Barton, St Peter's Church	Standard	Under assessment 14th–15th century
Beverley:		
Minster	?Standard	–
St Mary's Church	–	Possibly 1411
Lurk Lane	–	Before 1500, possibly 15th century
Dominican Priory	Standard, Grade 2	?14th–16th century
Bridlington Priory	?Standard	–
Durham Cathedral Priory	?Standard	1500
Fountains:		
North transept	Non-Standard	Possibly pre-c.1500
Other	?Standard	–
Woolhouse	Non-Standard	14th century to Dissolution
Gisborough Priory	Standard, Grade 1	–
	Standard, Grade 2	–
Hartlepool Franciscan Friary	Standard, Grade 2	After 1300, pre-Dissolution
Hexham Abbey	–	–
Howden, Bishop's Palace	?Non-Standard	Before c.1400
Hull Old Town	Non-Standard	By early/mid 14th century
	Standard	–
Hylton Castle	Standard, Grade 2	After c.1400
Jarrow Priory	Standard, Grade 1	Under assessment
	Standard, Grade 2	–
Jervaulx Abbey	Standard, Grade 1; Non-Standard	–
Kirkham Priory (small size)	Standard, Grade 1	–
Lindisfarne Priory	?Standard	–
Meaux Abbey	?Standard	–
Mount Grace	Standard, Grade 1	After 1398, pre-Dissolution After c.1420, pre-Dissolution
Newcastle:		
Blackfriars	–	–
Carmelites	–	14th century
Old Town/castle	Standard	First appear in late 14th/early 15th century deposits
Newminster Abbey	?Standard	–
Pontefract:		
Castle	?Standard	–
Priory	–	110mm size: possibly 14th century 265mm size: possibly later 15th–early 16th century
Prudhoe Castle	Non-Standard	By end 15th century
Rievaulx Abbey	Non-Standard	c.1500
Scarborough Castle	?Standard, Grade 2	–
Scarborough, Paradise Estate	–	–
Stockton Castle	Non-Standard	–
Thornholme Priory	Standard	–
Thornton Abbey	Standard, Grade 1	After 1325, pre-Dissolution
Tynemouth Priory	Standard	–
Warkworth Castle	Standard, Grade 1	1390s or later. Discarded before c.1455
	–	–
Watton Priory	–	–
Whalley Abbey	Non-Standard	After c.1380, pre-Dissolution
Whitby Abbey	Standard, Grade 1	–
Winteringham Church	Standard, Grade 2	–
Wressle Castle	Standard, Grade 1	1390s or later
York Minster:		
Consistory court	Standard, Grade 1	After c.1400
Crypt	Standard, Grade 1	1415
York:		
Barley Hall	?Standard	After c.1440 and before c.1536
Bedern site	Non-Standard	Contexts dated 14–early 16th century
Clementhorpe Priory	Standard	–
Gilbertine Priory	Standard, Grade 2	?After c.1350
Holy Trinity Church	–	–
St Mary's Abbey	–	–
St Mary's Bishophill	Non-Standard	After 13th century
St Mary's Hospital, Horsefair	Standard, Grade 1	After early 14th and before mid 15th century

bution of the tile finds accorded with the east end of the later church (built *c.*1350, overlying the nave of the 13th-century church). No tiles were found in the area of the chancel of the 13th-century church. It seems more likely that the tiled floor belonged to the later church. However, an earlier date than the evidence here suggests is possible for Standard tiles. A date of *c.*1300 has, for example, been proposed for the use of Plain-glazed imports in London (Ian Betts, pers. comm.).

A 14th-century date might be assigned to the Plain-glazed tiles of unknown type from Pontefract Priory, dated by 14th-century pottery in the make-up of a later floor. Tiles in the Bishop's Palace at Howden were dated to before 1400, and Standard Grade 2 tiles in the Carmelite Friary, Newcastle, were also thought to be of the 14th century. In general, Barbara Harbottle noted that Plain-glazed tiles of Standard type in Newcastle first occurred in deposits of the late 14th or early 15th century (Harbottle and Ellison 1981, 171).

Other sites with possible dates around 1400 were the Standard Grade 1 tiled floors at Warkworth and Wressle Castles (perhaps the last decade of the 14th century) and York Minster (1415). Fifteenth-century dates seem certain in several cases: at Ayton and Hylton castles (both Standard Grade 2), St Mary's Church Beverley (type unknown), Mount Grace Priory and in the consistory court of York Minster (both Standard Grade 1). Dates in the later 15th or early 16th century are suggested for Plain-glazed pavements at Barley Hall, York (B. Lott, pers. comm.), in the church and abbot's house of Rievaulx Abbey (Non-Standard) and in the refectory at Durham (probably Standard).

On the basis of the present evidence, therefore, Standard Plain-glazed tiles were in use in the north of England from the 14th, perhaps the later 14th, century through to the earlier 16th century. The first Non-Standard Plain-glazed tiles may have been earlier in date, made before the early or mid-14th century.

21 Small assemblages dating from the 14th or 15th centuries

Tile Group 20 (Fig 21.1)

These decorated tiles belong to a workshop otherwise known in France, around Dieppe, Normandy, and Bordeaux, in Sussex and south-east England and in Ireland, around Dublin. The group as a whole has been studied and published recently by Christopher Norton (1993a). The design numbers assigned in that article are followed here, prefixed by N/.

Site: Cowick Manor, East Yorkshire. An example in the Yorkshire Museum may be incorrectly attributed to St Mary's Abbey, York (see entry 112, Chapter 27).

Sample and condition: Eighteen examples in the Doncaster Museum are thought to be extant but were not available for recording. The following details were based on information from the published reports (Hayfield and Greig 1990, 116–17, fig 4; Norton 1993a, 83–4) and on the details of the unprovenanced but complete and pristine tile of N/32 in the Yorkshire Museum (Brook/9).

Shape, size: Square, 97–104mm across and 17–23mm deep.

Designs: N/25, 31, 46, 52, 53, 54, 55, 66, 67, 68 (Fig 21.1).

Decoration: Stamped and slip decorated, using both the stamp-over-slip and slip-over-stamp methods. Glazed orange-brown over the quarry and yellow over the slip. Overfires to purple. Occasional green spots.

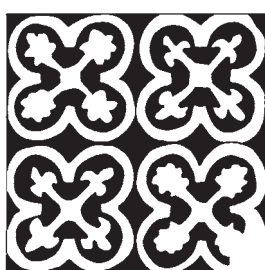
Nail holes: None.

Firing: Usually oxidised, occasionally partly reduced or overfired.

Fabric: Fine, homogeneous, some tempered with a good deal of fine white sand, firing to a bright orange-brown but with some paler streaks and spots of darker clay.



25



31



46



68



52



53



54



55



67



66

Fig 21.1: Group 20 design drawings. Scale 1:3. (Reproduced by kind permission of E.C. Norton)

Treatment of tile sides: Vertical or slightly bevelled.

Treatment of bases: No keys, smooth, either with or without fine sand.

Quality: The example in the Yorkshire Museum was pristine but several of the tiles from Cowick and elsewhere had a streaked or smudged upper surface.

Discussion

The manor house at Cowick is thought to have belonged to Edward II. Only parts of the moat were excavated, so nothing was discovered about any buildings within the moated area or the original location of the tiled floor.

The location of kiln sites for the group are not known, but the small number of tiles in north-east England suggests that they were imported from outside the region, not made locally. Cowick was well known for a long sequence of medieval pottery production, dating from the late 13th to 15th centuries (Le Patourel 1968). However, no floor tiles or wasters were found with the pottery kilns (Le Patourel, pers. comm.) and the fabric of the floor tiles was not similar to that of the locally made pottery (Hayfield, pers. comm.). While local production for this royal manor by attendant tilers cannot be entirely discounted, the likelihood is that the tiles were imported. Christopher Norton felt that manufacture in Normandy was most probable (1993a, 84–5). The royal status of the site might explain the supply of material over such a distance. However, it is possible that some fragments from Berwick, found too late for inclusion in this study, were of similar type.

Dating

The only possible indication of date from Cowick was the documented alteration and refurbishment of the house in the second quarter of the 14th century. However, what evidence there is for the dating of the group elsewhere is later than this, with two Sussex sites suggesting the last quarter of the 14th and/or the early 15th century (Norton 1993a, 85–6).

Tile Group 21 (Fig 21.2)

These straight-sided tiles of various shapes and sizes may have been intended for use in something like a mosaic arrangement.

Sites: Whalley Abbey; Rievaulx Abbey.

Sample and condition: From Whalley, there are three tiles in the loose collection (one worn), with other examples among the 3m² of tiles that remain in the area of the Abbot's house. From Rievaulx, there are c.100 tiles in the loose collection (variable condition).

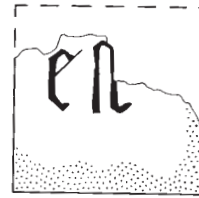


Fig 21.2: A possible Group 21 tile from Rievaulx Abbey. Scale 1:3

Mosaic arrangements: Unknown.

Shape, size: Rectangular: scored and split on one long side, probably from a c.105mm square, with the surface further scored to make eight small triangles. Triangular: scored and split on two 75mm sides, presumably from a square tile of c.150mm. Square, 75–80mm, with some examples either scored, or scored and split, into two or four triangles. Depth of all tiles was 30–36mm.

Designs: Possibly design 21.1 (Fig 21.2).

Decoration: Design 21.1 was reverse inlaid with red clay into a 1–2mm layer of white clay. The plain tiles were either coated with a thin slip and glazed yellow, olive and brown, or glazed over the quarry to a dark brown, black or dark green. The scored tiles that had not been split might have been used decoratively. However, these scored lines appear to have been made in exactly the same way as the tiles that were split (see below) and it is equally possible that they were simply the leftovers, not needed as smaller pieces.

Nail holes: Four, c.5–10mm from the corners of the square tiles.

Firing: Oxidised at Rievaulx; partly reduced, with some highly fired at Whalley.

Fabric: Red, coarse, laminated.

Treatment of tile sides: Slightly bevelled. A single strand of wire or other very fine line was used to make the scored and split tiles. The line was pulled right down to within 10mm of the tile bases, but cut less than half way through what, before splitting, was the tile centre. As a result there was a characteristic curve to the scored and split line along the broken sides of the quarries.

Treatment of bases: Sandy, rough, uneven. A thumb pushed into the base had made a simple key in a few cases.

Quality: Slip poorly applied, streaked, to give a yellow and brown glaze.

Discussion

The description of the Group 21 tiles as a possible mosaic was based on the very small triangles scored on the rectangle and some of the 75mm squares. These and most of the square tiles were much smaller than usual for other types of tiling. If the reverse inlaid tile is correctly assigned to the group, this might support the idea that the

tiles referred to Plain Mosaic to some extent. No indication of their intended layout was suggested by the examples that remain on site, which are haphazardly arranged and in poor condition. The tiles combined a number of characteristics that are not usually found together, such as keying and nail holes. This combination was only otherwise found on tiles from Prudhoe Castle, which were designated Non-Standard Plain-glazed (Chapter 20).



Fig 21.3a–d: Group 22 fragments from Whalley Abbey, possibly used as a grave cover or surround. G.K. Beulah 1935

Dating

There was no independent indication of date for Tile Group 21 beyond what is known of the building sequence of Whalley Abbey. This suggests that the floor tiles are unlikely to date before the later 14th century (see entry 92, Chapter 27). On typological grounds, the tiles combine a number of characteristics that would be assigned various dates but overall their appearance suggests the 14th century or later. Stylistically, if design 21.1 does belong to the group, a date in the 14th or 15th century would be suggested for the lettering.

Concordance

English Heritage, EH/88092658–9, 88092636 from Whalley Abbey. British Museum, possibly BMC/6097–8; 6157–8 from Rievaulx Abbey. The tile of design 21.1 is BMC/6157, BMD/31.

Tile Group 22 (Fig 21.3)

Fragments thought to have formed part of a ceramic tomb cover were recorded by G.K. Beulah at Whalley Abbey but are now lost (Beulah 1935, 95–7)

Site: Whalley Abbey.

Design and decoration: Sgraffiato technique.

Discussion

The tiles may have been pieces of a tomb cover with an effigy and inscription. The only possibly similar example in the study area is a tile of design 23.41 from Sawley Abbey, tentatively assigned to the Transpennine Group (Chapter 22; Fig 22.1). Ceramic tomb covers with sgraffiato decoration form part of elaborate tile assemblages at Warden Abbey, Bedfordshire (Baker 1982; 1987; 1993), Norton Priory, Cheshire (Greene 1985; 1989, 10–14) and possibly at Bordesley Abbey, Worcestershire (Stopford and Wright 1998). A burial discovered in the cloister of Kirkstall Abbey in 1713 also had a tiled cover but this seems to have been made up of ordinary floor tiles, perhaps re-used (Thoresby 1725, 600; see entry 55, Chapter 27). Further afield, parallels for the Whalley cover are known from France, particularly in Normandy (Norton 1984b; Coulthard and Delacampagne 1995).

Dating

The building sequence at Whalley Abbey suggests that floor tiles at this site are unlikely to date before the later 14th century (see entry 92, Chapter 27). Stylistically, the lettering on the tiles suggests a date in the later 14th or 15th century. Examples of ceramic tomb covers from elsewhere are dated variously between the 13th and earlier 16th century.

22 The Transpennine tile group (later 15th century)

Tile Group 23 (Figs 22.1–22.5)

These late medieval floor tiles were used at several sites in Yorkshire but also at some sites west of the Pennines. There were close links between production of these tiles and those of the Huby/Percy Group (Chapter 23). It is possible that the Huby/Percy tiles were products of essentially the same workshop but at a later date.

Sites, sample and condition: There are 160 extant decorated examples in loose collections, plus several areas of re-set paving (Table 22.1). A pavement of decorated and plain Transpennine Group tiles, found *in situ* in the chapter house at Whalley Abbey, was reburied in *c.*1980 (Figs 22.2 and 22.5). The distribution of Transpennine Group tiles is plotted in Figure 6.1.

As Table 22.1 shows, the sample of decorated tiles for this group is relatively large. However, some of the material is inaccessible or in poor condition. In particular, there is only limited information about the

reburied pavement in the chapter house at Whalley Abbey which includes the only known examples of designs 23.23, 23.25 and 23.38. Some of the least worn tiles are from Rievaulx Abbey and Pontefract Priory but many of the best examples in the Rievaulx assemblage have been cut out of display panels, leaving their sides and bases coated with the white material in which they were set. The sides of some of these tiles have also been cut through. Transpennine Group tiles re-set in the church at Rievaulx have deteriorated in recent years, as shown in Fig 22.4 (p.234). Good quality examples in Pontefract Museum were probably selected for retention from a larger excavated assemblage.

A fragment of design 23.41 from Sawley Abbey is uncertainly assigned to the Transpennine Group. Design 23.41 appears comparable to the fragments of a possible tomb cover from Whalley Abbey, discussed in Chapter 21 (Tile Group 22, Fig 21.3).

Table 22.1: Sites, designs and numbers of tiles

<i>Sites</i>	<i>Nos extant (loose)</i>	<i>Re-set paving</i>	<i>Designs</i>
Bolton Priory	1	Parish church	23.4, 23.7, 23.9, 23.12, 23.13, 23.17, 23.19, 23.24, 23.28, 23.36
Cockersand Priory	9		23.5, 23.8, 23.12, 23.16, 23.17, 23.28, 23.34, 23.36
Fountains Abbey	6		23.4, 23.5, 23.8, 23.14, 23.17, 23.24, 23.32, 23.36
Hull, Blackfriars	2		23.20, 23.26
Kirkham Priory	3		23.26, 23.28, 23.35
Markenfield Hall	–		23.36
Monk Bretton Priory	2		23.5, 23.17, 23.36
Mount Grace Priory	29	Priory church	23.2, 23.3, 23.12, 23.13, 23.15, 23.17, 23.18, 23.21, 23.24, 23.28, 23.30, 23.32, 23.35, 23.36, 23.40
Pontefract Priory	16		23.4, 23.8, 23.15, 23.17, 23.19, 23.23, 23.24, 23.27, 23.28, 23.30, 23.34; probably also designs 23.21 and 23.32
Rievaulx Abbey	54	Nave	23.4, 23.5, 23.7, 23.8, 23.10, 23.11, 23.13–23.15, 23.17–23.19, 23.24, 23.27–23.36
Sawley Abbey	21	Patching in transept chapels	23.1, 23.13, 23.18, 23.24, 23.33, 23.34, 23.36, [?23.41]. Probably also 23.9, 23.14, 23.23, 23.27, 23.32 and 23.2 or 23.3.
Whalley Abbey	5	Display panel and in the chapter house floor	23.4–23.6, 23.8, 23.12, 23.13, 23.17, 23.20–23.23, 23.25, 23.28, 23.30–23.32, 23.34, 23.35, 23.37
York:			
North Street (?kiln)	1		23.2
Lord Mayor's Walk	?1		plain
Probably Kirkstall Abbey	11		23.36. Possibly also 23.9, 23.13, 23.31, 23.34
Possibly All Saints, North St, York	–		(either Transpennine 23.36 or Huby/Percy 24.33)*

* Design 23.36 of the Transpennine Group is the same as design 24.33 in the Huby/Percy Group, but occurs on different sized quarries in the two groups. The design, but not the size of the tiles, was recorded from this site. The tiles may, therefore, belong to either the Transpennine or Huby/Percy Groups.



23.1



23.2



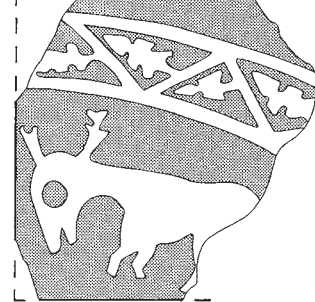
23.3



23.4



23.5



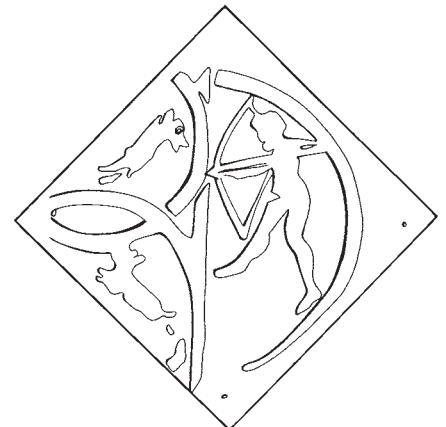
23.6



23.7



23.8



23.9



23.10



23.11

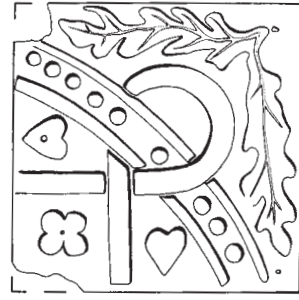
Fig 22.1: (pp.228–231) Transpennine Group design drawings. An almost complete example of 23.2 and a bottom left corner fragment of 23.3 were found at Sawley Abbey after these drawings were made. Scale 1:3. (Design 23.4 reproduced by courtesy of the Trustees of the British Museum)



23.12



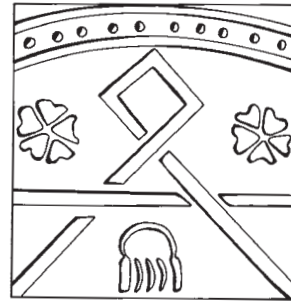
23.13



23.14



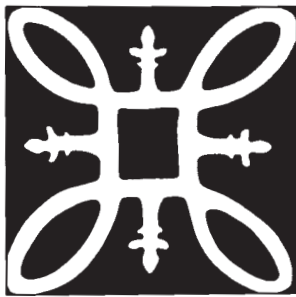
23.15



23.16



23.17



23.18



23.19



23.20



23.21



23.22

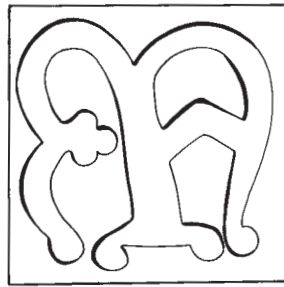


23.23

Fig 22.1 (cont'd): Transpennine Group design drawings. Scale 1:3



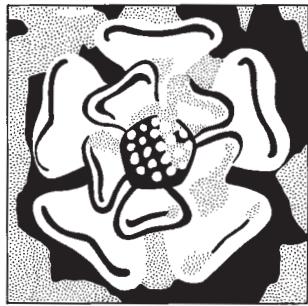
23.24



23.25



23.26



23.27



23.28



23.29



23.30



23.31



23.32

Fig 22.1 (cont'd): Transpennine Group design drawings. Scale 1:3

The Group 22 tiles are not extant but the fragment of 23.41 was not similar to the sgraffiato work shown in Figure 21.3d. The Sawley fragment might have been made with a stamp. In several respects, including the colour and poor application of the slip and glaze, and the part oxidation and fabric of the quarry, it is similar to tiles of the Transpennine Group at Sawley. However, a complete example of 23.41 would be considerably larger than average for a Transpennine Group tile.

Shape, size: The tiles were square, or were triangles scored and split from squares (5% of the assemblage). Several plain or worn tiles and fragments from Mount Grace were scored diagonally with a shallow line (1–2mm deep). The scoring is much slighter than that usually intended for splitting the tiles and may have been for decorative purposes.

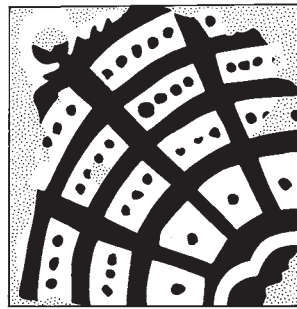
The upper surface of 90% of the complete tiles measured 110–122mm. The seven examples from Bolton were particularly small (103–110mm), although there were also a few tiles in this range from Fountains, Mount Grace, Rievaulx and Whalley (all the tiles of design 23.37 at Whalley were smaller than average). The tiles from Cockersand Abbey, Rievaulx and Pontefract were all larger than average. The depth of the tiles was also variable (23–40mm) with the tiles of Rievaulx and Whalley being deeper than the small number of surviving provenanced tiles from Fountains and Sawley.

Designs and arrangements: Designs 23.1–23.40 and possibly also design 23.41 (Fig 22.1).

Some of the Transpennine Group designs were made to be used in sets of nine or sixteen tiles. Arrangement numbers were allocated to each of these sets of designs, as follows:



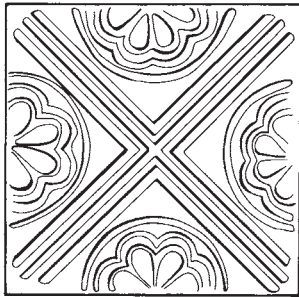
23.33



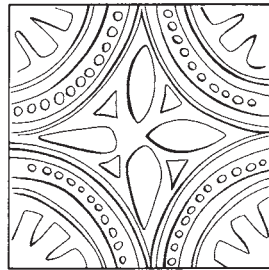
23.34



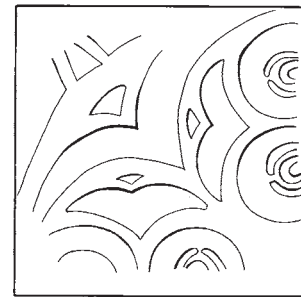
23.35



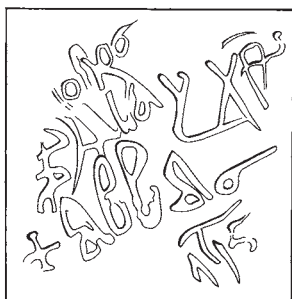
23.36



23.37



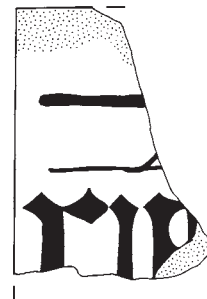
23.38



23.39



23.40



23.41

Fig 22.1 (cont'd): Transpennine Group design drawings. Scale 1:3

Designs 23.1–23.3	Arrangement 1 (16-tile)
Designs 23.4–23.6	Arrangement 2 (16-tile)
Designs 23.12–23.14	Arrangement 3 (9-tile)

A further 9-tile arrangement was suggested by design 23.15. Various designs were used in the centre of Arrangement 3. Three complete examples were uncovered in the chapter house floor at Whalley Abbey. Snapshots taken before the floor was reburied show that designs 23.17, 23.20 and 23.23 were used in their centres (23.17 and 23.23 are shown in Fig 22.2). The use of design 23.17 might be thought inappropriate in this location, since it forms a continuous repeating pattern (as, less obviously, does design 23.20). However, it was also used in the centre of a further, extremely abraded but still recognisable, example of this 9-tile arrangement that was re-set in the court-room floor at Fountains Abbey in the 19th century.

The two 16-tile arrangements (1 and 2) showed hunting scenes, with the designs of Arrangement 1 suggesting a palisaded park. The only extant provenanced components of Arrangement 2 are designs 23.4 and 23.5. Design 23.6 might be a further element (not extant but recorded by G.K. Beulah at Whalley Abbey). A complete but very worn 16-tile arrangement in the court room at Fountains may show designs 23.4 and 23.5 with design 23.8 and four tiles of design 23.28 in the centre. The British Museum catalogue has an arrangement of designs 23.4 and 23.5 together with an unprovenanced tile with a different dog design (Eames 1980, BMD/2940). From its circular border, design 23.8 seems to be part of a further 16-tile arrangement. Slight variations in design on the tiles that make up these arrangements suggest that more than one set of stamps existed in several cases, and an attempt has been made to reflect this in the design



Fig 22.2: Whalley Abbey chapter house (floor now reburied): the only known complete or near-complete examples of the Transpennine Group nine-tile Arrangement 3 in its medieval setting. The application of what looks like modern cement in these photographs is of concern when considering the survival of this pavement. Beaulah 1975

drawings shown here (compare, for example, the drawings of 23.12, 23.13, 23.14 and 23.16 in Fig 22.1).

Several other Transpennine Group designs were simple 4-tile arrangements. Some of these were made using the same design four times, but others may have used two or more different designs (23.26, 23.30, 23.32–23.35, 23.38, and perhaps designs 23.10 and 23.11). The inscription on design 23.33 would probably have linked up with inscribed bands on other tiles of the set. Walbran read the inscription as ‘merci god’ (1854, 27). This is probably incorrect as the last letter may not be a ‘d’, and/or there is another letter after it. The mixture of French and English is also unlikely. The central emblem of the complete set might have been a shield. If the animals represented were intended as dolphins they might relate to iconography associated with John Darnton, abbot of Fountains in 1479–1495. A repair work in the east end of the church is thought to have included a bust of John Darnton supporting two dolphins (Coppack 1993, 68).

Specific associations were identifiable for some other designs. The graffito dedication on 23.39 refers to an abbot of Sallay (Sawley). Design 23.29, similar to 24.30 of the Huby/Percy series, shows the *triskelion*, or three conjoined legs, which was the device of the Isle of Man. The bird’s feet were a badge of the Stanleys, Earls of Derby, who were granted the Isle of Man in

1405 (Coward 1983, 5). Design 23.25 is a monogram of MARIA.

It was not possible to identify the families referred to by designs 23.21 and 23.22. There is, also, little to support the suggestion made by J.R. Walbran that the W and crozier of design 23.24 might refer to an abbot of Sawley (*Memorials* II, 176). This design occurred at several different sites in the study area as well as in the west midlands (see further below).

Design stamps: Where the stamp impression was deep, individual stamps were identifiable. The same stamps were used to make tiles of designs 23.28 and 23.35 at Kirkham and Mount Grace; 23.24 at Bolton, Fountains, Mount Grace and Rievaulx; 23.32 at Fountains and Mount Grace; 23.8 at Cockersand, Fountains, Rievaulx and Whalley and 23.5 at Rievaulx and Whalley. Two different stamps were used to make tiles of design 23.13 at Rievaulx and Whalley. As noted above, the extant assemblage suggested that there was more than one stamp of several of the most popular designs.

Decoration: The decorative technique used to produce many of the Transpennine Group tiles was difficult to categorise. Most designs were stamped onto the tiles to a variable depth of 0.5–3mm. A thin layer of slip



Fig 22.3: *Transpennine Group tiles from Whalley Abbey (display panel)*

was added which did not always fill the cavity left by the stamp (as would be expected for a two-colour tile) but nor did it cover the whole surface of the tile (as usual in line impressed or counter relief decoration). As a result the tiles were variably recorded as one- or two-colour. Other decorative techniques occasionally employed include the graffito scrawled by hand on the quarry found at Sawley Abbey (design 23.39). The incised lines on the extant tile of design 23.22 from Whalley were probably also added by hand (see Fig 22.3).

The glaze was thrown on to the tiles carelessly, not necessarily covering the whole of the upper surface. Partly as a result of the uneven application of slip and glaze the colour of the tiles varied widely (black, dark and light brown, purple, light and dark green, olive and yellow).

To some extent the decorative technique varied on a site by site basis. The depth of the depression made by the stamp was 0.5–1mm at Mount Grace and Kirkham, but 1–2mm at Cockersand, Fountains, Pontefract, Rievaulx, Sawley and Monk Bretton. The depth of the depression made by the stamp varied at Whalley. The assemblage from this site included examples with a very faint impression (similar to some at Mount Grace) as well as tiles impressed to 2mm. Tiles from Bolton, Kirkham, Mount Grace and Pontefract were usually recorded as two-colour (other than the line impressed or relief decorated design 23.36). The assemblage from Sawley included both the two-colour and counter relief

examples. Most of the extant tiles at Whalley were recorded as counter relief (i.e. one-colour), regardless of the depth of the stamp impression, suggesting that there was a spread of slip on most extant tiles from this site (Fig 22.3).

The possibility that a high proportion of the decorated tiles at Whalley Abbey were intended to be one-colour is supported by what is known of the layout of the chapter house pavement (Fig 22.5). The floor was laid so that a series of 16-tile and 4-tile arrangements ran across the centre of the chapter house. On either side of this panel the pavement was set in a chequered arrangement of alternating light and dark tiles. Although little information about the colours of the decorated tiles were recorded before the floor was reburied, it appears from the plan that decorated examples were set where light-coloured tiles would have to be in order to maintain the chequered layout. This is consistent with the few surviving photographs. However, a minority of the decorated tiles at Whalley occurred as both counter relief and two-colour tiles in the extant assemblage; designs 23.7, 23.9 and 23.14.

A further feature of the assemblage from Whalley was the absence of the line impressed design 23.36. Whalley is the only site with a large Transpennine Group assemblage without tiles of this design. Design 23.37, which is only known at Whalley and could be described as line impressed, may have been used as an alternative at this site.

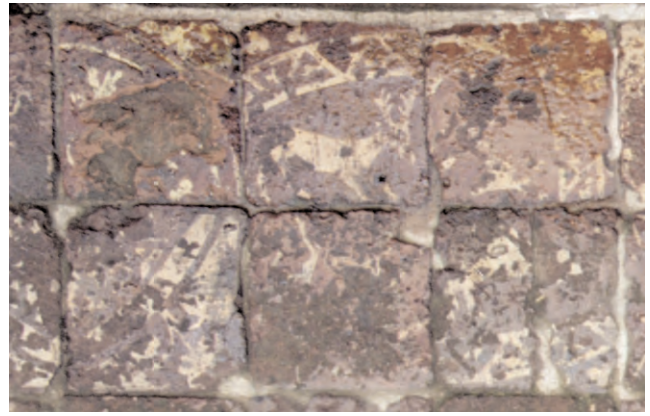


Fig 22.4: Rievaulx Abbey: Transpennine Group tiles, second bay from the west end of the church: comparison of the same tiles photographed by Whittle in 1964 (left; reproduced by kind permission of The Dalesman) and in 1988 (right), shows the deterioration in their condition. The tile of design 23.11 (top left) has lost most of its upper surface

Nail holes: Nail holes were definitely found on 19% of the recordable tiles. If probable occurrences were included, the proportion with nail holes was 25%. They were in the corners but not the centres of the tiles, at 10–20mm from the tile edges. They were identified on tiles of 13 different designs from Mount Grace, Pontefract, Rievaulx and Sawley – the sites with the largest samples. It is unlikely that they were absent at the other sites. It is also unlikely that the nails were attached to the design stamps, since tiles of the same design, probably made using the same stamp, occurred with and without nail holes.

Firing: 11% of quarries had a partly reduced upper surface, the rest were oxidised. A small number were over fired.

Fabric: There was little information on fabrics as most of the extant tiles were whole. 43% of the 37 tiles with a clean broken edge had fabric code 1 (Fountains, Kirkham, Monk Bretton, Mount Grace, Rievaulx). Other fabric codes were 2 and 3 at Mount Grace and Rievaulx and 8 at Sawley. For fabric descriptions, see Chapter 9.

Treatment of tile sides: 68% of the tiles had slightly bevelled sides, while 19% had vertical sides.

Treatment of bases: All the tile bases were sandy and without keys, but 10% of bases were uneven or rough.

Quality: 70% of the tiles were recorded as faulted during manufacture. Most of the problems related to the application of slip and glaze. The glaze had been patchily applied on 10% of tiles, while 46% had patchily applied or smeared slip. Other fault categories included rough, uneven or twice-stamped upper surfaces and spalled undersides.

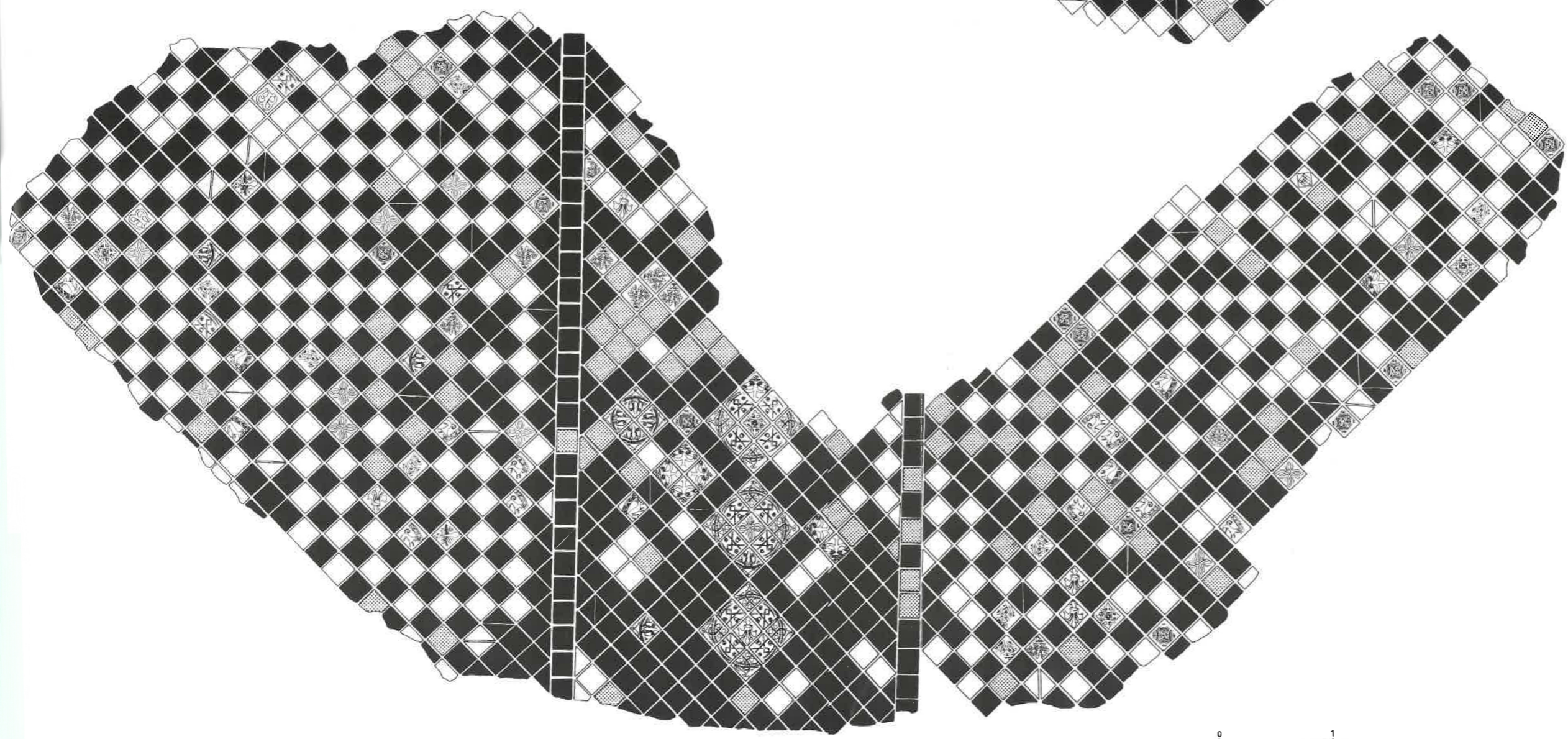
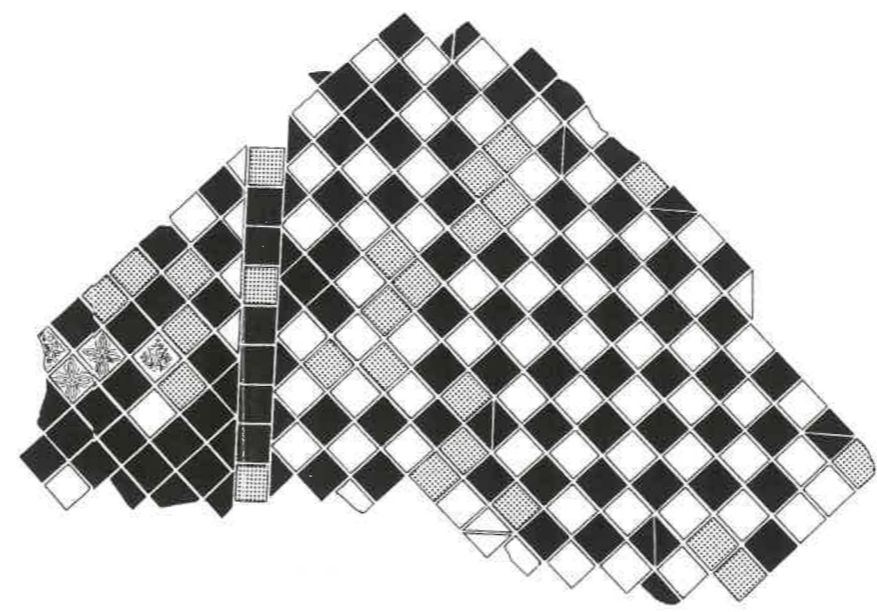
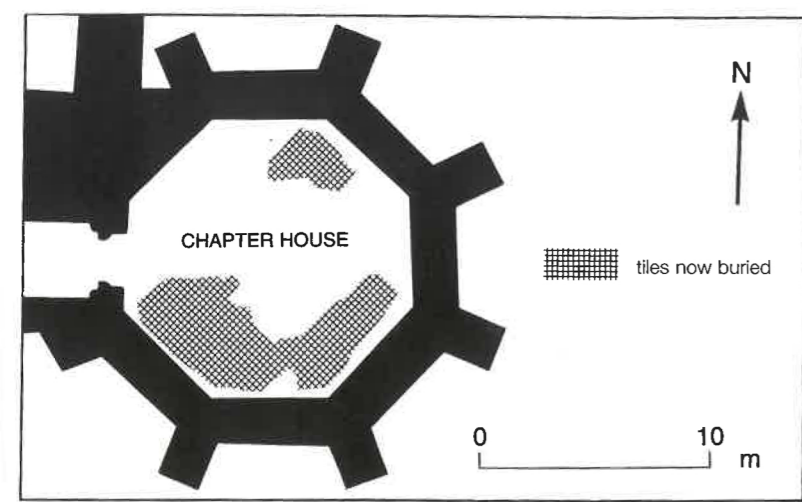
Discussion

The use of the same stamps to make tiles for more than one site and the broad similarities in other manufac-

turing characteristics suggested that the same tilers, or tilers working in a very similar tradition, were involved in the production of the tiles for all sites. However, the size of the tiles and aspects of their decoration tended to vary on a site by site basis. It seems likely that the tiles were made for each site in turn.

Links in manufacture between the Transpennine and Huby/Percy Groups were suggested by the strong similarity in their physical characteristics. The only variation was in the size of the quarries and the design stamps used. The two groups had the same mix of decorative techniques, the same proportion of tiles with nail holes and the same poorly applied slip and glaze. There were also several copies of Transpennine Group designs among the Huby/Percy tiles, particularly Transpennine designs 23.8, 23.12/23.14, 23.13, 23.28, 23.29, 23.31, 23.34 and 23.36 (compare with Huby/Percy 24.24, 24.26, 24.27, 24.30, 24.33, 24.35, 24.37 and 24.38). It seems certain that the person making the Huby/Percy stamps had access to the Transpennine Group designs, either through drawings, the stamps themselves or tiles made using those stamps. For further discussion, see Chapter 23.

Outside the study area, there were parallels to several Transpennine designs in the north-west midlands and Wales. The following list is far from exhaustive: designs 23.14 and 23.23 are known from Norton Priory, near Runcorn in Cheshire (Greene 1989; NP/5011-2) and design 23.2, or similar, from near Eastgate, Chester (BMC/1719, BMD/2943). Design 23.12 is known from the Dominican Friary, Chester (Rutter 1990, 44/304). A further variation on the arrangement that designs 23.12 and 23.13 belong to was found in excavations at Vale Royal Abbey, Cheshire (Thompson 1962, 12A–B). Fragments of one of the deer park arrangements, of which design 23.2 is a part, have also been found at Hulton Abbey, near Stoke on Trent, Staffordshire (Noel Boothroyd, pers. comm.). The Hulton examples are in counter relief rather than in two colours but, as noted above, many Transpennine designs occurred in both forms in the north. Several



- 23.35
- 23.31
- 23.21
- 23.25
- 23.17
- 23.37
- 23.32
- 23.23
- 23.12
- 23.20
- 23.34
- 23.38
- 23.8
- Plain yellow tiles
- 23.5
- Worn tiles
- 23.16
- Plain brown or black tiles
- R23.30



Fig 22.5: Whalley Abbey, plan of buried pavement in the chapter house, showing the layout of a Transpennine Group tiled floor. This floor is the only evidence that survives for the layout of Transpennine Group tiles. Scale 1:40

variations on design 23.36 were discovered on the site of the Roman amphitheatre, again in Chester (Thompson 1976, 219, fig 43, nos 1, 19, and 20; all unstratified). A further example of 23.36 was recorded by Renaud in 1859 (see ref. 17, p.368) from Marton Church, Cheshire (Volume 1, no. 50) and the same, or a similar design to design 23.9 (the archer) is known from Great Ness Church, in Shropshire (Eames 1980, BMC/913, BMD/1355). The mirror of this design has also been found at Norton Priory, Cheshire (NP/5050). The tiles known from Hammer parish church on the Welsh border may have originally belonged to Haughmond Abbey, Shropshire (Lewis 1999, Group 56, nos 761, 763, 764 and 769), but examples at Conway parish church and St Mary's Church, Welshpool, suggest that they were also used on sites in Wales (Lewis 1999, Group 53, no. 757 and Group 57, nos 770 and 772). Where comparison has been possible, the stamps used in the north of England were not the same as those used in the west midlands or Wales.

Dating

A 15th-century date is suggested by design 23.29, which must date after 1400 when the Stanley family were granted the Isle of Man. Tiles of the Transpennine Group were also the only decorated tiles used at Mount Grace Priory. This Carthusian monastery was founded in about 1398 and the surviving paving extended into areas of the church not built before *c.*1420 (see Fig 27.28). The excavation records and the consistent layout of the remaining areas of tiling at Mount Grace, which align correctly on the diagonal, suggest that much of the church was paved. Later alterations to the High Altar may be associated with the use of some Plain-glazed tiles, a few of which remain re-set in the chancel. The Transpennine Group at Mount Grace can therefore be dated to after *c.*1420 and, probably, to before the unknown date that the altar area was reorganised.

Whalley Abbey was a late Cistercian foundation of 1296. It took over a hundred years to build the church and the main conventual buildings at this site. A tentative *terminus post quem* for the use of any tiles at Whalley might be the late 14th century. However, a later date for the Transpennine tiles here is suggested by G.K. Beulah, who visited the site when it was being cleared and saw one of the designs used in the chapter house floor also laid in large numbers in a pavement in the choir (Beulah 1935, 95–103). Building work was documented as going on in the choir in 1434 (Whitaker 1872, II, 90–100). If the paving in the choir post-dated this work, and was part of the same scheme as that in the chapter house, a date after 1434 might generally be suggested for the Transpennine Group tiles at this site.

A date not before the second quarter of the 15th century, and probably later still, seems likely for the Transpennine Group. A later 15th-century date, or continuation in production to the late 15th century, would be suggested by the apparently close links between the Transpennine and Huby/Percy tile groups. The Huby/Percy tiles were definitely being made *c.*1500. Transpennine and Huby/Percy tiles were found together at two sites in York. While nothing definite is known of the medieval contexts of these finds, all the examples found in North Street, York, were in similar pristine, unused condition, perhaps suggesting a common history. A later 15th century date would also be supported by Yorkist associations in the motifs of some designs. The fetterlock (displayed in design 23.13 with two roses) was a Yorkist device used by Edward IV, 1442–1483, among others (Lewis 1999, 95). The heart motif may reflect the new popularity of playing cards in England at this time (Benham 1957, 25–7). At a later date the Queen of Hearts was a popular reference to Elizabeth I but playing cards were also a pastime of Elizabeth of York, mother of Henry VIII, and it is possible that the motif referred to her (Benham 1957, 81; Nicolas 1830, xcvi and 84). The white rose of design 23.27 may have been intended as a Yorkist badge.

There is little independent dating for the comparative material in the west midlands and Wales. John Lewis assigned a 15th- or 16th-century date to his Groups 56 and 57. The same dates were quoted by Janet Rutter for the Chester material, based on parallels in the British Museum collection. The parallels at Norton Priory were generally associated with the late medieval tiled floor and thought to date after 1400 (Greene 1989, 148).

Concordance

Site	Design no.	BMC	BMD
Bolton Priory	23.17	7663	2402
Fountains Abbey	23.4	1744	2939
Rievaulx Abbey	23.4	6161–4	2939
Rievaulx Abbey	23.5	6165	2941
Rievaulx Abbey	23.7	6170–2	457
Rievaulx Abbey	23.11	6166–7	1926
Rievaulx Abbey	23.13, 23.16	6099, 6100	2846
Rievaulx Abbey	23.14	6101–4	2845
Rievaulx Abbey	23.15	6173–5	2858
Rievaulx Abbey	23.17	6182	2272
Rievaulx Abbey	23.19	6179	2087
Rievaulx Abbey	23.24	6071–3	1459
Rievaulx Abbey	23.27	6095	2299
Rievaulx Abbey	23.28	6159	2399
Rievaulx Abbey	23.29	6077–8	1557
Rievaulx Abbey	23.31	6093	2917
Rievaulx Abbey	23.32	6176	3083
Rievaulx Abbey	23.34	6090–2	2744
Rievaulx Abbey	23.35	6096	1746
Rievaulx Abbey	23.36	6130	204

23 The Huby/Percy tile group, c.1500

Tile Group 24 (Fig 23.1–23.4)

The Huby/Percy tiles are similar in manufacture to those of the Transpennine Group but are later in date, securely placed in the decades around 1500. The designs include a number of copies of Transpennine Group designs, plus several new types with heraldic motifs and inscriptions (Fig 23.1).

Sites, sample and condition: There are 164 decorated tiles extant in loose collections, plus several areas of re-set paving (Table 23.1; the distribution of the tiles is plotted in Figure 6.1). There are also *c.*100 worn or plain tiles from Rievaulx which may belong to this group.

The assemblage of decorated tiles in loose collections was made up of 25% fragments (i.e. without a complete upper surface dimension) and 50% worn tiles. However, some of the unworn examples were in pristine condition. The difficulties encountered in identifying and drawing these designs was a result of the poor quality of the decoration when the tiles were made, rather than later wear.

All the areas of re-set tiling were in extremely worn or abraded condition with barely a single identi-

fiable design on the pavement in the infirmary at Fountains or on the tiles in the church at Rievaulx. The loss of the infirmary hall floor, described as in good condition in 1936, is particularly regrettable. The tiles at the southern end of the west claustral walk at Byland are an important survival and, although difficult to see, include 15 designs that are either only known, or are best represented in this floor (Fig 23.4; designs 24.1, 24.9–24.12, 24.14, 24.19–24.20, 24.23–24.25, 24.35, 24.37–24.38 and 24.39). A worn and abraded tile of design 24.32, re-set at Thornton, is also unknown elsewhere.

Shape, size: The tiles were square or scored and split triangles. It is possible that only plain tiles were scored and split. The upper surface dimensions of examples from Rievaulx, Hull, Byland, Cockersand, Thornton, Kirkham and Sawley were 140–152mm. The tiles at Fountains were consistently smaller, 126–139mm, with only two tiles from this site of more than 140mm. Depth varied widely, 25–40mm, at all sites. The tiles of design 24.40 from Winestead were 203–204mm across and 36–39mm deep.

Table 23.1: Sites, designs and numbers of tiles

<i>Sites</i>	<i>Nos extant (loose)</i>	<i>Re-set paving</i>	<i>Designs</i>
Byland Abbey	1	West claustral walk	24.1, 24.3–24.4, 24.9–24.11, 24.12*, 24.13–24.14, 24.17–24.20, 24.23–24.26, 24.33, 24.35, 24.37–24.39. Unallocated design, possibly Huby/Percy: Un/29 (see Fig 26.2)
Fountains Abbey	33	Infirmary hall	24.1–24.2, 24.5–24.8, 24.26–24.27, 24.30, 24.33
Cockersand Priory	13		24.30, 24.33, 24.38 and a variant of 24.26
Hull, Old Town	5		24.26, 24.27, 24.31
Kirkham Priory	7		24.33, 24.30
Rievaulx Abbey	57	Nave	24.2, 24.5–24.8, 24.17–24.20, 24.26, 24.30, 24.33, 24.36
Sawley Abbey	2	Possibly the tiles in the north transept	24.33. Either 23.28/24.35 (Transpennine or Huby/Percy)
Thornton Abbey	1	3 in the crossing	24.32, 24.34, 24.36
York:			
Holy Trinity Priory	1		24.18
Lord Mayor's Walk	2		24.30
North Street (?kiln)	9		24.2–24.3, 24.15–24.16, 24.21–24.22, 24.28–24.29
York Minster	14		24.33, 24.39
Elsewhere	2		24.22, 24.33
Winestead Manor	17		Probably Huby/Percy: design 24.40
Possibly All Saints', North St, York	–		24.33 or 23.36 (either Huby/Percy or Transpennine)**

* There is a rare but unprovenanced example of design 24.12 in Leeds museum.

** Design 24.33 of the Huby/Percy Group is the same as design 23.36 in the Transpennine Group, but occurs on different sized quarries in the two groups. The design, but not the size of the tiles, was recorded from this site and could belong to either the Transpennine or Huby/Percy Groups.

Designs and arrangements: Designs definitely of the Huby/Percy Group are numbered 24.1–24.39 (Fig 23.1). Although of larger size, design 24.40 was thought likely to belong to this group (Fig 23.2). The Unallocated design Un/29 could be another example (Chapter 25 and Fig 26.2).

Several of the Huby/Percy Group designs were intended for use in sets of four, making up circular banded inscriptions enclosing a shield or other emblems. The motifs in the outer corners were used on more than one 4-tile set. Design 24.40 (Fig 23.2) is slightly different, with the shield set on an angle and shown almost complete on one larger-sized tile. However, the missing corners of the shield and the lettering, which is similar in style to that of design 24.34, show that this design was also intended to be part of a 4-tile set. The 4-tile arrangements of Huby/Percy designs were as follows:

Designs 24.1–24.4	Arrangement 4
Designs 24.5–24.8	Arrangement 5
Designs 24.26–24.27	Arrangement 6
Designs 24.13–24.16	Arrangement 7
Designs 24.9–24.12	Arrangement 8
Possibly designs 24.21 and 24.22	Arrangement 9
Designs 24.17–24.20	Arrangement 10

Designs 24.23–24.25 were used to make up the only 16-tile arrangement (Arrangement 11).

In some cases the heraldry and inscriptions of these designs can be linked with known institutions or personalities. The most precise personal reference was found on Arrangement 4. This includes the inscription SOLI DEO HONOR ET GLORIA – To the only God be honour and glory. The inscription surrounds a shield containing a mitre and crosier and the letters M and (probably) H. The motto, abbreviated from Timothy I, 17, was taken from the Cistercian breviary or service book, and both this and the monogram was widely associated with Marmaduke Huby, abbot of Fountains, 1494–1526 (Hope 1900a, 315–16). This design, with the monogram formed of dragons and a bird (a hobby or small hawk that puns on the abbot's name), was found in stone on a shield held by an angel at the end of a hood moulding, located on the western side of the arch in the south presbytery aisle of Fountains Abbey. Other examples were discovered by Walbran, on a stone built into a cottage near Fountains, and by Hope, on a stone slab found during excavations in the church (Walbran 1856, 125; Hope 1900a, 311; Coppack 1993, 77, pl 63). In a breviary of 1516 the design was coloured gold on blue and no doubt the examples in stone would have been similarly colourful (Fig 6.2). The motto was also carved in relief Gothic lettering along the string course on the south side of the north transept tower at Fountains, built during Huby's abbacy. The inscription and Huby's initials were also known from several sites in the vicinity of Fountains including the tower on How Hill,

Winksley Church and Beverley chapel. Similar monumental inscriptions survive in stone at Brimham, a grange of Fountains, and it is possible that the Ladykirk in Ripon was labelled in the same way. Nothing of this chapel is now standing but Leland records that, after it was given to Marmaduke Huby, the east end was replaced 'with a fine new structure of squared masonry' (Chandler 1993, 556).

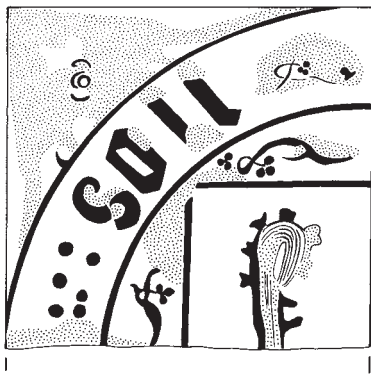
The association with Marmaduke Huby gives Arrangement 4 a date after the beginning of his abbacy in 1494. Tiles with this design were not confined to Fountains, also occurring at Byland, Rievaulx and in York.

Arrangement 5 has the inscription BENEDICITE FONTES DOMINO, a motto taken from the Apocrypha, Song of the Three Holy Children v.55. The inscription encloses a shield bearing three horse-shoes and again this design is closely associated with Fountains Abbey. It occurred in stone on a shield on the east side of Huby's tower, and also at the other end of the hood moulding described above. Although used by Huby, the text referred generally to Fountains and the motto was certainly in monumental use before Huby's time. It occurred on a repair work to the east wall of the church which is inscribed 1483 (Walbran 1856, 84) and, with different arms, on a seal of the abbey dated c.1424 (Clay 1928, 17). Tiles of Arrangement 5 were found at Fountains and Rievaulx.

Designs 24.26 and 24.27 of Arrangement 6 were used in a 4-tile arrangement but in a different and non-heraldic style, enclosing the letters J and, possibly, D. These may have referred to Huby's predecessor John Darnton, abbot of Fountains 1478–94. If so, they suggest a *terminus post quem* of 1478 for the design. The broken tile of this design from Cockersand may have had a different letter in the corner, possibly I (not drawn; Sherdley and White 1975, fig 4). These designs were among the most widely distributed of the group although they have not yet been found in York.

Tiles of Arrangement 7 had a crescent and shackle pin in the outer corners of the designs. This was a badge used by the Percy family. The arms were encircled by a garter inscribed with the motto HONY SOYT QUY MA(L Y PENSE). The Order of the Garter was founded by Edward III in 1348 and a badge with the garter and motto surround has survived from the late 14th century (Cherry 1991, 32). The arms of Arrangement 7 belonged to Henry Algernon Percy, fifth earl of Northumberland, who was made a Knight of the Garter in 1495 and died in 1527 (Murray 1994, 34–8; compare Arrangement 7 with the arms of the fifth earl shown in Fig 23.3). As with many of the tiles of this group, the designs on all examples were smeared. The lettering style, with the serrated edges, may have been more consistent than is apparent on the drawn examples. The tiles are known from Byland Abbey and York.

Arrangement 8 was similar in style to Arrangement 4 but had the Percy badge in the corners, like Arrangement 7. The lettering is not entirely under-



24.1



24.2



24.3



24.4

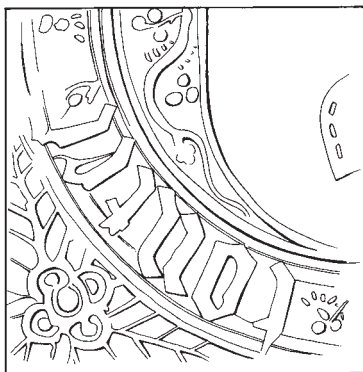
Arrangement 4



24.5



24.6



24.7



24.8

Arrangement 5

Fig 23.1: (pp.238–242) Huby/Percy Group design drawings, Arrangements 4 and 5. Arrangement 5 illustrates both two-colour and counter relief examples. Scale 1:3



24.9



24.10



24.11



24.12

Arrangement 8



24.13



24.14



24.15



24.16

Arrangement 7

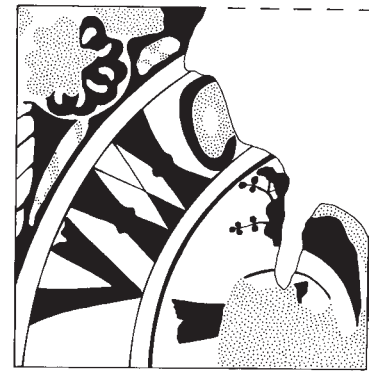
Fig 23.1 (cont'd): Huby/Percy Group design drawings, Arrangements 8 and 7. Scale 1:3



24.17



24.18



24.21



24.19



24.20



24.22

Arrangement 10

Arrangement 9



24.23



24.24



24.25

Arrangement 11



24.26



24.27

Arrangement 6

Fig 23.1 (cont'd): Huby/Percy Group design drawings, Arrangements 6, 9, 10 and 11. Scale 1:3



24.28



24.29



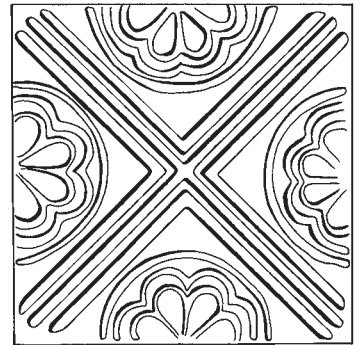
24.30



24.31



24.32



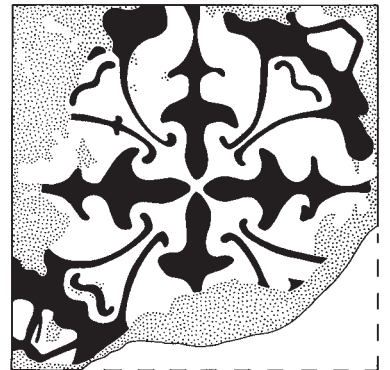
24.33



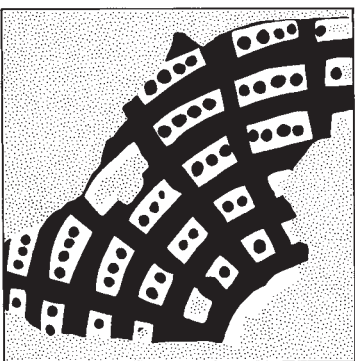
24.34



24.35



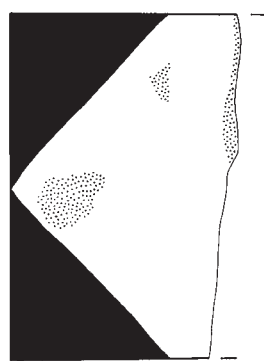
24.36



24.37



24.38



24.39

Fig 23.1 (cont'd): Huby/Percy Group design drawings. Scale 1:3



24.40

Fig 23.2: Design 24.40 of the Huby/Percy Group. Scale 1:3

stood but might read BENEDICITE DOMINO HELAY. In the first quarter the shield has a P and another letter, in the second a bird, in the third the letters Rc and in the fourth Rd. No definite attribution has been made. The tiles are in the west claustral walk at Byland.

Designs 24.21 and 24.22 may have formed two elements of Arrangement 9, with the apparent variation in the corner motifs a result of smeared slip. The lettering may be reversed, with this part of the inscription perhaps intended to read -MUNDUS. More probably, the inscription could be read the right way round as SIGNUM. SIGNUM SCE CRUCIS was the inscription on a 14th-century tile from Buckinghamshire (Hohler 1942, P2; Eames 1980, BMD/1407). In Arrangement 9, the inscription encloses a rebus with the letter 'A' above a tun. Elizabeth Eames suggested that the tun might be pierced with a crosier and refer to a member of the religious, as found on a tile of a different series dedicated to Anthony Melton, Abbot of Hailes, Gloucestershire (Eames 1980, 1, 272, BMD/1460). No identification has been made as yet. No doubt the second initial would appear on the other two tiles of the arrangement. The lettering on the extant tiles is characterised by small indentations to the sides and terminals. These were clearest on the letters of design 24.22 but also occurred on the tile of design 24.21. The tiles were found in York.

The *triskelion* of design 24.30 was the device of the Isle of Man and the bird's feet were a badge of the Stanleys, earls of Derby, who were granted the Isle of Man in 1405 (Coward 1983, 5). The design is likely to date after this event and is known on a seal of Thomas Lord Stanley, Earl of Derby KG 1483–1504 (Willmot 1972, 178; the seal was published by Hope 1901b, pl 86). Tiles of this design have been found at Cockersand, Fountains, Rievaulx and Sawley Abbeys and from Lord Mayor's Walk, York.

Design 24.40 (Fig 23.2) displays the arms of the Tunstall and Boynton families together with the Hildyard badge. The tiles were laid in the Hildyard manor house at Winestead and were possibly intended to stress bonds by marriage connecting families with similar religious convictions. The link through marriage between Hildyard and Boynton may have been emphasised by a subsequent generation because of the connection this established between the Hildyard and Tunstall families. In the earlier 16th century, Cuthbert Tunstall (Bishop of Durham) was a prominent supporter of traditional religion and its institutions and these views were shared by successive generations of the Hildyard family (Miller 1932, 96–116). A firm friendship was formed between Richard Hildyard (brother of Sir Christopher) and Cuthbert Tunstall. Tunstall was rector of nearby Barmston in 1506/7. Richard campaigned with the bishop against Henry VIII and the attack on the monasteries. He became rector of Winestead in 1528 and was chaplain or secretary to Tunstall in 1536 before escaping to Scotland. Sir Christopher, who was also a supporter of the old religion, was called upon to sentence some of his comrades following the Pilgrimage of Grace in 1536. He died in France in 1538. In *c.*1530, however, Christopher Hildyard may have wished to stress his family's links through marriage with Tunstall, using the designs in a tiled floor in his new house to emphasise their common religious, political and social allegiance.

Several other designs in the Huby/Percy Group were probably also personal commemorations or dedications but their associations have not yet been identified. The tiles of Arrangement 10 found at Byland, Rievaulx and at Micklegate, York, are in the same style as Arrangements 4 and 5 (which are closely associated with Marmaduke Huby and Fountains) and, like Arrangement 5, may be inscribed 'BENEDICITE'. The full dedication is not known. Hugh Murray (1994) suggests that the use of catherine wheels and water bougets together in this arrangement may have a monastic connection. Walter Espec's attributed arms were *gules three catherine wheels argent*. Espec had

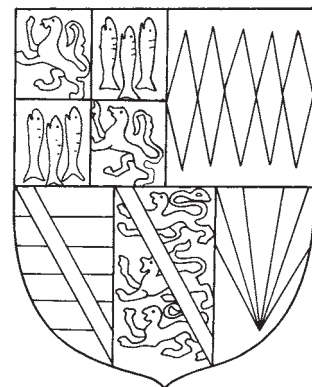


Fig 23.3: The arms of Henry Algernon Percy, fifth earl of Northumberland. Compare with Arrangement 7 (designs 24.13–24.16)



Fig 23.4a–h: Hubby/Percy tiles re-set in the west claustral walk, Byland Abbey, including some of the rarest designs: a) with designs 24.9, 24.10, 24.12, 24.19, 24.35; b) designs 24.14, 24.18; c) designs 24.1, 24.10, 24.23; d) designs 24.12, 24.18, 24.19; e) designs 24.20, 24.33, 24.35, 24.38, 24.39; f) design 24.9, 24.37; g) design 24.11; h) designs 24.10, 24.24, 24.25. Although the designs were haphazardly placed in the floor, the overall layout of the paving was consistent, with six courses of tiles set square to the passage wall and subsequent courses laid on the diagonal (as shown in a, top left)

founded both Kirkham and Rievaulx Abbeys in the 12th century. One of his three daughters and co-heirs married Peter de Roos (*gules three water bougets argent*) who then inherited the privileges of the founder.

Designs 24.28 (from York) and 24.31 (from Hull) show that tiles of at least two further Huby/Percy Group arrangements await discovery. The significance of OWALLA on design 24.31 was not known. Comparison with other tiles of the Huby/Percy Group suggested that the inscription was more likely to be part of a motto or saying than a name. The motif within the inscribed band may have linked with the other tiles of this arrangement to make a shield and this would have identified the person, family or institution concerned.

Other design arrangements in the Huby/Percy assemblage include the 16-tile set of Arrangement 11, possibly a hunting scene, and those that would have incorporated designs 24.29 and 24.32. The rest of the non-heraldic patterns of this group were either continuous repeating or stand-alone designs. Several were closely similar to examples of the Transpennine Group (see further below; Table 23.2).

Design stamps: Since many of the designs, particularly those that included inscriptions and heraldry, were very elaborate, they are unlikely to have been copied. However, there were barely enough duplicated examples to compare stamps. Tiles of design 24.33 at Kirkham and Fountains were made with the same stamp, as were tiles of design 24.30 at Rievaulx and Kirkham and tiles of design 24.34 at Rievaulx and Thornton. Tiles of designs 24.26 and 24.27 at Fountains and Hull were made with the same stamps but the stamp of this design at Cockersand differed. The stamps of design 24.38 at Cockersand and Byland also varied. Two different stamps of design 24.33 were identified at Fountains, although identifying the use of the same stamp with certainty on a symmetrical design such as this is difficult unless the stamp is cracked. No cracked stamps were noted. The trouble taken in cutting out the more intricate Huby/Percy design stamps was difficult to reconcile with the poor quality of manufacture of the actual tiles.

Decoration: Tiles of design 24.33 made up 20% of the assemblage, all of which were one-colour and line impressed or relief decorated. A further 13% of tiles were also one-colour with relief or counter relief decoration. These included examples of the tiles of Arrangements 5 and 10 from Fountains, design 24.30 at Fountains and Rievaulx, design 24.2 at Fountains, 24.5 and 24.8 at Rievaulx and 24.4 and 24.37 at Byland. The depth of the stamped depression was *c.*1–3mm. In total, 48% of tiles were slip decorated to make a two-colour design. In all cases a thin slip was used. This was *c.*0.5mm deep even where the stamp impression was *c.*3mm deep. The usual colours were red-brown and yellow. Reduction of the upper surface added an olive tinge. However, the full range of colours

recorded included black, dark brown, olive brown, purple, light green, olive and yellow.

Nail holes: 17% of Huby/Percy Group tiles definitely had nail holes in the corners of the tiles, at 10–20mm from the tile edges. If tiles that probably had nail holes were included, the proportion rose to 27%.

Firing: Almost all of the Rievaulx and York tiles had oxidised upper surfaces, while 36% of the Fountains tiles were partly reduced. All but three examples of the remaining 38 fragments were oxidised. The three partly reduced examples were all from Fountains.

Fabric: 50% of tiles were of fabric code 1; 25% code 3; the remainder were codes 8 or 9 (see Chapter 9 for fabric descriptions).

Treatment of tile sides: 72% of tile sides were slightly bevelled, 27% were vertical.

Treatment of bases: In all cases the bases were sandy and without keys.

Quality: 66% of all the tiles recorded were classed as damaged during manufacture. Most of these had a smeared slip and/or were only partly coated with glaze (see Fig 23.4). Some tiles were so badly smeared that the design was barely recognisable. Some of the Cockersand pieces were almost unglazed.

Discussion

The use of some of the same stamps and the similarity in physical characteristics of the tiles at different sites suggested that they were made by the same tilers, or by tilers working in the same tradition. The tiles of design 24.40 from Winestead were of a larger size than other Huby/Percy tiles but shared many other characteristics. They were thought to be of slightly later date (see further below). The tiles at Fountains also differed to some extent from those at other sites. They were consistently smaller in size and included a higher proportion of examples with a partly reduced, rather than oxidised, fabric. The use of an additional stamp of design 24.33 was also only identified at Fountains.

The Huby/Percy tiles were similar to those of the Transpennine Group. Apart from the larger quarry size of the Huby/Percy tiles, the physical characteristics of the two groups were very much the same. Both groups had a similar combination of decorative techniques, the proportions of tiles with nail holes were the same, the proportions of tiles with poorly applied slip and glaze were the same, and their fabrics, firing and the variety of colours in the glaze were similar. Several of the designs are paralleled in both groups as shown in Table 23.2.

The two groups were found at some of the same sites (Fig 6.1; at Cockersand, Sawley, Fountains,

Table 23.2: Design parallels between the Transpennine and Huby/Percy Groups

<i>Transpennine Group</i>	<i>Huby/Percy Group</i>
23.8	24.24
23.12–23.14	24.26–24.27
23.28	24.35
23.29	24.30
23.31	24.38
23.34	24.37
23.36	24.33

Rievaulx, Kirkham) but were not set in the same pavements. The Huby/Percy tiles were used alone in the cloister at Byland and in the infirmary at Fountains, while Transpennine Group tiles were used alone in the pavement at Mount Grace. Transpennine Group tiles were found at Bolton, Monk Bretton, Pontefract and Whalley, sites which apparently did not have Huby/Percy tiles. At Byland and Thornton, Huby/Percy tiles were in use but not Transpennine tiles. However, finds of unused tiles of both groups at the possible kiln site in North Street, York, and perhaps also the smaller size of tiles of both groups from Fountains, might suggest that they were sometimes made together. The dating evidence for the Transpennine Group suggested the later 15th century, perhaps the third quarter of the 15th century. This is earlier than much of the dating for Huby/Percy production (see below). While some overlap between the two groups is possible, it seems likely that several sites placed separate orders for the two groups of tiles.

Dating

The dating evidence for the Huby/Percy Group depended upon associations provided by the heraldry and inscriptions (for dating at individual sites, see entries in Chapter 27). The most clearly identifiable personalities were Marmaduke Huby, abbot of Fountains 1494–1526 and Henry Algernon Percy KG 1495–1527. Production around 1500 seems certain. Other suggested dedications were to John Darnton, abbot of Fountains 1478–1494, the earls of Derby after 1405 (perhaps, in this case, specifically Thomas Stanley 1483–1504), and arms celebrating a connection between the Tunstall and Hildyard families, whose use might date to *c.*1530.

It is difficult to judge the date at which production may have begun. If the dedication to John Darnton were accepted, production in last quarter of the 15th century is possible. However, if the designs relevant to Huby and Fountains were accepted as being made during Huby's abbacy, then the tiles at Byland, Fountains, Rievaulx and North Street, York, whose assemblages all include Huby/Fountains tiles, must have been made after 1494. This leaves Cockersand, Kirkham, Sawley, Thornton and sites in Hull and York as places that

could have been supplied at an earlier date. However, these are the sites with the smallest extant assemblages and it remains possible that they also had the later designs.

The Percy designs have only been found at Byland and in North Street, York. Both these assemblages also contained Huby designs. The Percy designs may, therefore, have been made after the Huby designs, with the Byland and North Street tiles dating after those at Fountains and Rievaulx. There is no evidence for the use of the Percy tiles on properties of the Percys although it seems likely that they would have been first made for such an instance. The main residences of the Percys in the earlier 16th century were in Yorkshire, and the fifth earl established households at Wressle and Leconfield from 1512 (Batho 1957; 1962). However, there are no Huby/Percy tiles in the collection of the present Duke of Northumberland and none known from the sites in Yorkshire. The Percy badge can be seen on one of the roof bosses of the 'Percy chantry' at Tynemouth Priory. Antiquarian restoration of this chapel did include paving the floor with ceramic tiles, but there is no evidence that these replaced a medieval tiled floor and no Huby/Percy Group tiles are known from Tynemouth.

Stylistically, the shield shape of design 24.40 (Fig 23.2) suggests a later date than that of the other heraldic designs, perhaps *c.*1530 (Neubecker 1977, 76–7). Circumstantially, as has been seen, the most likely date for the use of these tiles at the Hildyard manor at Winestead is the 1530s, although the alliance commemorated by the heraldry was of earlier date. If correctly assigned to the Huby/Percy Group, it is possible that these tiles show that the workshop continued its operations into the second quarter of the 16th century.

Concordance

<i>Site</i>	<i>Design</i>	<i>BMC</i>	<i>BMD</i>
Byland	24.13	1672	1443
Fountains	24.6	1747	336
Fountains	24.7	1748	1488
Fountains	24.8	1749	1489
Fountains	24.26	1750–1751, 1753	1470
Fountains	24.27	1752	1471
Rievaulx	24.2	6127	1494
Rievaulx	24.3	6124–6126	1495
Rievaulx	24.5	6116–6118	1486
Rievaulx	24.6	6108–6111	1487
Rievaulx	24.7	6114–6115	1448
Rievaulx	24.8	6112–6113, 6119	1489
Rievaulx	24.17	6121	1490
Rievaulx	24.18	6128–6129	1491
Rievaulx	24.19	6122–6123	1492
Rievaulx	24.20	6120	1493
Rievaulx	24.26	6105	1470
Rievaulx	24.30	6074–6075	1558
Rievaulx	24.33	6131–6136	203
York	24.22	478	1462

24 Small assemblages dating from the 15th/early 16th centuries

There is little information about the following small groups of tiles. The few indications suggest a 15th or early 16th century date as most likely.

Tile Group 25 (Fig 24.1)

A poorly defined group with varying characteristics although the same design stamps were used at more than one site (Table 24.1).

As the characteristics of the tiles varied to some extent by site, they are set out separately below.

Table 24.1: Sites, sample size and designs

	<i>Fountains Abbey</i>	<i>Meaux Abbey</i>	<i>Bridlington Priory</i>
Design 25.1	3	–	–
Design 25.2	2	1	–
Design 25.3*	1	–	–
Design 25.4	1	–	–
Design 25.5	1	–	–
Design 25.6	1	–	–
Design 25.7	1	4	–
Design 25.8	–	1	–
Design 25.10	–	5	1
Design 25.11	–	5	–
Design 25.12	1	–	–

*The drawing of design 25.3 in Figure 24.1, made from the only example in the loose collection, could be extended using a very worn, but just visible, complete example re-set in the Court Room floor at Fountains.

Fountains Abbey

Sample and condition: The loose assemblage consisted of eleven examples, nine fully recorded, six worn, with two fragments. Further very worn examples are re-set in the Court or Muniment Room floor at Fountains. This first floor room was tiled in 1855 probably with a mix of tiles found during earlier clearances and from Walbran's own excavations (Walbran 1856, 92 fn). The Court Room was used as a workshop for a time in the 20th century and the floor is now extremely abraded and worn. The one clear example of 25.4, almost the only unworn tile in the entire floor, is set with tiles of designs 25.2 and 25.3 in more than half of a 16-tile arrangement. However, the arrangement is not entirely convincing because the corner motif of design 25.4 does not fully match that of the other two designs. Part of design 25.4 may have been interpreted as representing three horseshoes, the arms of Fountains Abbey, for example in Walbran's drawing of this design (1851, opp. p.286).

Shape, size: Square, 114–122mm across and 30–36mm deep (with one outlier on depth).

Decoration: Stamped and slip decorated with up to 1mm of slip. Glaze over slip: yellow, yellow/olive or yellow/brown. Glaze over body: olive/yellow, brown, red/brown, black.

Design stamps: The same stamp was used to decorate the tiles of design 25.7 from Fountains and Meaux.

Nail holes: None.

Firing: Oxidised surfaces, reduced core, a little of the upper surface reduced on some examples.

Fabric: No information.

Treatment of tile sides: Vertical to slightly bevelled.

Treatment of bases: Sandy, no keys.

Quality: Generally good. White clay has fallen out in one case. Glaze was not applied over the whole surface in another.

Meaux and Bridlington Priory

The characteristics of the tiles from Meaux and that apparently provenanced to Bridlington Priory (see entry 13, Chapter 27) were as follows:

Sample and condition: Seventeen tiles, fifteen fully recorded, three worn, one fragment.

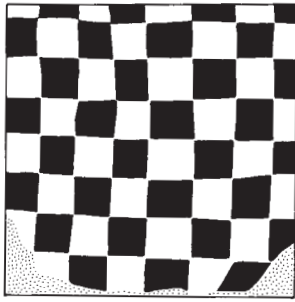
Shape, size: Square, 120–127mm across and 36–41mm deep (with one outlier on depth). However, the tiles of design 25.11 measured 114–121mm, like the assemblage from Fountains.

Decoration: Stamped and slip decorated with up to 1mm of slip. Glaze over slip: yellow, light green, yellow/brown, orange. Glaze over body: dark brown/olive, red/brown, metallic sheen.

Design stamps: The same stamp was used on tiles of design 25.10 from Meaux and Bridlington. The same stamp of design 25.7 was used on tiles from Meaux and Fountains.

Nail holes: None.

Firing: Oxidised surfaces, part of the upper surface was reduced on some examples.



25.1



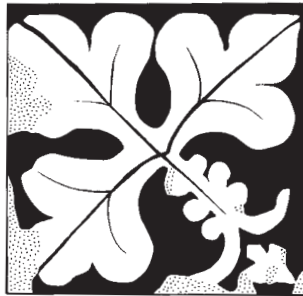
25.2



25.3



25.4



25.5



25.6



25.7



25.8



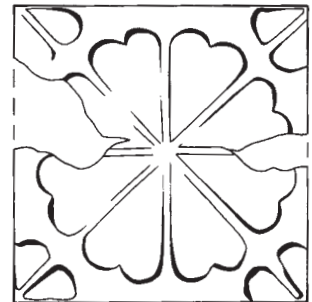
25.9



25.10



25.11



25.12

Fig 24.1: Group 25 design drawings. Scale 1:3. Design 25.10 reproduced by courtesy of the Trustees of the British Museum

Fabric: Where visible, the fabric fired orange with a smooth fracture, fine sand, few voids and no other inclusions.

Treatment of tile sides: Vertical or slightly bevelled.

Treatment of bases: Uneven, sandy, without keys.

Quality: Damage in firing included bleeding of the dark brown glaze, the glaze not being applied over the whole surface and the white clay falling out.

Discussion

The use of the same stamps on tiles from the different sites suggested strong links in their manufacture. However, the tiles from Meaux were larger and thicker than those from Fountains apart from the examples of design 25.11, which had similar traits at both sites.

There were some broad similarities between these tiles and those of the Transpennine Group but no nail holes were apparent and the white clay was deeper among the tiles of Group 25 than on the Transpennine Group tiles. Also, where there was a lack of differentiation between the design and background, it seemed to be a fault in the glaze rather than the smearing of slip (the most common fault on tiles of the Transpennine Group). Closer stylistic parallels were apparent between the designs of Group 25 and those of Group 26 at Whalley Abbey (see further below). Designs similar to

25.7 have been found at sites in the south and west midlands (Eames 1980, BMD/1844) but were not made with the same stamp as the northern tiles.

Dating

Elizabeth Eames suggested a date in the 14th or 15th century for tiles in the south and west with the design similar to 25.7 (Eames 1980, BMD/1844). A tile of design 25.9 pre-dated the repair of c.1500 in the south presbytery aisle at Fountains, and tiles of 25.3 and 25.6 were re-used in the smithy at Fountains, perhaps by the mid 15th century (see entry 29, Chapter 27: *Fountains Abbey*). The black letter script of design 25.10 could date either to the later 14th or 15th century.

Tile Group 26 (Fig 24.2)

This is another uncertain grouping, based largely on the designs of a few tiles from Whalley Abbey that appear to be smaller versions of the Group 25 designs found at Fountains, Meaux and Bridlington.

Site: Whalley Abbey.

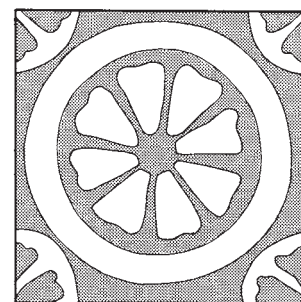
Sample and condition: Only one tile and one fragment were fully recorded (designs 26.1 and 26.2), One other tile and five fragments were partly recorded (most of these being on the cellarium wall and inaccessible for



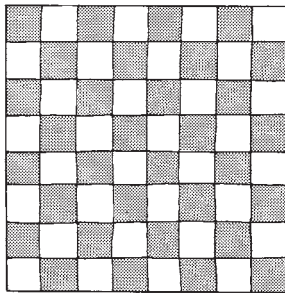
26.1



26.2



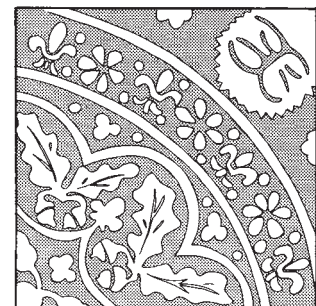
26.2



26.3



26.4



26.5

Fig 24.2: Group 26 design drawings. The accuracy of the antiquarian drawing of 26.2 is supported by the small extant fragment, also drawn. Design 26.3 is represented by an extant fragment but this was unavailable for recording. Scale 1:3

safety reasons, see entry 92, Chapter 27, *Whalley Abbey*). Two examples were worn. Tiles of designs 26.4 and 26.5 were not extant.

Shape, size: Square, 103–104mm across and 27–29mm deep.

Designs: 26.1–26.5 (Fig 24.2).

Decoration: Stamped and slip decorated, less than 0.5mm deep. Over slip, the glaze fires yellow; over body fabric, the glaze is brown, reddish brown or olive.

Design stamps: –

Nail holes: None.

Firing: Partly reduced.

Fabric: Laminated, medium sand, 1% voids, 2% pebbles, no other inclusions.

Treatment of tile sides: Slightly bevelled.

Treatment of bases: Sandy without keys.

Quality: Faults included spotted or streaked slip/glaze and a cracked fabric.

Discussion

Group 26 tiles were considerably smaller than their counterparts in Group 25 (although the stamp of design 26.1 was slightly larger than the quarries) but there were the following parallels in their designs:

Group 26 designs	Group 25 designs
26.1	25.20
26.2	25.12
26.3	25.1
26.5	25.7

It was not possible to compare the design stamps directly. However, the difference in size of the quarries at the two sites suggests that the same stamp would not have been used. Design 26.3 occurs in several tile groups, recorded in an antiquarian drawing of Decorated Mosaic designs (Chapter 14) and in another antiquarian drawing of tiles of unknown type at Holm Cultram (Chapter 17). However, what could be seen of the Whalley example suggested it could belong to Group 26.

The inclusion of designs 26.4 and 26.5 in this group is particularly tenuous. There were no extant examples of these types and G.K. Beulah's drawings of them were unscaled. Design 26.5 was more similar to the version of this design found on sites in the south-west midlands than design 25.7 (the Group 25 version).

Dating

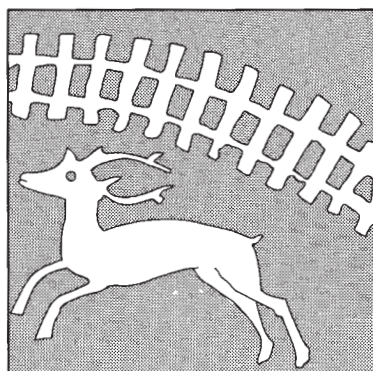
All the tiles from Whalley were thought likely to date from the later 14th century onwards (see entry 92, Chapter 27).

Concordance

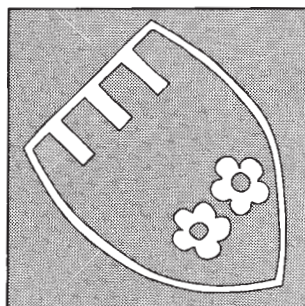
Beulah 1935, nos 12, 13, 14, 15, 17; British Museum, BMD/2356 (but the tile of this design, BMC/1636, is unprovenanced).

Tile Group 27 (Fig 24.3)

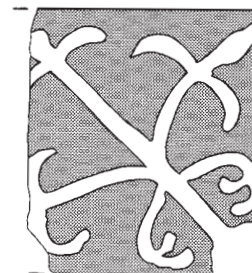
Three designs (27.1–27.3) were recorded by George Rowe from All Saints' Church, North Street, York (Rowe 1881, 11, nos 40, 81, 175/BL52, 94, 190: ref. 18, p.368). The tiles are not extant and nothing further is known about them. Design 27.1 is similar to the deer park designs of the Transpennine Group (designs 23.3 and 23.5), perhaps indicating a later 15th century date.



27.1



27.2



27.3

Fig 24.3: Group 27 design drawings. Scale 1:3

Tile Group 28 (Fig 24.4)

A small number of tiles of design 28.1 were found at Carlisle Cathedral and Holm Cultram Abbey. A tile of design 28.2, made using a different decorative technique, was only found at Carlisle Cathedral. However, similarities in size and the few other visible characteristics suggested that these, and some plain tiles at Holm Cultram, were all part of the same production group.

Sites, sample and condition: The ten extant examples are listed by site in Table 24.2. Four complete tiles are re-set, three others are fragments and four of the sample are worn.

Shape, size: Square, 128–137mm across, 21–25mm deep, one scored diagonally but not split.

Decoration: Line impressed or relief decorated to a depth of c.2mm (design 28.1); two-colour decoration with less than 0.5mm slip (design 28.2). Glazed yellow/olive over slip, brown/black or dark green over body fabric.

Design stamps: The stamp of design 28.1 was probably the same at both sites. It was poorly finished with what looked like chisel marks visible, especially around the rosette.

Nail holes: None.

Firing: Oxidised.

Fabric: –

Treatment of tile sides: Slightly bevelled.

Treatment of bases: Unknown (covered with mortar).

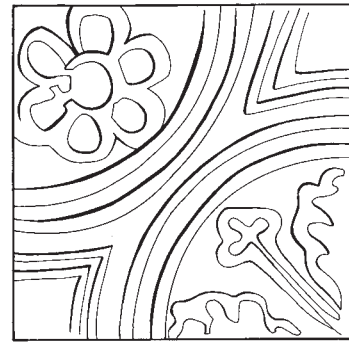
Quality: The colours of the slip decorated example (design 28.2) were poorly differentiated. One of the ‘plain’ tiles at Holm Cultram had an uneven surface but no coherent design could be identified.

Dating

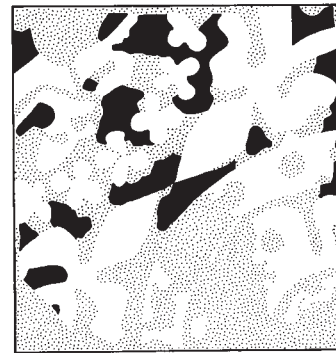
Unknown. The same mix of counter relief and two-colour decorative techniques was used by the larger workshops in the study area in the 15th century (for

Table 24.2: Sites, sample size and designs of Group 28

	<i>Carlisle Cathedral</i>	<i>Holm Cultram Abbey</i>
Design 28.1	5	2
Design 28.2	1	–
Plain	–	2



28.1



28.2

Fig 24.4: Group 28 design drawings. Scale 1:3

example the Transpennine and Huby/Percy Groups). However, in southern England a mix of decorative techniques were used within the same industry in the 14th century.

Tile Group 29 (Figs 24.5–24.6)

This group, from the south-east of the study area, was closely paralleled at sites in the north west midlands.

Sample and condition: Twenty-seven tiles are extant (Table 24.3). The examples of design 29.1 at Thornton are re-set either on site or in the site exhibition. The two tiles of design 29.2 and fragments of designs 29.3 and 29.4 are loose and fully recorded. The tile of design 29.3 from St Nicholas’ Church, Beverley, is not extant.

Table 24.3: Sites, sample size and designs of Group 29

<i>Design no.</i>	<i>Thornton Abbey</i>	<i>Beverley Minster</i>	<i>St Nicholas’, Beverley</i>
29.1	22	–	–
29.2	–	2	–
29.3	1	1	none extant
29.4	1	–	–

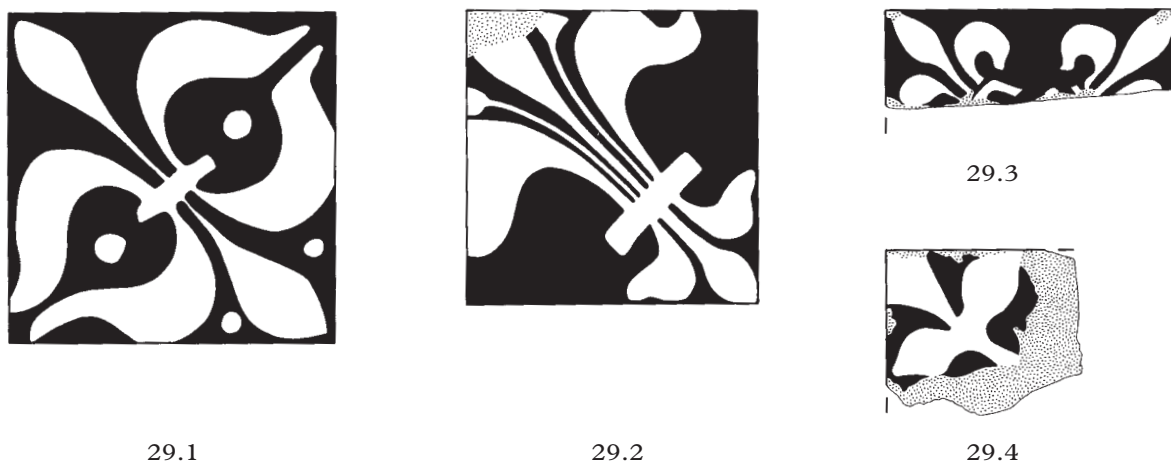


Fig 24.5: Group 29 design drawings. Scale 1:3



Fig 24.6: Thornton Abbey, tiles of Group 29 in the east claustral walk with the least worn tiles nearest the stonework. The dark colour of the glaze can obscure the design on unworn examples of some later medieval tiles

Shape, size: Most of the tiles were square, of two sizes, as shown in Table 24.4. The extant tile of design 29.3 from Thornton was rectangular, showing less than half the design, but it was not scored and split. The quarry of design 29.2 was too small for the stamp.

Decoration: Two-colour with slip to a depth of c.0.5mm. The glaze fired yellow over the slip and dark brown over the body fabric.

Design stamps: The absence of two dots in one corner of design 29.1 might suggest that the stamp was old, or that the stamp maker made a mistake. See below for comparison with sites outside the study area.

Nail holes: None.

Firing: Very highly fired.

Fabric: No information.

Treatment of tile sides: Sharp edges. Slight bevel.

Treatment of bases: Fine sand. No keys.

Quality: One example was smeared, others slightly so, but the designs were generally clear. Signs of swelling and vitrification.

Discussion

Close parallels to these tiles were found in assemblages from Hulton Abbey, Staffordshire (all designs; Wise 1985, 40–7; Craddock and Boothroyd forthcoming) and Norton Priory, Cheshire (designs 29.1, 29.3 and 29.4; Greene 1985). Direct comparison of the tiles from the Humber area with those from the north-west midlands was not possible, but comparison of the full-sized design drawings from Beverley and Hulton suggested that the same design stamps may not have been used. However, there were close similarities in the tile

Table 24.4: Dimensions of Group 29 tiles

Design no.	Upper surface dimensions (mm)	Depth (mm)
29.1	125–130	34
29.2	116	29–32
29.3	117–121	25–32
29.4	30	

dimensions (two sizes were also present at Hulton and Norton Priory), in the high firing of design 29.1 and in the stamp of design 29.2, which was too big for the quarry at both sites (Noel Boothroyd, pers. comm.).

The Hulton and Norton assemblages also included a version of the Nottingham design (Wh/80, not the same stamp). The Norton assemblage included a version of the Transpennine Group designs 23.12–23.14 (Arrangement 3), but again not made with the same stamps, and a mirror tile also of the Transpennine Group (design 23.9). These examples suggest an eclectic use and re-use of designs at this period.

Dating

Tiles of design 29.1 at Thornton are re-set in the east claustral walk (Fig 24.6). References to building work at Thornton suggest that the cloister would have been finished in the first half of the 14th century, providing a *terminus post quem* for the use of the tiles here (entry 86, Chapter 27). However, there were many alterations and rebuildings at Thornton and the tiles may not be in their original location.

At Norton Priory, about 12 tiles of similar type to those described here were found set around a grave slab in the southern half of the crossing. The tiles were not arranged according to their designs and had clearly been used to patch the floor following disturbance caused by the burial. The grave had been inserted through both the late medieval tiled floor and the earlier, worn out, mosaic floor (Greene 1985, plan 3). The main late medieval floor at Norton Priory was thought to date after 1400 (Greene 1989, 148). If the

tiles were new when set around the grave, they must date to the 15th or earlier 16th century. It is feasible, however, that they were re-used in this location and were of earlier date. An earlier date could be suggested on stylistic grounds. A date of *c.*1393 might very tentatively be suggested at Thornton Abbey, if these were the tiles referred to in a 16th-century chronicle.

Tile Group 30 (Fig 24.7)

These line impressed tiles from the Cistercian abbey of Furness, Cumbria, belong to a group of tiles identified by the Cheshire Census of Medieval Tiles from a number of sites in the north-west midlands, including Norton Priory.

Site, sample, condition: 142 tiles from Furness Abbey. All are worn and only six tiles had complete upper dimensions. Some of the better examples are among those re-set on site (see Fig 27.18 for location).

Shape, size: Squares, 115–125mm across, 18–22mm deep. Triangles were made by splitting square tiles on the diagonal.

Designs: 30.1–30.3 are shown in Figure 24.7. Design 30.4 is the companion to design 30.1, together making a running border. It is not illustrated here because it was only represented at Furness by ten fragments or worn tiles. Better, complete, examples exist outside the study area and have been drawn as part of the Cheshire Census (Ratcliffe and Noake forthcoming).

Decoration: One-colour, line impressed, stamped to a maximum depth of 2mm. All examples of designs 30.1 and its mirror were glazed dark brown and all examples of design 30.3 were slipped and glazed yellow, perhaps suggesting that colour co-varied with design. However, the tiles of design 30.2 were either slipped and glazed yellow or green, or were glazed dark brown.

Nail holes: None.

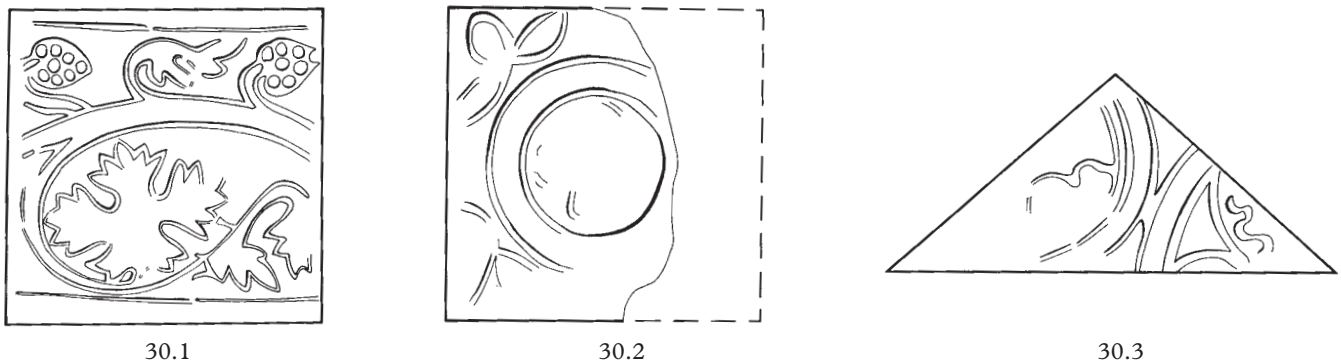


Fig 24.7: Group 30 design drawings. Scale 1:3

Firing: Most tiles were completely oxidised. Less than 10% were partly or completely reduced, giving the glaze a greenish tinge.

Fabric: Well mixed, with *c.*20% quartz of 1mm diameter or less, and no other obvious inclusions.

Treatment of tile sides: Steeply bevelled (i.e. more than 7°).

Treatment of bases: Sandy, no keys.

Quality: Generally competent although the designs were impressed too lightly on some examples, and the slip was too thin or poorly applied in others, with a smeared result.

Discussion

There were parallels to Group 30 designs at several sites in the north-west midlands, Wales and Ireland (for example Bennett 1921, plate opposite p.26, nos 25 and 26; Eames 1980, BMD/176 and BMD/270; Eames and Fanning 1988, L12; Greene 1989; Rutter 1990, 2/81; Lewis 1999, 736 and 738). A visit to Norton Priory Museum with some of the Furness material established that the tiles from the two sites were indistinguishable in manufacture. The same stamp was definitely used to make tiles of design 30.1 at the two sites. The fabric of the tiles at Furness and Norton looked similar but it was fairly nondescript, with no unusual inclusions, and petrology of some of the Norton tiles did not define the clay source closely (Greene 1989, 148). Allowance also had to be made for the effects of polyvinyl acetate, used on the Norton material in a mistaken 1970s conservation strategy. This coating changes the colour and leaves a gloss on the tile fabric. It was concluded that the Furness and Norton tiles were the products of the same workshop. At present Furness Abbey marks the northern boundary of the distribution of this production group.

The link at Norton Priory between the Group 30 tiles and a late medieval pavement, found *in situ* in the crossing and east nave in the priory church, was not entirely clear. The paving in the crossing at Norton was made up of counter relief types laid diagonally to the church in at least four bands of *c.*1.6m width, each separated by a single line of tiles laid on the same axis as the church. It is possible that the Group 30 line impressed tiles at Norton were part of the same production group as the counter relief tiles found *in situ*, but this has yet to be established. The only *in situ* example of Group 30 (of design 30.4) seems to have been found in the area where this floor had been disturbed on the south side of the crossing by the insertion of a grave. The 12 examples of two-colour tiles of Group 29 at Norton were also found here, having been used to patch the area around the grave slab (see above, Group 29). Most likely there were at least two production

groups, and probably more, represented in the late medieval floor tiles at Norton Priory. It is possible that tiles of Group 30 were part of the production group used in the main floor while tiles of Group 29 were brought in later, or re-used from elsewhere, as patching. Further work would be needed to confirm this.

There was no evidence for the layout of the tiles at Furness. It is possible that all the tiles were decorated, with no plain tiles in the group. Six of the less worn examples could be plain yellow or a mottled green but two others show very faint impressions of design 30.2. At Norton Priory, in line with the Furness assemblage, the bands of tiles in the main floor appear to have been made up of one design of a single colour and do not appear to have included plain examples (Greene 1989, 148, figs 96–7). However the layout of some similar pavements further afield was more complex. At Swords Castle, Dublin, tiles of a vine leaf scroll design were used in a dividing band, splitting up blocks of tiles that were sometimes of a single design, but sometimes laid in chequered or other arrangements (Eames and Fanning 1988, pls 8 and 10).

Dating

There was no precise indication of the date of the later floor at Norton Priory but it was thought likely to be after *c.*1400 (Greene 1989, 148). The east end of Furness Abbey was rebuilt in the late 15th century. The examples re-set in the north transept chapel were recorded as found in the chancel and north transept by antiquarians in the mid 19th century. If this reflected their medieval positions, the tiled floor could have followed 15th-century rebuilding. Rutter also listed design 30.2 as of possible 15th-century date in Chester (1990, 248). A much earlier date than this was, however, argued for tiles of similar designs in Ireland, although it is important to note that the design stamps used in Ireland were not the same as those used on the tiles from north of the Humber. At Swords Castle, Dublin, such tiles were thought to date before 1324 when the Archbishop's quarters went out of use (Fanning 1975, 205–9; Eames and Fanning 1988, 43).

Concordance

Cheshire Census 66, 67, 81 and 123 (Ratcliffe and Noake forthcoming).

Tile Group 31 (Fig 24.8)

Four Hispano-Moresque tiles of three designs, with one variation in the colour of the glaze, were found in the abbey church at Meaux and published by Cox in 1894 (designs 31.1–3). The tiles are not now extant but were described by Cox as 3" across (*c.*78mm) and were made so that a narrow pinkish outline of body clay separated the differently glazed areas. The colours



31.1



31.1



31.2



31.3

Fig 24.8: Group 31 tiles from Meaux Abbey church. Cox 1894. Scale c.1:1

included ochre, green, black, light and dark blue, and white. The green 'frame' to all the designs suggested that they were part of the same set.

Comparative material

There are direct parallels to designs 31.1 and 31.3 among the collection of Arista tiles from Toledo in the Victoria and Albert Museum (Ray 2000, nos 751 and 846). These small square tiles were traditionally used with larger examples to cover either floors or walls. Spanish tiles imported to England in the 16th century are known from a number of sites, several of them religious houses, mainly in the south and south-west (Williams 1995). The examples from Meaux Abbey

are the only finds from the north-east and the general lack of Spanish pottery imports to Hull and other nearby ports suggests that these tiles were a relatively rare occurrence this far north (Hurst 1995). Their discovery in the church at Meaux might indicate use with a burial or shrine.

Dating

The examples of design 31.1 in the Victoria and Albert Museum were thought to date 1500–1525, but a date of c.1550 was suggested for those of design 31.3. The finds from Meaux might favour a date before the Dissolution of 1538/9 for both designs, although continued use of the church for burials after this date is possible.

25 Small undated assemblages and unallocated tiles

There were some small undated assemblages as well as individual tiles that could not be allocated to a tile group. The latter have been designated 'Unallocated' and are referred to as such in Chapter 27.

Tile Group 32 (Fig 25.1)

Shap Abbey

Sample and condition: About 50 tiles and fragments.

Shape, size: c.220mm square by 55mm deep. Some scored diagonally but not split into triangles.

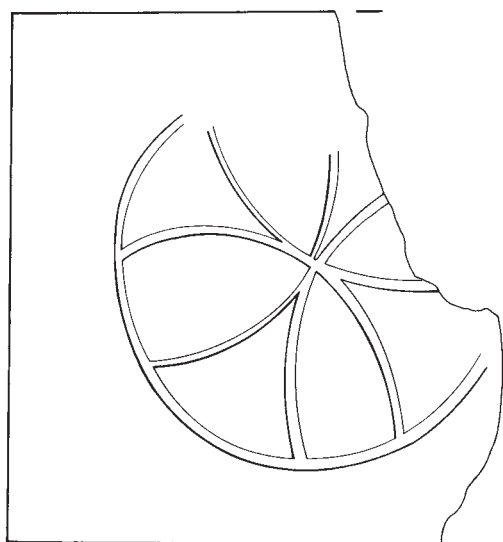
Designs: 32.1–32.4 and plain.

Decoration: Crudely incised by hand and with a compass or similar (the use of a compass was clearly demonstrated by the worn sides to the hole in the centre circle of design 33.4). The incised lines were c.2–3mm wide and 1–2mm deep (the lines that were scored for splitting, noted above, were much sharper and deeper). The thin slip and glaze applied over the incised lines fired yellow, brown or olive.

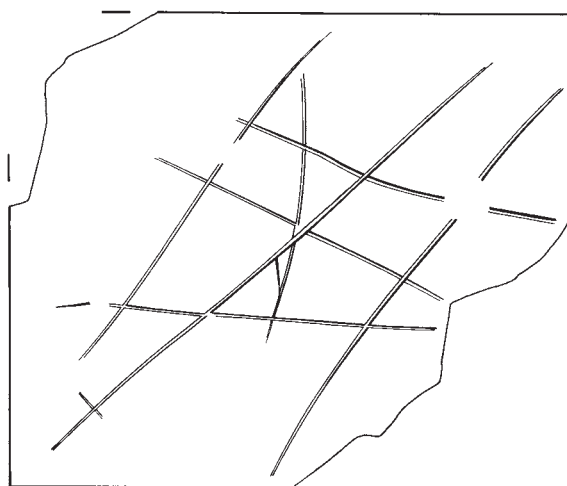
Nail holes: None.

Firing: Oxidised.

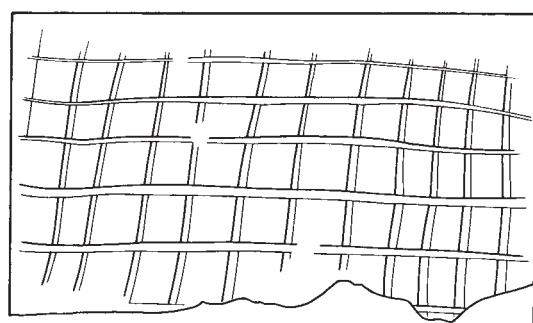
Fabric: Coarse and poorly prepared, with pebbles up to 40mm in diameter. 20% white inclusions of c.5mm diameter.



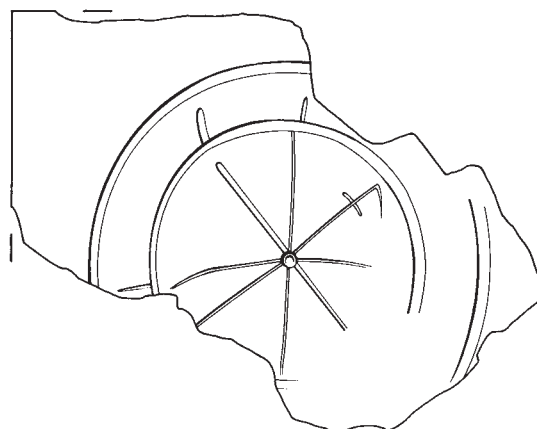
32.1



32.2



32.3



32.4

Fig 25.1: Group 32 design drawings. Scale 1:3

Treatment of tile sides: Slight bevel.

Treatment of bases: Very uneven, no sand, no keys. Some glaze.

Quality: Roughly made and decorated. The upper surfaces were uneven and the glaze patchy.

The decoration was by hand and so varied slightly in every case but there were repeat examples of the designs. The design drawings were made using the most complete and regularly incised examples. Date unknown.

Tile Group 33 (Fig 25.2)

Carlisle: the Cathedral, Scotch Street and Annetwell Street

Sample and condition: Two tiles and 22 fragments, mainly worn. The Scotch Street finds were the most complete examples.

Shape, size: Square, 111–118mm. Depth, 18–24mm.

Designs: 33.1–33.8.

Decoration: Decorated by hand using a stick or similar implement to scrape circles or jab dents in the clay. The deeper holes in the centre of circles suggest that something like a compass was used. There was no sign

of slip on the tiles. The upper surfaces of all but one were worn, with glaze only remaining in the depressed areas of decoration. It is likely that the whole of the upper surface was coated with glaze when made, the hand incised decoration relying upon a counter relief effect. The glaze fired olive or brown.

Nail holes: None.

Firing: One fragment was oxidised, the rest had reduced upper surfaces, with a thin layer of dark red, oxidised clay (2–3mm) over the base and sometimes the sides (a distinctive feature).

Fabric: Laminated, quartz variable, mainly fine but with 10% 0.5–1mm. Few voids and larger inclusions.

Treatment of tile sides: Rough, much handled. Bevel varies.

Treatment of bases: Uneven, sandy with no keys.

Quality: Roughly made and decorated.

Although the decorative technique used on these tiles was similar to that on the assemblage from Shap (Group 32, see above) the differences in tile size, firing and fabric suggested that the same tiler was not involved. Fragments found in the fill of graves in the nave of the medieval cathedral suggest that the tiles had been in use at this site (see Chapter 27 for details).

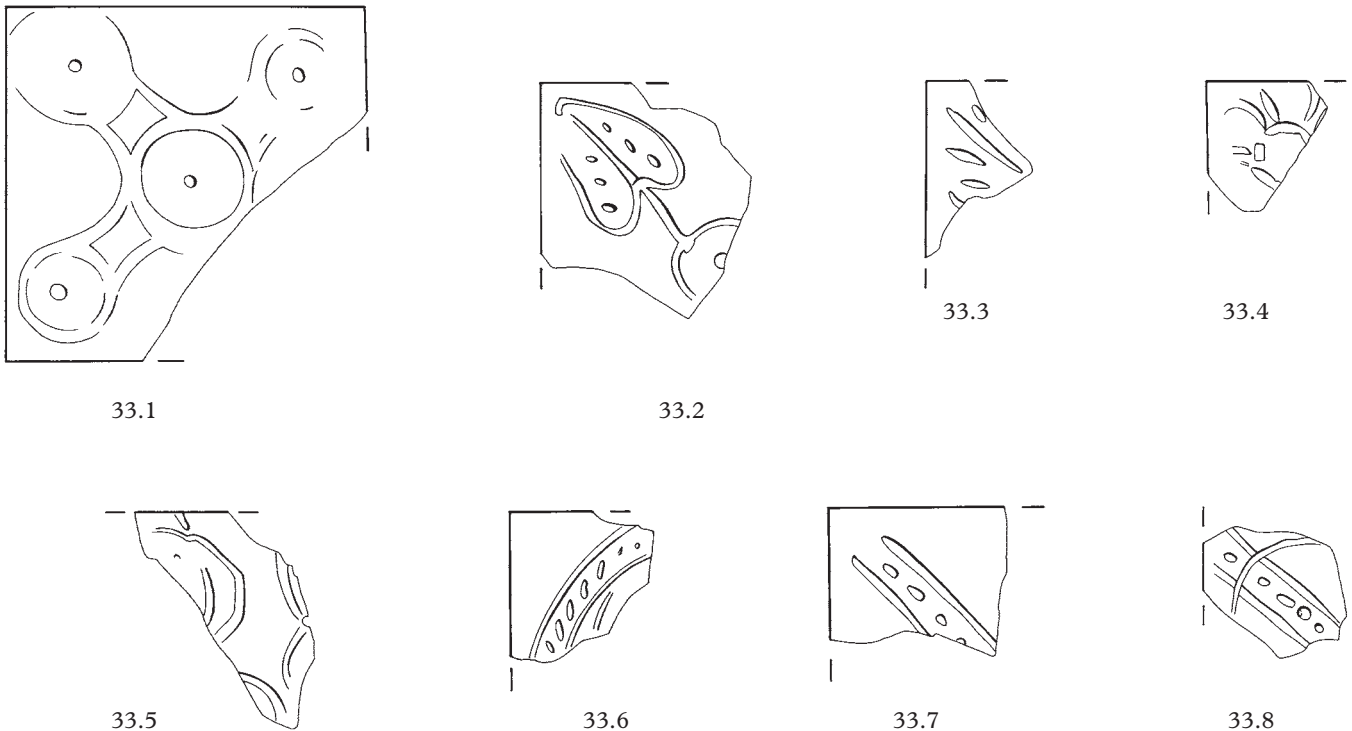


Fig 25.2: Group 33 design drawings. Scale 1:3

The more complete finds from Scotch Street could also indicate the site of a pavement. Annetwell Street is barely 200m north-west of the cathedral and debris thought to come from the cathedral has been found further north than this (M. McCarthy, pers. comm.).

Date unknown. If a date from any of the graves were forthcoming, it would provide a possible *terminus ante quem* for the use of these tiles in the cathedral.

Tile Group 34 (Fig 25.3)

Fountains Abbey

Sample and condition: About 22 examples, whole and largely unworn.

Shapes, size: Squares of c.60mm (and scored and split into two triangles) and 70mm (and scored and split into two and four triangles). Also S.16, S.164, S.175, S.381, S.453. Depth, 16–20mm.

Decoration: The tiles were undecorated but glazed either over the body fabric or over up to 1mm of white clay. They fired black, dark brown, olive and yellow.

Nail holes: None.

Firing: Oxidised surfaces, some highly fired.

Fabric: Unknown.

Treatment of tile sides: Vertical, without marks. No signs of trimming.

Treatment of bases: No sand or keys.

Quality: No damage in firing.

Comparative material: These tiles were made in a small range of shapes, several of which occur in the Plain Mosaic Group. However, the 'new' shapes (S. 453, S.381; Fig 25.3) suggest that the tiles were not made simply for repair work to the Plain Mosaic flooring at Fountains. Differences between the Plain Mosaic Group and tiles of Group 34 are easily recognised, particularly on unworn examples. Unlike the

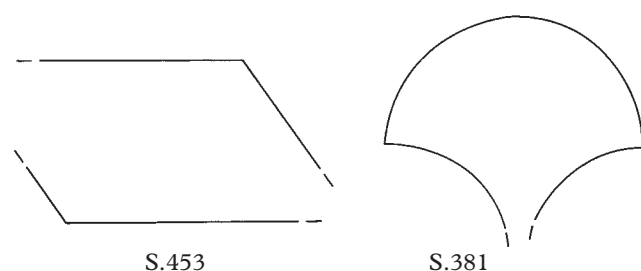


Fig 25.3: Group 34 shape drawings. Scale 1:3

Plain Mosaic tiles at Fountains, the examples of Group 34 tiles were thin, with oxidised surfaces and no sign of any treatment to their sides or bases. Their glaze was more standardised than that on Plain Mosaic tiles and had a slightly opaque finish.

Date: Unknown.

Unallocated tiles

Design Un/1 (Fig 25.4)

Sites: Fountains Abbey, Newminster Abbey.

Sample: No extant examples, information from antiquarian drawings (Walbran 1851, plate; Honeyman *et al.* 1929, 99, pl XXVII; see site entries in Chapter 27).

Dimensions: At Newminster, c.87.5mm across and 16mm deep. Walbran's drawing was unscaled but, in comparison with other drawings in the same plate, it suggests a smaller than average square tile.

Decoration: Two-colour.

Comparative material: The only tile group represented at both Fountains and Newminster was Plain Mosaic. Plain Mosaic tiles were occasionally decorated and it is possible that Un/1 was of the Plain Mosaic Group. Although 16mm would generally be considered too shallow for a Plain Mosaic tile, the examples from Newminster were shallower than elsewhere (recorded as between 13mm and 25mm).

Date: Honeyman *et al.* suggested that the design was of the mid 13th century (1929, 99).

Design Un/2 (Fig 25.4)

Site: Fountains Abbey.

Sample: No extant examples, information from antiquarian drawing (Walbran 1851, plate; see entry 29, Chapter 27).

Decoration: Two-colour, dark on light.

Design Un/3 (Fig 25.4)

Site: Fountains Abbey.

Sample: No extant examples, information from Honeyman *et al.* 1929, 99, pl XXVII.

Shape: Square, c.75mm across.

Comparative material: Tiles of this size are known in the Plain Mosaic and Decorated Mosaic Groups. The design was recorded as dark on light. A similar design in reverse inlay (giving a dark on light effect) from Rievaulx is part of the Plain Mosaic Group (design 1.4).

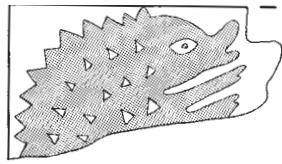
Design Un/4 (Figs 27.4, 27.7)

Sites: Beverley Minster, Ellerton Priory.

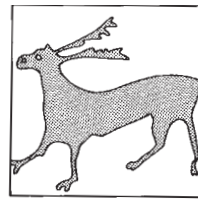
Sample, condition: Two extant tiles from Beverley; antiquarian drawing of tiles from Ellerton (Fig 27.7; Fowler c.1800–1821, see ref. 4, p.368).



Un/1



Un/2



Un/3



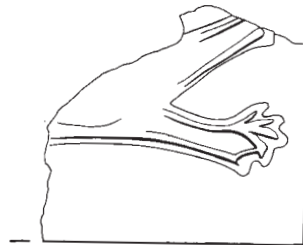
Un/4



Un/5



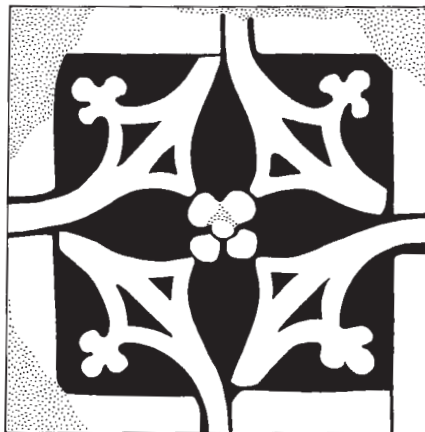
Un/6



Un/7



Un/8



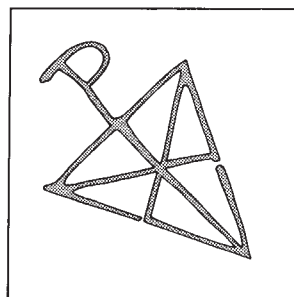
Un/9



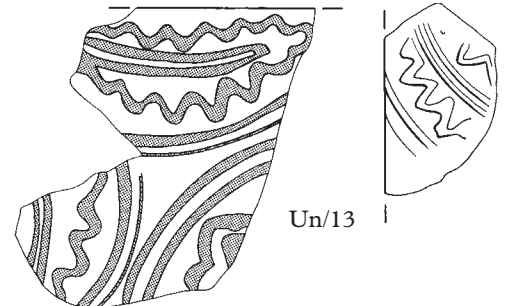
Un/10



Un/11

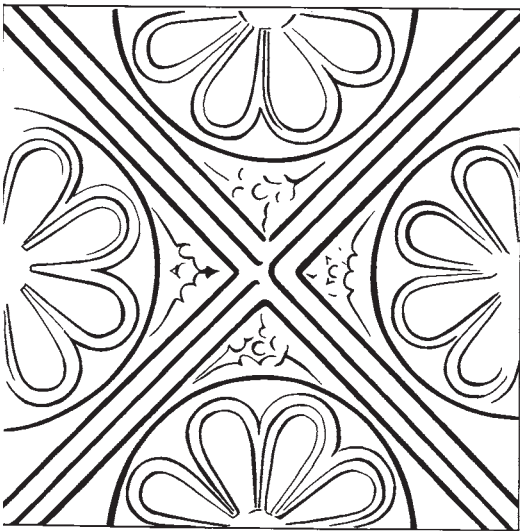


Un/12

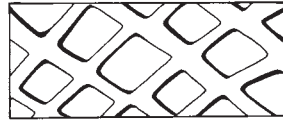


Un/13

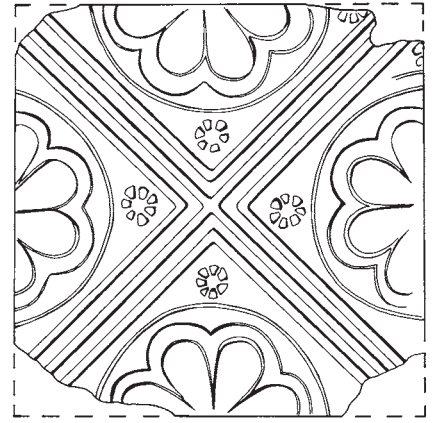
Fig 25.4 (above and facing): Design drawings of individual tiles that have not been allocated to a tile group. Un/28 and Un/29 were not drawn but are illustrated in Figs 16.1 and 26.2 respectively. Scale 1:3



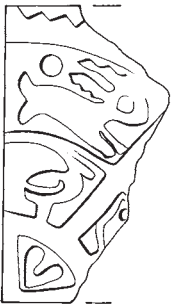
Un/14



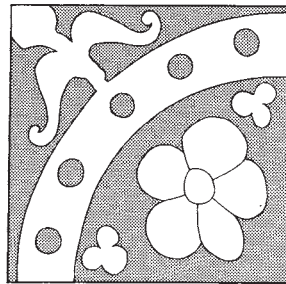
Un/15



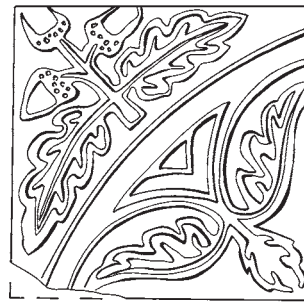
Un/16



Un/17



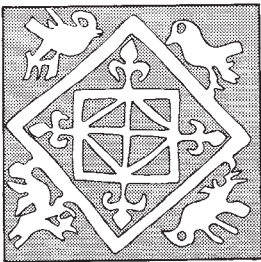
Un/18



Un/19



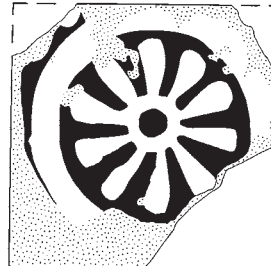
Un/20



Un/21



Un/22



Un/23



Un/24



Un/25



Un/26



Un/27

Shape, size: Square, 117–116mm, 31–30mm deep.
Decoration: Shallow counter relief (1mm), one tile yellow, one dark brown.
Stamp: Stamp impression slight or non-existent in places.
Nail holes: None.
Firing: Reduced core.
Fabric: –
Treatment of tile sides: Slight bevel.
Treatment of base: Fine sand. No keys.
Quality: Decoration unclear.
Comparative material: None. The tiles from Beverley support the idea that Fowler's drawing of the Ellerton examples were from the site near Selby, rather than that near Richmond (see entry 27, Chapter 27: *Ellerton*).

Design Un/5 (Fig 25.4)

Site: Hull.
Sample, condition: One unworn fragment.
Decoration: Two-colour, red-brown and yellow, with less than 0.5mm of slip under the yellow glaze.
Stamp: Clear outline.
Nail holes: –
Firing: Oxidised.
Fabric: Dark red, slightly laminated with little quartz and few other inclusions.
Treatment of tile sides: Slight bevel.
Treatment of base: Sandy.
Quality: No damage.
Comparative material: The dark fabric and red-brown of the upper surface were reminiscent of tiles of the Nottinghamshire Group.

Design Un/6 (Fig 25.4)

Site: Grimsby.
Sample, condition: One tile.
Shape, size: Square, 133mm across and 22mm deep.
Decoration: Two-colour, glazed brown/green over the body and yellow over the slip.
Nail holes: None.
Firing: Partly reduced.
Fabric: –
Treatment of tile sides: Slightly bevelled.
Treatment of base: Sandy, no keys.
Quality: Slightly smeared decoration.
Comparative material: This single stray find from Grimsby could be of Nottinghamshire type.
Date: On stylistic grounds the design would be placed in the 13th or 14th centuries.

Design Un/7 (Fig 25.4)

Site: Meaux Abbey.
Sample, condition: One worn fragment with mortar on sides and base.
Shape, size: Depth 27mm.

Decoration: Two-colour or counter relief (raised surface completely worn). Stamp impression up to 3mm deep. Glazed yellow or olive over slip.
Nail holes: None.
Firing: Upper surface reduced.
Fabric: –
Treatment of tile sides: Vertical.
Treatment of base: –
Quality: No damage.
Concordance: EH/88092457.

Design Un/8 (Figs 16.1, 25.4), Un/28 (not drawn)

These two designs are not thought to be of the same production group but are listed together here because nothing is known about them beyond their common occurrence at Bolton Priory.

Site: Bolton Priory.
Sample: No extant examples, photographic evidence only (Fig 16.1; Thompson 1928, pl 45; see entry 12, Chapter 27: *Bolton Priory*). The drawing of Un/8 was made from the excavation photograph but this was not possible for design Un/28.
Comparative material: No close stylistic comparisons were found. The frame of design Un/8 is known on designs from the midlands (for example Eames 1980, BMD/1385 and BMD/2547).
Date: Unknown. The designs with a stylistically similar frame in the British Museum collection were assigned to the earlier 14th century (Eames 1980).

Design Un/9 (Figs 16.1, 25.4)

Site: Bolton Priory.
Sample, condition: One extant tile, worn. Two examples recorded in an excavation photograph (Fig 16.1; Thompson 1928, pl 45).
Shape, size: 155–156mm square, 25mm deep.
Decoration: Inlaid with 1–2mm white clay. Little remains of the glaze on the extant example. It may have been fired dark brown/green on the tile body and olive-yellow over the white clay.
Stamp: –
Nail holes: None.
Firing: Oxidised sides, reduced centre.
Fabric: Voids in upper surface suggest inclusions of up to 5mm. 20% quartz up to 1mm diameter.
Treatment of tile sides: Vertical.
Treatment of base: Coarse sand, no keys.
Quality: Glaze on a depressed part of the upper surface shows that some inlay fell out before or during firing.
Concordance: V&A C237-1983.
Comparative material: There are no direct parallels to this clever design. A similar idea is found on some interlaced designs in the British Museum collection (BMD/2526, 2527, 2528, 2529).
Date: The broadly similar designs in the British Museum were dated variously to the 13th, 14th or 15th centuries.

Design Un/10 (Fig 25.4)

Site: Possibly from Durham Cathedral Priory (see entry 25, Chapter 27).

Sample, condition: One worn tile.

Shape, size: Square, 122mm × 120mm and 27mm deep.

Decoration: Slip decorated, glaze black on body, possibly yellow on white clay.

Nail holes: None.

Firing: Oxidised surfaces.

Fabric: Brown, well mixed with 15% coarse sand and a few large (5mm diameter) inclusions of hard, uneven, rusty metallic material.

Treatment of tile sides: Steeply bevelled.

Treatment of base: No keys.

Quality: No damage.

Concordance: BMC/1366, BMD/2647.

Date: Thought to date to the 14th or 15th centuries (Eames 1980).

Comparative material: This tile is the same size as and shares some other characteristics with Decorated Mosaic tiles. It could belong to that group.

Design Un/11 (Fig 25.4)

Site: Byland Abbey.

Sample, condition: One unworn tile.

Shape, size: Square, 127 × 124mm, 24mm deep.

Decoration: Counter relief, 2mm deep, glazed dark green.

Nail holes: None.

Firing: Partly reduced.

Fabric: –

Treatment of tile sides: Vertical.

Treatment of base: No sand or keys.

Quality: No damage, well made.

Comparative material: A single tile without any direct parallels within the study area apart from a slight stylistic resemblance to design 7.110 of the Decorated Mosaic Group. However, there is a closer parallel in a pavement in Lichfield Friary (Laithwaite 1937, pl XII). Here the design was on a circular tile in a line impressed mosaic pavement.

Design Un/12 (Fig 25.4)

Site: Sawley Abbey.

Sample, condition: No extant examples, re-drawn from Harland 1853.

Shape, size: Square, size unknown. Harland's illustration showed it as the same size as Transpennine Group tiles from this site.

Date: The PAX monogram of the design would be consistent, on stylistic grounds, with a 15th-century date.

Design Un/13 (Fig 25.4)

Site: Whalley Abbey.

Sample, condition: One small fragment, worn.

Shape, size: Unknown, scored and split on one side. Depth 36mm.

Decoration: Line impressed, 1–3mm deep. No slip, dark brown glaze.

Stamp: –

Nail holes: None.

Firing: Oxidised.

Fabric: Medium sand, 2% voids, 10% of up to 20mm pebbles. Fired orange.

Treatment of tile sides: –

Treatment of base: No keys.

Quality: No damage.

Concordance: Beulah 1935, no. 10. This drawing showed a large fragment (also illustrated in Fig 25.4).

Comparative material: A similar design on a tile in the British Museum (BMD/218, BMC/157) is unprovenanced. Like examples known to be from Norton Priory, Cheshire, the unprovenanced tile is c.120mm across (Greene 1985, nos 4040, 4050). However, the Norton Priory and British Museum tiles were not made with the same stamp as the Whalley piece.

Date: No information beyond the construction dates for Whalley Abbey, which imply a late 14th century or later date (see entry 92, Chapter 27).

Design Un/14 (Fig 25.4)

Site: Whalley Abbey.

Sample, condition: Six fragments, four fully recorded and two partly recorded, two unworn.

Shape, size: Shape unknown, depth 31–33mm. A square tile of this design would be c.200mm across; the drawing in Figure 25.4 is a reconstruction after Beulah 1935, no. 18).

Decoration: Counter relief/line impressed, 1–2mm deep. Four examples had no slip or glaze on the upper surface, one had dark brown glaze on one edge, one had traces of slip and yellow and black glaze on the upper surface.

Stamp: –

Nail holes: None.

Firing: Oxidised.

Fabric: Pink, slightly laminated, 20% quartz of c1mm diameter. No voids. Occasional large white inclusion (c.3–4mm diameter).

Treatment of tile sides: Vertical or slightly bevelled.

Treatment of base: Sandy, no keys.

Quality: No damage.

Concordance: EH/88092644; Beulah 1935, no. 18.

Comparative material: Design Un/14 or similar is also known from sites in the north-west midlands, at Hulton Abbey in Staffordshire and in Chester, and in north Wales (Craddock and Boothroyd 1997; Rutter 1990, 271, no. 119/188; possibly also Thompson 1976, no. 1; Lewis 1999, 752). The Hulton tiles had slip and glaze but were comparable with the Whalley examples in other respects. No comparison of the stamps was made. A typological link between designs

Un/13 and Un/14 is feasible and there are stylistic similarities between design Un/14 and design 23.36/24.33 of the Transpennine and Huby/Percy Groups and design Un/16 (see below).

Date: No information beyond the construction dates for Whalley Abbey, which imply a late 14th century or later date (see entry 92, Chapter 27). Stylistic similarity to design 23.36/24.33 of the Transpennine and Huby/Percy Groups might suggest a later 15th century date.

Design Un/15 (Fig 25.4)

Site: Whalley Abbey.

Sample, condition: Two fragments fully recorded, one tile partly recorded, all unworn.

Shape, size: Rectangular, 118mm × 45–50mm and 27–28mm deep.

Decoration: Relief, 1–2mm deep. Possibly all without slip but glazed and fired dark green, brown and olive.

Stamp: Irregularly cut, wooden.

Nail holes: None.

Firing: Reduced.

Fabric: Medium sand.

Treatment of tile sides: Slightly bevelled.

Treatment of base: Sandy without keys.

Quality: Glaze does not cover the whole upper surface. One example had spalled during firing. Fabric cracked.

Concordance: Beulah 1935, no. 19.

Comparative material: A slip-decorated version of a lattice design on narrow, border tiles is known from Hulton Abbey, Staffordshire (Noel Boothroyd, pers. comm.) but the same stamp was not used. The bands of the lattice stand proud on the Whalley tile, while the bands of the lattice are slipped on the Hulton tiles showing that they were depressed by the stamp.

Date: No information beyond the construction dates for Whalley Abbey, which imply a late 14th century or later date (see entry 92, Chapter 27: *Whalley Abbey*).

Design Un/16 (Fig 25.4)

Sites: Fountains Abbey, Brimham Hall.

Sample, condition: Fifteen fragments, twelve from Fountains, the others from her grange at Brimham, four worn.

Shape, size: 163mm square; triangles made from square tiles, scored and split on one diagonal. Depth, 28–32mm.

Decoration: Line impressed/counter relief, 1–2mm deep. Yellow or olive over slip; dark green, olive or dark brown over body.

Stamp: The stamp used to make some Fountains examples has a mistake on it and is identifiable.

Nail holes: One possible example on a corner fragment from Brimham, c.10mm from the tile edge.

Firing: Reduced or partly reduced.

Fabric: Pink and grey, laminated, 20% quartz of variable size (up to 2mm in diameter). No other inclusions.

Treatment of tile sides: Bevelled slightly or steeply.

Treatment of base: Coarse sand, no keys.

Quality: Roughly made but little damage in manufacture. The glaze has reacted on one example.

Date: The similarity to design 23.36/24.33 of the Transpennine and Huby/Percy Groups might suggest a later 15th-century date.

Design Un/17 (Fig 25.4)

Site: Possibly from St Mary's Abbey, York.

Sample, condition: Half a tile, unworn.

Shape, size: 117mm across by 27mm deep.

Decoration: Counter relief 1–2mm deep, yellow over slip.

Nail holes: None.

Firing: Oxidised.

Fabric: –

Treatment of tile sides: Slight bevel.

Treatment of base: Sandy, no keys.

Quality: Smearred.

Concordance: YM/2000.4284; SMA 55T 4XW.

Comparative material: The characteristics of this half tile fit most closely with those of the Transpennine Group, although it was without the nail holes found on some examples of that group. It is listed separately here because Transpennine Group tiles are not otherwise known at St Mary's Abbey in York, and because it alone of the northern floor tile assemblage has strong associations with tiles made in the south of England. Tiles with an apparently identical design to Un/17 are known on two-colour tiles in Surrey, Buckinghamshire and Berkshire and were made at Penn, Buckinghamshire, during the mid and late 14th century (Eames 1980, 221–6, BMD/1935, BMC/2195; Rowe 1881 BL Add 416,70, see ref. 18 on p.368; Rivers-Moore 1934, pl 2). Comparison of the Yorkshire tile with the example in the British Museum provenanced to Oatlands, Surrey, showed that the Yorkshire example had the same upper surface dimensions but was thicker (27mm as opposed to the 19mm of the Surrey tile). However, tiles thought to have been made at Penn recorded by Elizabeth Eames in the British Museum catalogue had a range of dimensions. The Surrey tile was slip-decorated with a pinkish white clay, unlike the counter relief example from the north. However, both counter relief and two-colour versions of the same design were occasionally produced at Penn (Eames 1980, 1, 44), as was the case with Transpennine Group tiles in the north. The Surrey tile was worn but was probably of better quality than the Yorkshire tile. It was uncertain whether the same stamp was used.

It can be argued that imports of Penn tiles to York were unlikely in the mid to late 14th century when decorated tiles of the Nottinghamshire Group were both available and in use at St Mary's Abbey. The absence of the 15th-century decorated tile groups from St Mary's is, also, surprising. Perhaps tiles of the Transpennine Group were in fact used there. The

provenance of the tile in question is based on its excavation mark 'SMA 55T 4XW'. It seems unlikely that it could have been marked in error but there are no records of the 1955 excavations to corroborate the find. The tendency for material in the Yorkshire Museum to be attributed to St Mary's Abbey must mean that some doubt about its provenance remains (see Chapter 26).

Design Un/18 (Figs 25.4, 27.45)

Site: York Minster.

Sample, condition: No extant examples. Recorded in an engraving by William Fowler (1801; see Fig 27.45).

Decoration: Apparently two-colour.

Comparative material: Most of the tiles recorded by Fowler from St Nicholas' chapel were of the Nottinghamshire Group and it is possible that this is another example, although the design is not listed by Whitcomb (1956) or Parker (1932).

Design Un/19 (Fig 25.4, 27.45)

Sites: York Minster; St Peter's Church, Barton; probably not at Fountains.

Sample, condition: One complete but worn tile and two fragments are extant from Barton. The design was recorded as from York Minster by William Fowler (1801; see Fig 27.45). There are several pristine examples of this design in the Yorkshire Museum, none of them provenanced.

Shape, size: Square, 125–118mm across and 25–28mm deep.

Decoration: Line impressed, 2mm deep. On the Barton tiles, a white clay had been applied in the impression but the tiles were never glazed. The unprovenanced examples in the Yorkshire Museum are one-colour, with slip over the whole surface and a yellow glaze.

Stamp: –

Nail holes: None.

Firing: Oxidised.

Fabric: Fine with red and orange layers, some dark specks, occasional large pebble.

Treatment of tile sides: Slight bevel.

Treatment of base: –

Quality: The Barton tiles were never glazed. The design was partly obscured by a pebble on the complete example. It is possible that the tiles were seconds.

Concordance: Brook/144.

Comparative material: Parallels for design Un/19 are widely known in the north-west midlands and in Ireland (Greene 1985, 4011; Renaud 1887, I, 50 and II, 221; Eames 1980, 2, BMD/222 and 223; Eames and Fanning 1988, L22; Thompson 1976, fig 43, no. 18). However, line impressed designs with some broadly similar motifs were also made in the 14th-century tile kiln at Repton in Derbyshire (Eames 1980, 1, 94). This would accord better with Fowler's record, which links this design with tiles from the

Nottinghamshire area. The Norton Priory and Irish examples of the design were not made with the same stamp as tiles recorded in the north-east.

Design Un/20 (Fig 25.4)

Site: York Minster.

Sample, condition: One small fragment.

Shape, size: 24mm deep.

Decoration: Slip decorated.

Firing: Oxidised.

Treatment of tile sides: Slightly bevelled.

Concordance: YM68 EN/124.

Design Un/21 (Fig 25.4)

Site: York, stray find.

Sample, condition: No extant examples, information from W.H. Brook (c.1921–36).

Shape, size: Square, c.100mm across and 16mm deep.

Decoration: Two-colour, dark brown and yellow.

Concordance: Brook/211; Rowe/162; Hohler/81; Cook/162.

Design Un/22 (Fig 25.4)

Site: York.

Sample, condition: One half tile in fairly good condition.

Shape, size: Probably square, 100mm across and 22mm deep.

Decoration: Slip decorated with less than 0.5mm slip, glazed brown, olive, yellow.

Nail holes: None.

Firing: Largely reduced.

Fabric: Medium sand, no other inclusions.

Treatment of tile sides: Vertical or slight bevel.

Treatment of base: Coarse sand.

Quality: Undifferentiated glaze, slightly warped.

Concordance: YAT 77.13 5114.

Comparative material: This design compares with that of Un/29 drawn by Brook (see below and Fig 26.2) but the dimensions recorded by Brook suggest that Un/29 was on a much larger tile.

Design Un/23 (Fig 25.4)

Site: York.

Sample, condition: One half tile in fairly good condition.

Shape, size: Square, 106mm across and 28mm deep.

Decoration: Slip decorated or inlaid with white clay more than 1mm deep. Glazed yellow on white clay, orange on body.

Nail holes: None.

Firing: Oxidised.

Fabric: Fired orange, rough with 20% brown and white inclusions up to 5mm (some metallic, some white clay).

Treatment of tile sides: Slightly bevelled.

Treatment of base: Sandy, no keys.

Quality: Inclusions in upper surface.

Concordance: YAT 1993.5007 6337.

Design Un/24 (Fig 25.4)

Site: York.

Sample, condition: One fragment, medium wear.

Shape, size: 33mm deep.

Decoration: Slip decorated. Stamp impression 1mm deep, slip less than 0.5mm. Glazed olive brown on body, olive yellow on white clay.

Stamp: Poorly cut.

Nail holes: None.

Firing: Largely reduced.

Fabric: Laminated, sand medium or coarse, 10% hard brown or white inclusions of 2–3mm, some metallic.

Treatment of tile sides: Steeply bevelled.

Treatment of base: No sand, one scooped key 25mm in diameter.

Quality: No damage.

Concordance: YAT 1977.7V /2445\.

Design Un/25 (Fig 25.4)

Site: York.

Sample, condition: One tile, slightly worn.

Shape, size: Square, 112–116mm across and 26mm deep.

Decoration: Slip decorated with up to 1mm coarse white clay. Glazed yellow and brown.

Stamp: Unclear.

Nail holes: None.

Firing: Partly reduced.

Fabric: Sandy with dark red grog 1–10mm in diameter. Fired pink and grey.

Treatment of tile sides: Bevelled, inclusions dragged horizontally.

Treatment of base: Sandy up to 0.5mm diameter. No key.

Quality: Medium to poor. Possibly slightly underfired with relatively poor fusion of the white clay and glaze. The white clay was too coarse and gave a blurred outline to the design. Some streaking.

Concordance: WB TR 9 1904.

Designs Un/26 and Un/27 (Fig 25.4)

Site: Holy Trinity Church, Goodramgate, York.

Sample, condition: One unworn tile and two worn fragments.

Shape, size: Square, 101–108mm across and 20–21mm deep.

Decoration: Slip decorated. Slip less than 0.5mm. Glazed dark brown on body, light brown and orange over white clay.

Stamps: –

Nail holes: None.

Firing: Partly or largely reduced.

Fabric: Mortar on broken edges so little visible. Slightly laminated, 1% voids.

Treatment of tile sides: Slight bevel.

Treatment of base: Sandy, no keys.

Quality: Slip smeared. Slightly warped body.

Concordance: YORYM 1998.3.4012.

Design Un/29 (Fig 26.2)

Site: Byland Abbey.

Sample, condition: No extant examples, information from W.H. Brook (c.1921–36).

Shape, size: Square, 450mm across and 28mm deep.

Decoration: Two-colour.

Concordance: Brook/155; 156.

Comparative material: The dimensions, and attribution to Byland, might suggest that this was a tile of the Huby/Percy Group.

26 History of collectors and collections

Early records

Following the Dissolution in 1536–40 many of the fixtures and fittings of the monasteries were sold off. Tiled floors were listed in the Dissolution audits of several sites, for example Rievaulx and Cocksand Abbeys (Coppack 1999; Farrer 1909, 1171 and 1178). It is unclear whether or not there was a ready market for second-hand floor tiles. The relatively large expanses of tiles that remain (or remained before antiquarian excavations) at sites such as Byland, Jervaulx and Rievaulx suggest that they were not in great demand. The inventory for Rievaulx noted that the west windows from the church at Rievaulx were destined for re-use in Helmsley Castle but there were no such claims for the floor tiles. It is probable that disposal was easier in towns. In Newcastle, floor tiles from the church of the Carmelite Friary were sold to the mayor in 1539 (Harbottle and Fraser 1987). The difficulty of moving heavy materials from isolated monasteries, such as Jervaulx, was emphasised in letters to Cromwell by Richard Bellasis. Members of the Bellasis family were responsible for selling off the spoils of several suppressed sites in the north-east for the Crown (*Letters and Papers Foreign and Domestic, Henry VIII, xxii.ii, 174*; see also entry 65, Chapter 27: *Newburgh Priory*). Furniture and utensils would have had more obvious value. Walbran noted the re-use of stalls and screens from Easby and Jervaulx Abbeys in the churches of Richmond, and Aysgarth in Wensleydale (Walbran 1854, 58).

In towns, the former monastic buildings were either demolished or converted for new purposes. The claustral buildings of the Blackfriars in Newcastle were divided up and used as meeting houses by nine craft companies, with their medieval tiled floors retained in use into the 18th century. At Whitby, some of the domestic quarters of the abbey were incorporated into the Cholmleys' grand new country house. Building work here, funded partly by family interests in the local alum works, was carried out over several generations with the final phase completed in about 1672. Many other monasteries were similarly re-used to build houses for the aristocracy, their servants, gentlemen farmers or industrialists, with the ruined remains forming a picturesque feature in the grounds. Some of the abandoned sites were quarried for raw materials over many years. Tiles were particularly useful in road building and repairs. Arthur Millar noted that in 1538 labourers were employed at 6d per day removing building material from Kirkstall Abbey to Leeds (1905–6, 305). In the 18th century John Tickell lamented the fact that areas of the abbey floors at Meaux were being dug up and used to repair the adjacent roads (Tickell 1796, 179).

Antiquarian activities

John Tickell's regret at the wanton destruction of medieval pavements reflected the growth in interest in antiquities of all kinds, which had taken hold during the 18th century. The earliest antiquarian discoveries in the study area were documented during this period. In 1725 Ralph Thoresby recorded the accidental discovery in 1713 of a tiled tomb in the ruins at Kirkstall Abbey. This event probably provided the inspiration for later diggings in the church at Kirkstall by Thoresby and his friends. The first record of floor tile finds at Fountains Abbey is preserved in a scathing attack on the work of William Aislabie by Gilpin in 1772, which was quoted by Walbran (1846, 5–6). Fragments of 'the old pavement' were said to have been used to make a circular pedestal on which was placed a 'mutilated heathen statue' in the central part of the abbey. Aislabie had purchased the ruined abbey and added it as a picturesque vista to the gardens of Studley Royal created by his father. At Meaux, the precise circumstance of the finds of Plain Mosaic tiles in 1760 are not known but, again, they were associated with the purchase of the site by a new and interested owner, Mr Robert Wise, who built himself a house nearby.

The problem of what to do with the tiles, and other finds, after discovery was resolved in most early cases by re-setting them in a decorative manner. The circular pedestal for the statue at Fountains is no longer extant. Later, but possibly as early as the 1780s, a rectangular tiled platform was constructed near the site of the High Altar at Fountains, made up of pieces of Plain Mosaic paving (Figs 27.8 and 27.14–27.16). Today this serves mainly as a platform for family and group photographs. At Meaux the floor tiles were displayed in Mr Wise's garden. At some point some of the tiles were re-set in the hall of the house, while others were incorporated in a monument of architectural fragments. Floor tiles dug up from the choir of Rievaulx Abbey were used in about 1819 as a decorative addition to one of the temples on the 18th-century terrace created at Duncombe Park. Floor tiles from Byland were similarly re-set in a summerhouse or gazebo at Myton Hall in 1843. At Jervaulx they were re-used in the summerhouses and the porch of the house next to the abbey ruins, built soon after the discovery of the tiles in the early 19th century and then remodelled in 1857–60.

Early records of tile finds tend to be brief notes, often written some time after the discovery was made. A second phase of antiquarian activity involved more detailed recording, often accompanied by plans and drawings. Much of this work belongs to the 19th century and was carried out by both amateur enthusiasts and professional artists, as well as surveyors and publishers. Drawings were engraved and published

either privately, by subscription or in one of the new journals. The quality of the original work varied, with the copy deteriorating in quality as the plate became worn. Early examples in the study area included John Tickell's 1796 record of the tiles from Meaux (Fig 27.2), published in a history of Hull, and a sketch of a pavement found at Louth Park, published in the *Gentleman's Magazine* (Fig 27.21; Uvedale 1801–2). Important records were made on a professional basis by William Fowler (1761–1832), an architect and antiquarian living at Winterton, a village c.3km south of the Humber in North Lincolnshire. In 1800 he published an engraving of Plain Mosaic tiles found at Fountains Abbey (Fig 27.13). This shows the various mosaic arrangements, but back to front when compared to the extant High Altar platform. It is probable that the drawing of the Fountains tiles was not reversed, as it should have been, when etched onto the plate – a mistake made by many 13th- and 14th-century craftsmen when cutting heraldry and inscriptions on design stamps. In 1801 Fowler recorded patterned tiles from the chapel of St Nicholas in York Minster, including several designs that are no longer extant (Fig 27.45). An undated work by Fowler now also forms the only record of medieval tiles at Ellerton Priory (Fig 27.7).

Together with his son, Joseph, William Fowler carried out the whole process of drawing, engraving and printing, either working to commission or selling the sheets individually or in collected editions. A large, though not comprehensive, collection of his work, which includes engravings of stained glass, brasses, ornamental stonework and other material from sites in the region, is held by the public library in Hull (see ref. 4, p.368). This includes some unpublished material. North Lincolnshire Museums Service also has a few tiles collected by the family from Thornton Abbey and the church at Winterton, and some notes about discoveries of tiles at both Winterton and Thornholme Priory (see ref. 5, p.368). Frequent visits to the abbey at Thornton are attested by graffiti at the top of the spiral staircase in the gatehouse and a drawing of the gatehouse elevation by Joseph Fowler, dated May 1824.

People like William Fowler were under no illusion about the chances of survival of the objects and buildings they recorded. In 1821, Fowler wrote in the preface to his collected works: 'This expensive, and inconceivably laborious undertaking, hath ... as his principal object ... to furnish a faithful and permanent resemblance of the highly interesting remains ... of the existence of which ... the corroding touch of time, and the barbarous depredations of ignorant curiosity, will ere the lapse of many years, leave no other trace than the dwindled memorial of historical record.'

The most crucial antiquarian record of medieval tiles in the region was that made at Jervaulx Abbey in 1807. Clearance work on the site of the abbey church uncovered the remains of a ceramic pavement. The owner of the site, the Earl of Ailesbury, employed a London surveyor to record the ruined buildings and the

floor. These drawings are now lost but were copied and reconstructed at full scale by a local rector, John Ward (see ref. 20, p.368). The reconstructions were displayed for the annual meeting of the Archaeological Institute in 1845, and lent to Henry Shaw in 1852. Between 1852 and 1858 Shaw published a series of plates, probably issued as separate sheets or sets of sheets, illustrating medieval ceramic pavements from various sites, including those from Jervaulx Abbey (Figs 14.2–14.6). The pavement at Jervaulx is now represented only by the drawings of Ward and Shaw and a few worn tiles.

Other important mid 19th century records of material now partly or wholly lost were made by the London publisher and antiquarian, John Gough Nichols, who published details of the heraldic tiles found at Rossington (1845; 1865) and William Richardson, who included tile designs from Kirkstall, Sawley and the farmhouse at Rievaulx among his drawings of architectural features from Yorkshire abbeys (published variously, but all in a collected volume of 1843). The value of records such as these cannot be overstressed. It is possible to relate a description of tiles in York Minster crypt, made by Browne in 1847, to surviving areas of completely worn tiles. This helps to link the worn tiles now in this location with a 15th-century record of the purchase of tiles for the crypt and shows the extent of wear over the last 150 years.

New journals enabled information to be circulated more quickly. Discoveries at Gisborough Priory were detailed in the *Building News* (Anon 1867), although without illustration. The arrangement of tiles re-set in the south transept chapel of Kirkstall Abbey (Fig 14.2) were engraved and printed by *The Builder* (Anon 1896), providing a record of the patterns on tiles which are now completely worn. Perhaps surprisingly, photography appears not to have been used as a method of recording. The early photographs taken by Roger Fenton, for example at Fountains and Rievaulx in 1854 (see ref. 3, p.368), seem intended to capture the beauty and atmosphere of the sites, in the manner of a painting, rather than to record architectural detail.

Another feature of 19th-century antiquarian activity was the publication of many original documentary sources, including some that detailed monastic building programmes. William Dugdale's *Monasticon Anglicanum* was published in 1846. The fabric rolls of York Minster were edited by James Raine and published through the Surtees Society in 1859. That Society also published J.R. Walbran's work on the documents relating to Fountains Abbey in 1863 (*Memorials I*). The Meaux chronicle was published in the Rolls Series by E.A. Bond in 1866–8. These documents offer tantalising hints of the dating of the tiled pavements at several sites (see particularly the entries in Chapter 27 for *Old Byland, Fountains Abbey, Meaux Abbey, Thornton Abbey, York Minster*). However, in practice it is often difficult to be certain that the records do refer to floor tiles, rather than roof tiles, bricks or other materials, and it is only rarely possible to relate the references to particular types of tiles.

In 1846, John Richard Walbran gave a paper to the Central Committee of the Archaeological Institute setting out the case for excavations at Fountains Abbey. He raised support and finance for the project and carried out the proposed excavations. Reports on what he had found were published with plans and drawings in 1851 and 1854. The results of his excavations at Sawley Abbey were published in 1852. These reports were an innovative and far-sighted feature of Walbran's work. They included knowledgeable discussions of the floor tiles found at both sites, although there were no illustrations of the designs from Sawley (identifying the extant tiles is now problematic, see further below). Walbran's attention to detail and publication record were far ahead of their time and his work shows that he recognised the distinctions between the main types of tiles. Some aspects of his papers are confusing, however, particularly since at Fountains he mistook the infirmary for part of the abbot's lodging. His reports were variously reprinted and eventually published in a collected volume (*Memorials II*) by the Surtees Society. *Memorials II* includes Walbran's papers on Byland, Kirkham and Sawley, his article of 1846 proposing excavation in the church at Fountains, and the two subsequent excavation reports first published in 1851 and 1854. It does not, however, include the illustrations of the tile designs printed with the 1851 report. For this reason the references used here are to the earlier editions.

The excavations carried out between 1890 and 1911 by William St John Hope on many of the monastic sites in the study area (at Kirkstall, Rievaulx, Byland, Fountains, Furness, Watton, Mount Grace, and finally with Brakspear at Jervaulx) were more comprehensive from an architectural viewpoint. However, Hope showed little interest in any of the finds and his reports contain only the briefest references to the ceramic paving he uncovered. There is no doubt that much information was lost as a result (see, for example, the entries in Chapter 27 for *Watton Priory* and *Mount Grace Priory*).

The accurate recording of medieval floor tiles received a boost in the second half of the 19th century with the production of Victorian Gothic pavements by manufacturers such as Maw & Co at Coalbrookdale, Shropshire, and Minton & Co at Stoke-on-Trent. George Maw travelled to north-east England in 1863, recording pavements at Duncombe Park (*Rievaulx Terrace*), Rievaulx farmhouse and Fountains Abbey (Figs 27.14, 27.33, 27.36). Maw's collection of drawings and tracings is held by the Ironbridge Gorge Museum Trust's Library and Archive at Coalbrookdale (see ref. 11, p.368). Tiles made by Maw and Minton were used in 19th-century restorations of several northern churches and in some cases were specially made to represent the medieval examples found at those sites (see Fig 27.1 and entries in Chapter 27 for *Bolton Priory*, *Brinkburn Priory*, *Great Mitton* and *Hedon*).

By the later 19th century several antiquarians were making collections of drawings of tiles rather than

collecting the objects themselves. The most important of these for the north of England were by George Rowe, whose archive of 1881 is in the British Library (see ref. 18, p.368), and Frank Renaud whose three volumes of drawings are held by the Society of Antiquaries of London (see ref. 17, p.368). Renaud's drawings of tiles from northern England were made in 1887–8. These collections are valuable as a record of material that is now not extant and also as a guide to the provenance of tiles in museum collections at that time (see entries in Chapter 27 for *Beningbrough*, *Bridlington*, *Fountains*, *Rossington*, *Sawley*, *York*).

Public ownership

From the later 19th century onwards many of the large monastic houses in the study area were taken into state care. One of the first was Kirkstall Abbey, given to Leeds City Corporation in 1888, after which it was laid out as a public park (Anon 1896, 5). Following the First World War many others were brought under the auspices of the Office of Works (later known as Ministry of Work or Works, forerunner of English Heritage). Large-scale clearance and consolidation programmes were organised in the 1920s and 30s, initially providing occupation for men returning from the War. A regimented approach is suggested by the photographs and records of the time and by the appearance and atmosphere of the sites when completed. The intention of the Office of Works was to establish the layout of the major buildings, consolidate the walls, clear the rubble and make the ground level in order that the sites could safely be opened to the public. Only very limited records were kept, usually taking the form of an annual report giving a brief summary (one or two pages) of the work carried out at the site that year. These were made up of extracts from the fortnightly reports sent by the site foreman to Charles Peers, Chief Inspector of Ancient Monuments, in London, listing what was done in terms of restoration and which areas were excavated. The reports tend to reflect the practical problems that had to be solved to repair the buildings, rather than providing insight into the history of the abbeys. In addition to these reports, lists of finds were kept (for example, see Fig 27.32). These consist of a brief description of the article; the amount of reward paid to the finder (ranging from 1d to 6d or 1s, given for coins or metal objects of obvious intrinsic value); the approximate position of the find (for example, 'Chapter House', 'Centre of choir'); the date and the destination of objects (for example, 'Museum', 'Western range', 'Sent to Mr Peers'). Relevant details of the clearance work at each site are noted in the entries in Chapter 27 (in particular, see *Byland*, *Fountains* and *Rievaulx Abbeys*). More general aspects concerning the treatment of the tiles at all sites, in particular the evidence for Office of Works policy in dealing with loose material and that found *in situ*, is discussed here.

Some published accounts of independent excavations, carried out contemporaneously with the Office of Works clearances, suggest that the records kept by the Office of Works were inadequate even by the standards of the time (see entries in Chapter 27 for *Bolton Priory* and *Newminster Abbey*). However, the Office of Works did take considerable care to preserve the large expanses of tiling and loose material uncovered during their excavations, and far more survives of the floor tile assemblage from these sites than from the independent excavations. Although there is no direct evidence to show that tiles re-set on Office of Works sites were intact pieces of flooring found in their medieval setting, there is some evidence to suggest that this was probably the case. An entry in the records for Rievaulx (Fig 27.32, no. 87) shows that there was recognition of the difference in significance between tiles found loose, even when approximately at floor level, and those that remained *in situ*. Some poor photographs taken during consolidation work at Byland show that the tiles were moved onto large boards before re-setting, and this accords with the foreman's reports. Unfortunately there are no photographs of tiles actually being uncovered. However, the layout of the re-set tiles – in isolated, uneven patches around the sites – is inexplicable unless the workmen had been instructed to re-set *in situ* material as found. This view is supported by the patterns of wear on the tiles in the church at Byland, which are largely consistent with what might be expected from daily ecclesiastical use. The tiles next to the north wall in the east end of the church are, for example, unworn with wear increasing further into the chancel aisle (Fig 2.2). The wear in the doorway from the choir to the north aisle is also realistic (Fig 26.1). Similarly, in the south transept chapels at Byland the peripheral areas are less worn while the areas used in the course of monastic devotions are more worn, for example before the altars (Fig 2.1). The impression of contemporaries was that the tiles re-set on site were in their original positions. Commenting on the conservation work at Rievaulx immediately after clearance of the church, the Office of Works architect, Frank Baines, noted that the floor of the nave was covered with turf except for certain small patches of the original tiles 'which were found in position' (1924, 167). It is likely that the material that makes up the large loose collections of tiles from these sites consists of the tiles found out of position.

The difficulties of re-setting some areas of tiling also suggest that they were disturbed as little as possible from their original locations. Those in the west end of the church at Rievaulx are plain tiles of no great decorative value. Most examples had broken into several pieces before they were uncovered during the Office of Works clearances (Fig 20.3). Each fragment was carefully re-set and, as a result, this area of paving has survived to the present day. These tiles could only have been successfully re-set if they were re-laid as found. For all the above reasons it is accepted here that the



Fig 26.1: Byland Abbey: Plain Mosaic in the doorway between the choir and the north aisle. The most worn and broken tiles are in the middle, while those around the door jambs have retained some of their white clay and glaze. Scale unit 100mm

locations of tiles re-set by the Office of Works bear some relationship to the siting of those tiles at the Dissolution of the monasteries. The re-set pavements therefore retain important information about the medieval use of the tiles. They also serve to maintain a link between the loose collections and the original locations of the tiles.

While care seems to have been taken to re-set *in situ* tiles in approximately the location they were found, evidence for stratification and any relationship between the tiled floor and the stonework of the building was lost. The floors of the churches were made level before the tiles were re-laid. At Rievaulx, the north-west crossing pier overlies a tile of the Usefleet series, as does stone-built furniture against a blocking wall in one of the chapels on the north side of the nave, and also a line of stonework (remains of benching?) against the nave wall, in the same area. In some cases the relationships between stone and tiles could be medieval, but in others it is certainly the result of modern consolidation work. It is impossible to be certain which is the case in any particular instance. Tiles are useful fillers and both roof and floor tiles are used by builders of all eras to level up courses of stone. All in all it is probable that the tiles re-set on Office of Works sites in the north, now in the guardianship of English Heritage, are in approximately the locations in which they were found, but their relationship with the stone work is not reliable.

Twentieth-century enthusiasts

The antiquarian traditions of the 19th century were continued in the study area by some talented 20th-century enthusiasts. Foremost amongst these was G.K. (Kenneth) Beulah, whose father farmed the land at Meaux Abbey. Through boyhood excavations on the site of the abbey, Ken developed a lifelong interest in medieval and later floor tiles. He was a fine draughtsman with a high level of practical expertise. His father insisted that Ken's diggings were filled in and turfed over every night since the land was good grazing. Consequently the excavations consisted of a series of small areas, following walls or searching for expected ecclesiastical features and floor tiles, which could be back-filled at the end of the day. Ken collected the best examples of the tiles he found, reburying the rest, and became extremely knowledgeable about this material. He developed a particular interest in the technology and craftsmanship of tile making and made painstaking reconstructions of the layouts of the Plain Mosaic roundels from Meaux. These were the most varied and elaborate tile arrangements produced by the Plain Mosaic workshop. These and the rest of the Meaux assemblage were published with typical modesty as an appendix to an article by Thomas Sheppard (Sheppard 1926–8; Beulah 1929). It remains the foremost record of the floor tile assemblage from Meaux Abbey. In 1932, Beulah and his friend W. Foot Walker identified the site of the tile kilns at North Grange, Meaux (subsequently re-excavated by G.K. Beulah and Elizabeth Eames in 1957–8). From 1933, aged 23, Ken developed an increasingly scholarly approach, keeping records of his excavations through notes, plans, sketches and some photographs. Information on earlier discoveries were added from memory and, in some cases, were subsequently revised as he became more sceptical about the circumstances of the finds. The plan of the church at Meaux and details of the finds published here are based entirely on these records (see entry 61, Chapter 27: *Meaux Abbey*). Considering the circumstances of the work, and the absence of an independent site datum or co-ordinates, they form a remarkably coherent account (Blenkin c.1987).

G.K. Beulah's activities were not confined to excavation. With the help and advice of Herman Ramm of the RCHME, he translated sections of the Meaux chronicle relating to the fabric of the monastery. He also made a record of the tile collection of a fellow amateur excavator, Reginald Pexton, whose father owned the site of Watton Priory, about 12km from Meaux (see entry 89, Chapter 27: *Watton Priory*). These drawings are now the only record of some of the tiles from Watton. Beulah also visited several of the future guardianship sites during the period when they were being cleared and consolidated by the Office of Works in advance of display to the public. At some of these sites, and others which were excavated privately, he noted finds of floor tiles for which no other

information survives (see entries in Chapter 27 for *Beverley, Bolton Priory, Byland and Easby Abbeys, Hull, Kirkham Priory, Thornton Abbey, Whalley Abbey, Winthorpe Hall and York*).

The first half of the 20th century saw the publication of histories of many towns or localities, led by the *Victoria County Histories*. Although these were very largely documentary histories, some contained reference to the material remains of historic sites (see, for example, the entries for *Beverley, Brinkburn Priory, Scarborough Castle*).

As the sites in the guardianship of the Office of Works were opened to the public, guides were published to help visitors understand the ruins. These usually consisted of a short documentary history, a plan of the site and some description of the architectural remains. The floor tiles at Byland received mention and were photographed but, in general, finds from the sites were not discussed. The presence of floor tiles, along with other furnishings and fixtures, was occasionally noted in the architectural histories compiled by Niklaus Pevsner between 1951 and 1974.

Professionalism and privatisation

A division of interests between archaeologists, who were concerned with excavation, and art historians, who were more interested in the collections, became increasingly apparent in the second half of the 20th century as these occupations became professions. In consequence, discoveries of floor tiles tended to be made by archaeologists, with research and cataloguing of collections carried out by art historians. Some excavations carried out in the 1950s and early 1960s were reported in unprecedented detail (see entries in Chapter 27 for *Ayton Castle, Kirkstall Abbey, Newcastle upon Tyne, Pontefract Priory*). For the first time, an important discovery, such as the Decorated Mosaic pavement in the refectory at Kirkstall Abbey, was argued on the basis of the stratigraphy to have been reset in the late medieval period (Mitchell *et al.* 1961; see also Moorhouse and Wrathmell 1987). Excavations at other sites, however, were only ever published through brief notes in journals such as the *Yorkshire Archaeological Journal* and *Medieval Archaeology* (see entries for *Brimham Hall, Durham Cathedral Priory, Rievaulx Abbey, Shap Abbey*). Important discoveries continued to be made by skilled amateurs such as John Weatherill and, more recently, Dennis Proudman (see entries for *Laskill, Old Byland, Rievaulx Terrace and Wether Cote*).

From the 1970s to the present day there has been a lengthy period of change in the organisation and funding of archaeological fieldwork and the post-excavation processing and curation of finds. The use of public money to fund excavations has largely been abandoned, with responsibility for archaeological fieldwork and post-excavation work passed to developers and the private sector. The searches carried out for this study suggest that current arrangements do not work well in

relation to the finds. Post-excavation work is not always adequately funded and the links between excavations, where finds such as floor tiles are unearthed, and museums, where they are eventually deposited, tend to be haphazard. There is a lack of overall responsibility for finds. Museums, also, have been under-resourced for a long time. Local government re-organisations over the 1980s and 1990s led to many changes in boundaries, with consequent movements of archives and assemblages. The status of some museums in the region, and their collections, remain under review. In consequence, some recently excavated material has been lost and some of the finds excavated in recent decades are unprovenanced.

A number of the archaeological units carrying out fieldwork in the region were affected by the alterations to local government areas and changed their names as a result. So, for example, the Humberside Archaeological Committee based in Hull became known first as the Humberside Archaeology Unit and, later, as the Humber Archaeology Partnership. To avoid confusion the most recent name is used throughout Chapter 27.

The collections

The main national collections with medieval floor tiles from sites in northern England are those held by English Heritage and the British Museum. There are also a few tiles in the Victoria and Albert Museum (see entries for *Bolton Priory* and *Watton Priory*). The main regional collection is in the Yorkshire Museum with important assemblages also held by Doncaster Museum, the Hull and East Riding Museum, Lancaster Museum, Leeds City Museum, Tullie House Museum, Carlisle, and the Museum of Antiquities, Newcastle upon Tyne.

British Museum

The British Museum collection of floor tiles from sites in the north of England began with a gift of tiles from Jervaulx Abbey donated by John Ward (Franks 1852; 1853) and by 1903 also included a small assemblage from Thornton Abbey and a tile from Fountains Abbey (Hobson 1903, 13–16, A79–109). A very large addition was made in 1947 with the purchase of the Rutland collection, which consisted of 9000 tiles and included substantial assemblages from some of the northern monastic sites. This collection had been built up in the early 20th century by Captain Charles Ludovic Lindsay and the Marquis of Granby, who became Duke of Rutland in 1925 (Eames 1980, I, 9–14). Much of the material came from excavations on the properties of friends and acquaintances. Lindsay died in 1924 but the collection was continued by Rutland, who acquired large samples from the sites being excavated by the Office of Works in the 1920s and 1930s (see entries for *Byland Abbey*, *Rievaulx Abbey*). Correspondence with the Office of Works

regarding his acquisitions shows the difficulty that Rutland had in accepting that the status of these sites had changed, that they were now public property and could no longer be exploited for private gain. Rutland was largely successful, however, since the material in his collection includes the least worn tiles from Byland and Rievaulx, while those that remain in the loose collections of English Heritage tend to be worn. The Duke obtained smaller numbers of tiles from sites that were being excavated privately at that time (see entries for *Bolton Priory*, *Newminster Abbey*, *Whalley Abbey*). The direct access that Rutland had to sources of floor tiles, and the care taken of the collection, has meant that the provenance of this material is generally sound. However he did also buy from dealers and other collectors, advertising for material in national newspapers, and there are few details regarding the provenance of these tiles (see entries for *Durham Cathedral Priory*, *Fountains Abbey*, *Meaux Abbey*, *Watton Priory*, *York: Archbishop's Palace*).

The task of cataloguing and studying the very substantial British Museum collection was taken on by Elizabeth Eames who succeeded in publishing a full catalogue and synthesis of the material in 1980, with drawings of all the tile designs, mosaic shapes and arrangements. The scale of the work and the overview it achieved represented a major step forward in floor tile studies. It is the main reference work for most categories of floor tiles and for most areas of the country, including the north of England. Inevitably, the types of tiles best represented in the collection received most attention and, in the case of northern England, these were the 13th-century Plain Mosaic assemblages from Byland, Rievaulx and Meaux Abbeys (Eames 1980, 72–82). The material in the Rutland collection from Meaux, purchased from G.K. Beaulah, were supplemented with further purchases in 1955 and through the excavation of the kiln site at North Grange by Elizabeth Eames and G.K. Beaulah in 1957–8. The other group of tiles from the north discussed in some detail was the Huby/Percy Group of c.1500 (Eames 1980, 269–72).

English Heritage

As has been noted, most of the loose collections held by English Heritage are from the clearance excavations carried out by the Office of Works in the 1920s and 1930s. When the fieldwork for much of this study was carried out in 1987–90 the loose collections for the majority of English Heritage sites were stored on site and, with a few exceptions, the provenance of these tiles is therefore well founded. A few tiles, numbered between one and eight and labelled BYLAND, were found at Rievaulx, possibly taken there for comparative purposes at some point in the past. Assemblages had also been moved where storage was impractical on site. Tiles from Sawley Abbey were stored at Fountains (see further below), and the assemblage from Gisborough was stored with that from Whitby (although there are

few overlaps between the types in this case). The clearance assemblages held by English Heritage were supplemented by finds from later excavations in some instances (see entries for *Fountains Abbey*, *Mount Grace Priory*, *Sawley Abbey*). With hindsight and the subsequent centralised storage of finds, it is possible that all tiles, including the Plain Mosaic and Plain-glazed material, should have been marked as part of this study but the quantities of material involved made this impractical within the scope of the project (the decorated tiles were marked).

Tiles from sites in the north of England in G.K. Beulah's collection were bought by English Heritage in 1994. Unfortunately some of the best quality tiles, along with many architectural fragments and other finds, had been lost in c.1969 when a cottage near the site of the abbey used as a store was ransacked and collapsed (this is the cottage mentioned by Midmer 1979, 216). However, the extant collection includes 38 panels of Plain Mosaic tiles from Meaux Abbey, some wasters from the kiln at North Grange and tiles which demonstrate some of the methods of manufacture used by the tilers. There are also small numbers of tiles from several other sites in the region (see entries for *Byland*, *Fountains*, *Jervaulx*, *Kirkstall*, *Rievaulx*, *Whalley* and *Sawley Abbeys*, *Kirkham* and *Watton Priors* and sites in *Hull* and *York*).

Yorkshire Museum

All the main museum collections in the region arose out of societies and institutes dedicated to the study of science, particularly geology and natural history. Societies and institutes were formed with much popular support in many northern towns in the 19th century. The Yorkshire Philosophical Society (YPS), founded in York in 1822, was typical although, unlike many of its counterparts, it had a county-wide remit from the outset. The initial aims of the YPS were to establish a reference library and museum which would further the study of the geology of Yorkshire (Pyrah 1988). The museum was intended mainly as a repository for specimens but was also to house other objects of scientific interest and antiquities. A museum and library was duly constructed on the site of the ruins of St Mary's Abbey and opened in 1830. Charles Wellbeloved, Honorary Curator for Antiquities from 1823 until his death in 1858, was prominent in the formation and display of the early archaeological collections. These were partly based on finds from the excavations carried out in advance of the museum's construction and partly on the bequests and loans made by members. Wellbeloved was responsible for producing the first handbook listing material on display in the museum and its grounds, which included several entries for floor tiles but did not include drawings (first published in 1852 and updated and reproduced in many subsequent editions). The tiles were not marked individually but listed as the contents of a particular display case. As a result some details of early



Fig 26.2: From Walter Harvey Brook's catalogue of the Yorkshire Museum collection, 1921–1936, Nos 155/156. The main drawing in the figure illustrates tiles attributed by Brook to Byland Abbey. Although there are no extant examples of this design (Un/29), the size of the tile is typical of the Huby/Percy Group. Tiles of that group are re-set in the west claustral walk at Byland (see further Chapters 23 and 25). Photograph taken by S.I. Hill, with the kind permission of the York Museums Trust (Yorkshire Museum)

acquisitions are known but it is not now possible to identify the actual tiles with certainty.

Specialist interest in the floor tile collections can next be discerned among curatorial staff of the YPS collections in the early 20th century when Walter Harvey Brook, a York architect and antiquarian, set about cataloguing the medieval material (1921–36). Brook brought a new rigour to this task. The manuscript inventory he compiled included two major innovations; each tile was both illustrated and numbered (Fig 26.2). Individual tiles were therefore retrievable. Brook realised the importance of provenance and the difficulties of assigning much of the material in the collection to specific sites with any degree of certainty. The location of the museum on the site of St Mary's Abbey meant that material in the collection had often been assumed to have come from the abbey. He was particularly critical of later editions of the museum handbook, concluding that:

‘...such laxity in giving exact, reliable information in regard to the great mass of interesting objects given into the custody of the Yorkshire Philosophical Society has led to much confusion to those who are students seeking knowledge and truth: the last Hand-book is extremely unreliable on the Medieval side’.

Table 26.1: Cook's collection and comparative material (see Fig 26.4 for nos 22–27 and Fig 26.3 for no. 58)

<i>Cook's plate</i>	<i>Cook's attribution</i>	<i>Cook's number</i>	<i>Comparative material</i>
XI	From various excavations in York 1848	22	Cf. design 7.15 (Decorated Mosaic; Chapter 14, Fig 14.1b)
	ditto	23	Design 7.151/25.1 (Decorated Mosaic; Fig 14.1i, or Group 25; Fig 24.1, or Group 26, Fig 24.2; see also Chapter 17)
	ditto	24	Cf. design Un/13 (Fig 25.4)
	ditto	25, 26, 27	Unknown
XII	From various excavations in York 1847–1853	28	Unidentifiable
	ditto	29–37	Plain Mosaic
XIII	Excavations in York 1847–1853	38–43, 45	Plain Mosaic
	ditto	44	Cf. designs 7.115 and 7.117 (Decorated Mosaic; Fig 14.1i)
XVIII	Found in Micklegate 1871	58	Possibly Wh/108 (Nottinghamshire; Fig 18.2)
	–	57	Unknown
XIX	–	59	Unknown
	Found in Micklegate 1871	60	Wh/85 (Nottinghamshire; Fig 18.2)

In some instances Brook's fanciful descriptions suggest that he could be swayed by wishful thinking. Nevertheless, his catalogue is used here as the basic guide to the provenance of tiles in the Yorkshire Museum, together with the few excavation records and the attributions in earlier editions of the YPS handbook. A further unpublished report on the museum's floor tile collection was compiled by Christopher Hohler in 1940–1. Hohler's catalogue, although extremely useful and accurate as a guide to the collection, is unreliable on provenance.

One of the early acquisitions of floor tiles by the museum was the Cook collection, given to the YPS in 1872 and recorded as on display in the 1881 edition of the museum handbook. James Cook's catalogue of his collection, 'Illustrated catalogue of antiquities found and collected in and near the City of York from AD 1844 to AD 1871' (see ref. 2, p.368), was also donated to the museum and includes six plates of drawings of tile designs. Information from Cook's catalogue, and possible parallels to the tiles in his collection, are set out in Table 26.1. His illustration of his nos 22–27 is reproduced in Figure 26.4. His drawing of no. 58 is reproduced in Figure 26.3. Cook's tiles were further identified by the star-shaped labels stuck onto them, one of which was drawn by Brook (from the back of the butterfly design Wh/85; Brook/58, Cook/60). Most examples were given a generalised provenance to the City of York rather than to any specific site (see Table 26.1).

Despite an apparent wealth of information regarding the tiles in the Cook collection, it is difficult to assess the provenance of this material. Star-shaped labels remain on a few tiles in the Yorkshire Museum collection, particularly on some Nottinghamshire examples (see entry 76, Chapter 27: *Rossington Manor*), which are not illustrated in Cook's catalogue. Some of the tiles illustrated in Cook's catalogue can still be positively identified in the extant collection but later authorities appear reluctant to accept their provenance. A drawing of a tile in the Cook collection by an antiquarian named George Rowe



Fig 26.3: Drawing by James Cook, 1844–1871, no. 58 (possibly as design Wh/108; see Fig 18.2). MS held by Yorkshire Museum. Photograph taken by S.I. Hill, with the kind permission of the York Museums Trust (Yorkshire Museum)

was not given a provenance but labelled as 'At the Museum, York. From the Cook collection' (1879; 1881, 171: see ref. 18, p.368). The only provenance of a tile in the Cook collection which was agreed by W.H. Brook was that of the tile of design Wh/85 from Micklegate (Brook/58; see entry 107 for *York: Holy Trinity Priory, Micklegate*). The Cook collection tiles which were recorded by Brook, but not provenanced by him, were those with general attributions to the City (the rectangular fish design, Cook/25, Brook/219; the wedge shaped chequered design, Cook/23, Brook/222; and part of a lion, Cook/22, possibly Brook/34). Unfortunately two of Brook's muddles relate to the Cook tiles. He attributed the tile of design Wh/85 to Holy Trinity Priory, Micklegate, rather than just Micklegate, as given by Cook. Also he seems to have attributed the chequered tile (Cook/23, Brook/222) to Fountains. A chequered design was found by Walbran at Fountains (Walbran 1851, plate) but, apart from its design, the Cook

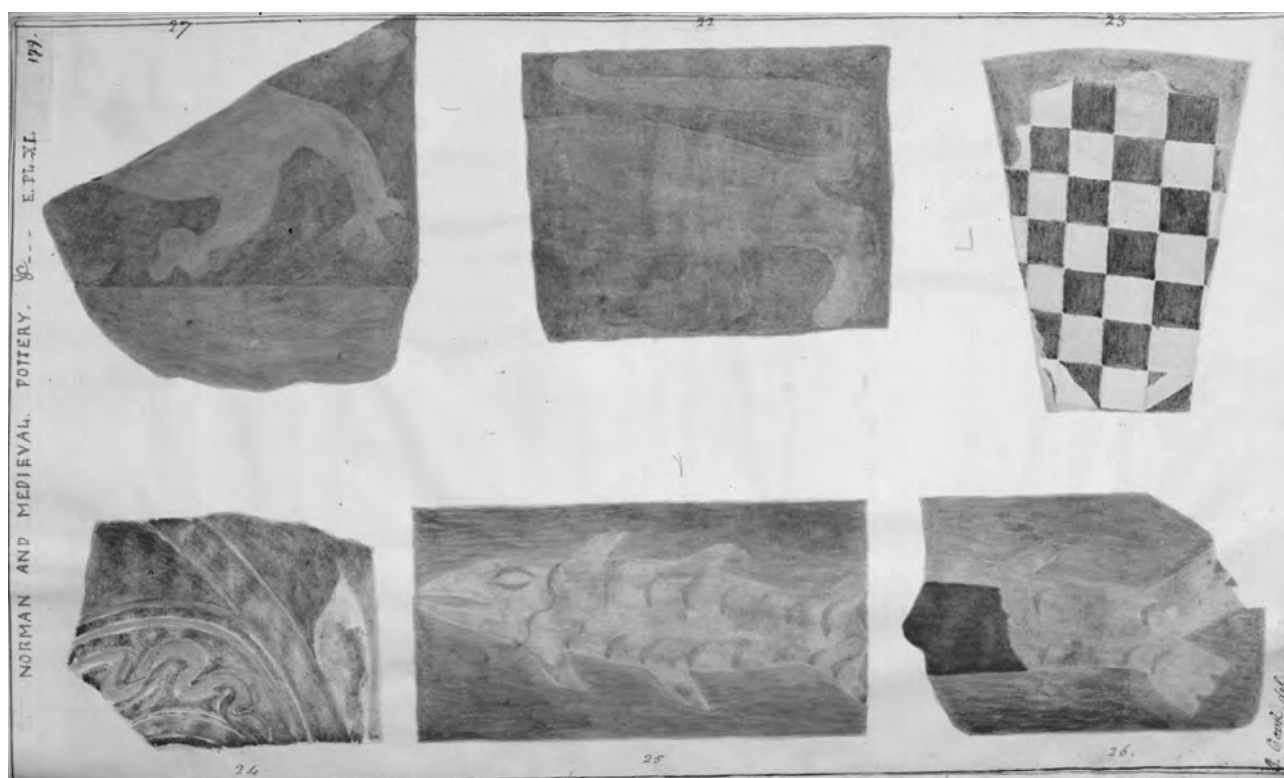


Fig 26.4: Drawings by James Cook, 1844–1871, nos 22–27 (see Table 26.1). MS held by Yorkshire Museum. Photograph taken by S.I. Hill, with the kind permission of the York Museums Trust (Yorkshire Museum)

collection tile is not like the extant example of design 25.1 from Fountains. Further complications arise, since unfortunately Brook's note could be interpreted as applying to either this or another drawing, that of the Nottinghamshire design, Wh/46 (Brook/223). However, Nottinghamshire tiles have never been found at Fountains. It is possible that, in this case, Brook went against his own stricture and provenanced the tile to Fountains simply on the basis of its design and Walbran's publication.

Part of the Cook collection seems to have been moved to Sheffield at a relatively early date. Tiles of the Cook collection, attributed to York, had been deposited with Sheffield City Museum by 1899 (Howarth 1899, 230–1, J93.753, J93.755). The extant examples at Sheffield include a number of Plain Mosaic shapes, similar to those illustrated in Cook's catalogue in York, but also a crudely shaped tile with a stamped and slipped oak tree design on it which is unlike anything else found north of the Humber and does not belong to any of the known shaped-tile series in the study area. Several of Cook's other attributions are otherwise unknown in the region. Five of the designs he illustrated as from York have not been found in the study area subsequently, and the only known occurrence of a further example, design Un/13, is from Whalley Abbey, west of the Pennines. There is also little evidence other than Cook's catalogue to suggest that tiles of the Decorated Mosaic series were used in York in the medieval period. This high number of otherwise unknown or variously attributed tiles in the Cook collection seem suspicious, although excavations

in York in recent times have also unearthed tiles of types not known elsewhere in the region. Cook's generalised attributions of most of the tiles in his collection might suggest that they were acquisitions from a dealer or third party, rather than directly from the sites themselves. Cook's attributions remain suspect.

Comparison of the various antiquarian records clarified the provenance of some other early acquisitions (see, for example, entries for *Rossington* and *Bridlington*) but in some cases the origins of the material now seem irretrievable. In particular, in the Yorkshire Museum collection, this is the case for some of the best quality extant tiles of the Transpennine Group, which could have come from either Fountains or Sawley Abbeys. Both sites were excavated by Walbran in the mid 19th century and both sites had the same tile groups. Also, according to Harland (1853, 59), many artefacts found during the 1848 clearances at Sawley, including tiles, were sent by an agent to Earl Grey at Studley Royal (i.e. Fountains). Much later, in the 1980s, Plain Mosaic tiles found scattered about the site at Sawley were also stored at Fountains for a period. There have, therefore, been a number of occasions when tiles from the two sites could have been mixed. According to the YPS handbook, eight tiles from Sawley and twenty-two from Fountains were given to the Yorkshire Museum from the Walbran collection in 1870 (Wellbeloved 1881). By 1891, the handbook attributed ten tiles to Sawley (Raine 1891). Two of the Sawley designs are identifiable from the descriptions: the extant tile of design 23.34 (Brook/165) and an example of design 23.24. However, Rowe's record of 1881

(see ref. 18, p.368) ascribes designs 23.1, 23.9, 23.14 and 23.15 to Fountains Abbey but design 23.24 to Sawley, having crossed out its earlier attribution to Fountains (BL Add 416,70, no. 61). In October 1887, Renaud recorded that tiles of design 23.24 and design 23.1 in the YPS collection were from Sawley. Brook attributed three tiles in the collection to Sawley (designs 23.9, 23.33 and 23.34; Brook/165, 167 and 168) and suggested that two further tiles (designs 23.14 and 23.32; Brook/162 and 164) might also be from that site. Examples of designs 23.24 and another of 23.32 were attributed by Brook to Fountains (Brook/159 and 170b).

Despite some problems, the relatively numerous records that refer to the early acquisitions of the YPS contrast with the dearth of information about later finds, particularly those from the first half of the 20th century. This period included excavations in St Mary's Abbey by Brook in 1912–13 and by George Wilmott after being appointed Keeper of the museum in 1950. Brook had also excavated in the choir of Holy Trinity Priory in 1899 (Stocker 1995). Apart from a few notes, little information regarding these diggings, or the tile finds, has survived (see entries for *York: St Mary's Abbey* and *York: Holy Trinity Priory, Micklegate*).

The museum continued to be run by YPS as an amateur institution until 1961 when it was handed over to the City. Since then large-scale excavations in the City, mainly carried out by York Archaeological Trust, have required a great increase in storage facilities. Assemblages are currently housed partly by the museum and partly by the Trust.

Other museum collections

The Hull Literary and Philosophical Society was founded in 1822 and a museum was opened a year later. Waning interest in the late 1890s eventually led to the collection being taken over by Hull Corporation. The appointment of Thomas Sheppard as curator in 1901 was a turning point and Sheppard's enthusiasm led to the opening of several more museums in the City over the next three decades. As editor of *Hull Museum Publications*, Sheppard ensured the publication of floor tiles held by the museum at this time. Several of these reports were reprinted in the *Transactions of the East Riding Antiquaries Society* or in *Yorkshire Notes and Queries* (Sheppard 1905–6; 1908–9; 1913; Stevenson 1907–8; Beulah 1929). These records took on added significance when the Municipal Museum with the archaeological collections was bombed in 1943, with the loss of some of the collection and the museum's Day Books (see entries for *Bolton Priory* and *Hull*). Although there is little comfort to be drawn from Sheppard's reference to Swine and Market Weighton as among sites from which objects such as 'tiles, objects of iron, etc.' had been represented in the museum collection (1907, 65), we can be forever grateful for his insistence on overspending his budget on colour plates of the Hispano-Moresque tiles, now lost, dug up at Meaux Abbey in the late 19th century (Cox 1894; see Fig

24.8). Recent reorganisation of the museum has recovered some early finds. In addition, there are several recent assemblages from excavations in Hull and its locality carried out by the Humber Archaeology Partnership.

In Carlisle, as elsewhere, an eager desire for all kinds of education and self-improvement followed the Great Exhibition of 1851 in London. An architect, C.J. Ferguson, bought Tullie House, which was a dilapidated Jacobean mansion, and money was raised by public subscription for its extension, alteration and fitting out. In 1893, having been handed over to the City, the building opened, providing not only a museum but also a free library, an art school and technical school. A small collection of floor tiles includes material from excavations in the City and from Holm Cultram Abbey.

In Newcastle, the Literary and Philosophical Society of Newcastle upon Tyne was founded in 1793 and purchased the Wycliffe Museum in 1822. The formation of two other societies (Society of Antiquaries in 1813 and Natural History in 1829), and various realignments designed to overcome problems of space and funding, resulted in complications over the ownership of the Society's collections (Philipson 1981, 317). The antiquarians eventually split off and started their own museum, leasing the Black Gate in 1883 (Jobey 1900, 205). In 1956 it was agreed that the collection should be moved to the University of Newcastle. The present museum was set up jointly by the Society and the University, opening in 1960. Although the antiquarian collections had included medieval artefacts, the modern museum's policy did not include medieval objects until this was changed in 1978. Much of the present medieval collection at Newcastle is on loan from the City, having come from excavations on City properties in recent decades, mainly carried out by Barbara Harbottle.

The provenance of tiles in these and other regional collections are discussed for each site in Chapter 27. However, difficulties in retaining the provenance of collections are a feature of most regional assemblages and should be emphasised in general here. Drawings of tile designs, made by Irene Hore in 1911 and now the property of Worcestershire Archaeological Society, on long-term loan to Worcester City Museum, serve as a reminder that much material in regional museums was effectively unprovenanced by the mid 20th century. The drawings, which are part of a much larger collection mainly from sites in the south midlands, include a few examples of material in Leeds City Museum. Tiles in the Leeds collection drawn by Hore and attributed to Fountains Abbey include one example that is otherwise unknown at that site or anywhere in the north, but is found at Glastonbury Abbey, Somerset (Y119), while another is similar to material found at sites in the midlands (Y121). These tiles, and others in the Leeds collection, have since been accepted as unprovenanced examples. Their research value is, consequently, much diminished. It is unfortunately the case that some relatively recent discoveries in the study area are already equally insecurely provenanced.

27 The Site Gazetteer

Introduction

The Gazetteer gives the basic information about the floor tile assemblages for each site. It lists, in alphabetical order, the sites in the study area where floor tiles were used or made. Where tiles are known from more than one site in the same town or village, the Gazetteer entries are arranged so that the placename is listed first, followed by each of the sites in that location. Sites outside the study area, with tiles of groups thought to have been made in the study area, are listed at the end of the Gazetteer (Dornoch Cathedral, Sutherland; Newbattle Abbey, Midlothian; Reedham Church, Norfolk; entries 116–118). The length of each entry in the Gazetteer does not reflect the importance or otherwise of the tiles from the site but rather the complexity of the history of the finds.

Each entry has a grid reference, details of any variations on the name of the site and, if applicable, the monastic order of the inhabitants. Each entry gives the tile groups, tile designs and mosaic shapes known from the site. This information is not only based on extant assemblages but also on antiquarian and other records where these are thought to be reliable. Publications or other records with primary information about the tiles are listed, with full references given in the Bibliography. For ease of reference, material that is not generally available (mainly illustrations or notes) is listed at the beginning of the bibliography and numbered. These numbers are also referred to in the text.

The Gazetteer entries go on to detail the locations of extant tiles that remain on site or are in loose collections, with accession numbers where available and cross-references to plans and figures as appropriate. There follows an assessment of evidence for provenance and, where known, details of the context of the tiles. The study was restricted to tiles with some evidence of provenance and one of the main aims of the Gazetteer is to set out that evidence. Finally, the dating evidence for the tiles is assessed for each site. The Gazetteer sets out information upon which interpretations reached in other sections of the book depend, and it can be used as a qualitative check on the security or otherwise of those interpretations.

The number series and cross-references

There are, inevitably, several different number series that need explanation. The tile groups are numbered 1–34, in chronological order as far as it is known. Several of the tile groups (particularly the larger groups) also have names, as these are more memorable than numbers. A table showing the tile group numbers,

names, sites and approximate chronology is given at the beginning of Chapter 9. A further number is allocated to each design, and is shown as a sub-set of the group numbers. Design 8 of group 1 is referred to as design 1.8. Occasionally, two design stamps of the same design were cut, one to show the design in yellow against a dark background and the other to show the design in a dark colour (usually brown or black) against a yellow background. This is a particular feature of the Decorated Mosaic Group and such designs are described as occurring in reversed colours. Not all reversed variations are given individual numbers or illustrated. They are indicated by an 'R' before the design number of the published version (see entries for *Jervaulx Abbey* and *Kirkstall Abbey*).

In two cases, numbered design sequences already existed for the tile groups. The Nottinghamshire Group was defined and published by Norma Whitcomb (1956, nos 23–147) and the Sussex/Dieppe Group was defined and published by Christopher Norton (1993a, nos 1–68). To avoid duplication, the established numbered series have been retained for these two groups, prefixed Wh/ and N/ as appropriate, with some additions in the case of the Nottinghamshire Group. The original drawings for the whole of the Nottinghamshire design series have been reproduced here at a scale of 1:3. Drawings of the Sussex/Dieppe tiles found in northern England have been reproduced from Norton 1993a.

Where several square tiles have designs that fit together to form a larger pattern, there is an arrangement number for the whole set. These numbers are mainly used to identify tile fragments which could belong to more than one design (tiles of the same set or arrangement often have the same motif in the corner, for example, and in these circumstances fragments are not always attributable to a single design but their design set is known). There are only eleven numbered arrangements (Transpennine and Huby/Percy Groups).

The tile groups identified in the north of England include ten mosaic groups (i.e. groups with shaped tiles other than the usual squares, triangles and rectangles). By far the largest of these groups is Plain Mosaic. Two numbered series were established by Elizabeth Eames (1980) for mosaic tiles in the British Museum collection and are used and continued here. One of these, prefixed with an 'S', numbers the tile shapes. The second numbers the mosaic arrangements (i.e. arrangements made by fitting together particular combinations of shapes). The Roman numerals used by Eames for mosaic arrangements have been converted to Arabic numbers here and prefixed with an 'M'.

Only mosaic arrangements with evidence of a medieval origin have been included. One group of mosaic tiles (Group 11 from Lancaster Dominican Friary) was published by Penney *et al.* in 1982. Some of these tiles are no longer extant. The tile shapes have therefore been reprinted here as published in 1982 (numbered P.1–33).

Tiles listed as ‘unallocated’ are those which have not been identified as belonging to a particular tile group. For the characteristics of each of the unallocated tiles, see pp.257–64. Designs listed under a tile group but in brackets preceded by ‘?’ are known to be from the site but are uncertainly attributed to the tile group. Uncertainly provenanced designs are listed against the tile group as ‘probably’ or ‘possibly’ from the site. Shapes preceded by a ‘?’ are uncertain identifications of broken tiles. Cross-references to extant tiles in the Yorkshire Museum that are listed in W.H. Brook’s manuscript catalogue of that collection are prefixed Brook/. Catalogue numbers for tiles in the British Museum collection published by E.S. Eames (1980) are prefixed BMC/ and the design numbers are prefixed BMD/. Accession numbers for tiles in English Heritage’s loose collection are prefixed EH/.

Excluded from this study are the Polychrome Relief tiles found in the church of All Saints’, Pavement, York, and the adjacent Coppergate excavations (Gee 1964, 176; RCHME 1981, 4, fig 13; Hall 1984, 126–7 and plate 156 facing p.113; Betts 1985, 294–314; Hall *et al.* 1988, 138–40; Keen 1993, 67–86). These tiles date from the late 10th or 11th century and are associated with assemblages from a small number of sites across the country, including Bury St Edmunds, Canterbury, Coventry, Peterborough, St Albans, Westminster and Winchester. It has also to be accepted that this survey will be incomplete in other respects, both as a result of recent new discoveries which could not be included and because some tiles or relevant information are bound to have been missed.

Plans

Entries for sites where there are re-set tiles that are thought to reflect their medieval locations are accompanied by plans. The locations of re-set tiles are shown diagrammatically on plans at 1:1000 for Byland, Fountains and Furness Abbeys, Kirkham Priory, Kirkstall, Rievaulx, Sawley and Thornton Abbeys, Tynemouth Priory, Warkworth Castle and York Minster. The smallest areas of tiling have been enlarged to ensure that they are visible. More detailed plans (1:500) of complex areas of paving at Byland, Fountains, Meaux, Rievaulx and Thornton Abbeys show the different types of tiles and, where relevant, give some information about the layout of the floors. In particular, they attempt to show the location of mosaic roundels and the way the floors were divided up into ‘lanes’ by setting lines of tiles at the opposite angle, or in a different arrangement, to the rest.

Sites

1. AYTON CASTLE, N YORKS, SE/987853

Tile groups, designs: **Plain-glazed.**

Publications: Rimington and Rutter 1967.

Extant tiles: Scarborough Museums Service: four fragments.

Assessment: The extant fragments are what remain of an assemblage excavated by Scarborough and District Archaeological Society, 1958–61. In the published report, complete tile dimensions were recorded as 225–250mm. The largest dimension of the extant fragments is 165mm. Their depth, at 29–30mm, is consistent with the report. The tiles were not *in situ* but most were located within the tower-house and thought to come from the floors of that structure.

Dating: No floor tiles were associated with the 12th- and 13th-century phases of this site. All the tiles came from the late 14th century tower-house and are, therefore, likely to date *c.*1400 or later.

2. BARTON-UPON-HUMBER, N Lincs: ST PETER’S CHURCH, TA/034220

Tile groups, designs:

Plain-glazed.

Unallocated, design Un/19 (Fig 25.4) and fragments with an unidentified design (not illustrated).

Publications: Rodwell and Rodwell 1981.

Other records: P.J. Drury 1984.

Extant tiles: Re-set on site: *c.*50 Plain-glazed tiles in the east end of the north aisle.

Loose collection: English Heritage: 2,883 tiles/fragments including four decorated tiles/fragments (EH/88098848–88100110; 88100248–88100322; 88100437; 88102545).

Assessment: The tiles were found during excavations carried out in 1978–81. The decorated tiles/fragments were unstratified but several areas of Plain-glazed tiles were either *in situ* or associated with mortar beds. Some examples in good condition were under the plinth of an oak screen which divides the nave and chancel. Others had been re-set over a grave in St Ninian’s chapel in the east end of the north aisle, the floor having subsided over the loose filling. Full analysis of the assemblage is on-going.

Dating: The late 15th-century screen and plinth must be later than the tiles between the nave and chancel. The 15th-century grave in the north aisle was later than the tiled floor which it disturbed. There were no Plain-glazed tiles from contexts dated before the 14th century.

3. BENINGBROUGH HALL, NR YORK, SE/517586

Tile groups, designs:

Nottinghamshire, Wh/80 and Wh/144 (Fig 18.2).

Publications: None.

Other records: Rowe 1881, Vol XI, nos 114 (Wh/80) and 191 (Wh/144); ref. 18, p.368.

Extant tiles: None.

Assessment: George Rowe attributed drawings of two Nottinghamshire Group designs to Beningbrough Hall. His drawing of Wh/144 is additionally labelled as from the foundations of Bouchier House. Beningbrough Hall had been built for John and Mary Bouchier by about 1716 (Taylor 1988, 127–47). In the medieval period the site had been a grange of St Leonard’s Hospital, York. Rowe’s record might suggest that Nottinghamshire tiles were found during the construction work at Beningbrough. However, the Bouchiers also built a town house in Micklegate in York (RCHME 1972, 85) and it is possible that the tiles were found here and kept at Beningbrough.

Dating: None.

4. BEVERLEY MINSTER, E YORKS, TA/035389

(secular canons)

*Tile groups, designs:***Plain-glazed.****Group 29**, design 29.2 (Fig 24.5).**Unallocated**, design Un/4 (Fig 25.4).*Publications:* Bilson 1895.*Extant tiles:* On site: a display case with two examples of design Un/4, two of design 29.2, three Plain-glazed.*Assessment:* The area of the modern vestry was excavated by John Bilson in 1891, following discovery of the steps and passage way to the undercroft of the octagonal chapter house. The mortar bed on the floor of the passage showed that this area had been paved, but only two broken pieces of decorated tile remained (type unspecified). One of the extant tiles of design Un/4 is labelled as found in the foundations of the chapter house in 1890. The tiles of design 29.2 are labelled as found near the chapter house in 1914.*Dating:* The construction date of the chapter house and connecting passage is given by Bilson as *c.*1230. All the extant tiles would be dated later than this on stylistic and typological grounds.**5. BEVERLEY, E YORKS: DOMINICAN PRIORY, TA/039394***Tile groups, designs:* **Plain-glazed.***Publications:* Armstrong and Tomlinson 1987; Youngs *et al.* 1987; Potts 1996.*Extant tiles:* Re-set on site: some brick and tile fragments in the Old Friary.

Reburied on site: tiled areas in the priory church and cloister.

Hull and East Riding Museum: 31 fragments.

Assessment: Excavations and watching briefs were carried out by the Humber Archaeology Partnership from 1960 onwards. Various areas of Plain-glazed tiling were found *in situ* but were later reburied. Remains of a tiled floor were uncovered in the priory church and two patches of tiling are shown on a plan of the west range of the great cloister (Armstrong and Tomlinson 1987, 48 and 20, fig 12). Little other information survives about these tiles or their contexts. The material now re-set in the Old Friary was found in floors thought to relate to post-medieval rebuilding of the 14th-century structure. Presumably the brick and tile had been re-used in these locations. Most of the loose collection came from demolition horizons or post-medieval contexts. Three examples from occupation contexts were found on the north side of the great cloister and near the junction of the north and west ranges of the lesser cloister. Three others were found in the area of the choir.*Dating:* None.**6. BEVERLEY, E YORKS: EASTGATE, TA/038394***Tile groups, designs:***Decorated Mosaic**, design 7.91 (Fig 14.1i).**Plain-glazed.***Publications:* Watkins 1992.*Extant tiles:* Hull and East Riding Museum: one fragment of design 7.91 and two Plain-glazed.*Assessment:* The three fragments were found in construction deposits during excavations by the Humber Archaeology Partnership in 1984. The fragment of design 7.91 is the only evidence for the use of Decorated Mosaic tiling in Beverley. On the grounds that tile rubble is unlikely to have been transported over any distance, it seems likely that these finds had been in use somewhere in the town.*Dating:* None.**7. BEVERLEY, E YORKS: FRANCISCAN FRIARY, TA/029398***Tile groups, designs:* Unknown.*Publications:* Miller *et al.* 1982.*Extant tiles:* None.*Assessment:* Pieces of tessellated pavement and other finds, exposed during drainage excavations in 1888, are thought to belong to the pre-1350 Franciscan friary site.*Dating:* None.**8. BEVERLEY, E YORKS: KNIGHTS HOSPITALLER'S PRECEPTORY, TA/039397***Tile groups, designs:* Unknown.*Publications:* Drinkall 1997, 102.*Extant tiles:* Hull and East Riding Museum: two fragments.*Assessment:* Two small abraded fragments with no remaining slip or glaze were found in medieval contexts during excavations and watching briefs 1991–1994 at this site. There is no reason to think that there was a medieval pavement here.**9. BEVERLEY, E YORKS: LURK LANE, TA/038392***Tile groups, designs:* **Plain-glazed.***Publications:* Armstrong 1991, 199.*Extant tiles:* None.*Assessment:* The site was excavated by the Humber Archaeology Partnership. Fourteen whole tiles and one fragment had been used for consolidation within the garderobe of a 16th-century residential property. The tiles may have originally been used in the floor of the substantial 15th-century building but no floor surfaces, only foundations, survived for that phase.*Dating:* pre *c.*1500.**10. BEVERLEY, E YORKS: ST MARY'S CHURCH, TA/032397***Tile groups, designs:* **Plain-glazed.***Publications:* Bilson 1920, 401 and fn 2; Raine 1859, 66 and fn; Smith 1979.*Extant tiles:* On site: a tiled floor in a room above St Michael's chapel, north side of the chancel.*Assessment:* John Bilson published details from the will of a merchant, William Melburne, who died in 1411 and left enough Flanders' tiles to pave the whole of the north aisle of the church. There are now no tiles in the north aisle of the church. The first-floor rooms with the tiled floor are known as the priest's rooms but may once have been used as a treasury. The church was substantially rebuilt following the collapse of the tower in 1520. It is possible that the floor of the priest's room was paved at this time, or during a later restoration, using tiles that had been in the north aisle of the church. However, there is no supporting evidence for this, or for the rumour that tiled paving lies under a layer of concrete and over 1m of earth in the crypt (Beulah 1929, 128).*Dating:* The priest's rooms are thought to be contemporary with the chapel beneath and to date from the second quarter of the 14th century, providing a *terminus post quem* for the use of the tiles in this location.**11. BEVERLEY, E YORKS: ST NICHOLAS' CHURCH, TA/044394***Tile groups, designs:* **Group 29**, design 29.2 (Fig 24.5).*Publications:* None.*Other records:* G.K. Beulah notes: a photocopy of a worn tile.*Extant tiles:* None.



Fig 27.1: Bolton Priory, tiling laid in the chancel of the parish church (the nave of the priory) in 1867. Several of the designs are copies of medieval tiles from this site

Assessment: In 1981 the tile was in the possession of Robert Carr, 25 Hull Road, Beverley, and was said to come from this site.

Dating: None.

12. BOLTON PRIORY, N YORKS, SE/072540

(now in the parish and township of Bolton Abbey;
Augustinian canons)

Tile groups, designs:

Group 10, designs 10.1–10.10 (Figs 16.1–16.3).

Transpennine, designs 23.4, 23.7, 23.9, 23.12, 23.13, 23.17, 23.19, 23.24, 23.28, 23.36 (Figs 22.1; 16.1).

Unallocated, designs Un/8, Un/9, Un/28 (Figs 25.4, 16.1).

Publications: Thompson 1928, 155, pl 45; Watkins 1989.

Other records: G.K. Beulah notes: a photograph of the excavated tiles stacked on the grass and against masonry and a letter from the excavator; an entry in the Hull Museum Day Book for 15 tiles found at Bolton Priory, presented by J. Roose in 1909, recorded in 1929; rubbings of three of these tiles (designs 10.3, 10.9 and 10.10). One of the other tiles was of design 23.36 (Transpennine Group).

Victorian copies: The tiled pavement now in the chancel of the parish church (the nave of the former priory) was laid in 1867 as part of restoration work by Street (Fig 27.1). The tiles are thought to have been made by Maw and Co at their Benthall Works and the archive suggests that they were intended as replicas of tiles found on the site (Peter Watkins, pers. comm.). The designs include copies of some of the unusual line impressed tiles from this site (Group 10) and of the Transpennine Group design 23.4, which is not now represented among the extant medieval tiles from the site. It is probable that examples of design 23.4 had been found by the Victorian restorers.

Extant tiles: On site: several hundred worn tiles are stored in an aisled barn near the priory on the Bolton Abbey Estate. In 1985, these tiles were sorted out and some of the better examples re-set around and under the altar in the north aisle of the present church, together with a single modern copy of design 23.36 (Transpennine Group, designs 23.12–23.13, 23.17, 23.24, 23.28, 23.36; Group 10, designs 10.4, 10.10). Further tiles, completely worn but of Transpennine Group size, are visible in the south transept/crossing of the priory church when the loose covering material gets displaced.

Loose collections: British Museum: six tiles of designs 10.1–10.3, 10.6–10.7 (BMC/600–605).

Society of Antiquaries, London: one tile of design 10.6 (467A C47).

Craven Museum, Skipton: one fragment of design 10.3, labelled as from Bolton.

Victoria and Albert Museum: one tile of design Un/9 (C237-1983).

Assessment: Excavations carried out on the site of the priory at Bolton between 1922 and 1925 by A. Hamilton Thompson were published by the Thoresby Society in 1928. A photograph and letter from the excavator to G.K. Beulah suggested that about 1500 tiles were found. A photograph published in the excavation report showed 13 tiles of various, mostly unusual, types (pl 45, reproduced on p.184 as Fig 16.1). Few of these are extant although a worn but complete example of design Un/9 attributed to Bolton was bought by the Victoria and Albert Museum from a London dealer in 1983. The excavation report noted that few tiles had any glaze or design left on them and this is supported by the condition of the tiles now in the barn. Tiles of unspecified types were found *in situ* in the south transept and the south-west corner of the cloister. The presence of tiles, possibly of the Transpennine Group, just beneath the ground surface in the south transept/crossing suggests that patches of flooring found *in situ* were re-buried. The report does not distinguish between different tile series. All those shown in the plate were said to date to the early 14th century and to have come from the south transept and the cloister. In fact several different tile groups (probably three), of various dates, are illustrated. Tiles of two of these groups, Transpennine and Group 10, are represented elsewhere among the extant assemblage but some examples, design 10.5 and the Unallocated tiles of designs Un/8 and Un/28, are now only known from this photograph.

Dating: None.

13. BRIDLINGTON PRIORY, E YORKS, TA/176680

(Augustinian canons)

Tile groups, designs:

Plain-glazed.

Group 25, design 25.10 (Fig 24.1).

Doubtful provenance: **Nottinghamshire**, Wh/129 (Fig 18.2)

Publications: Purvis 1923, appendix D, 19 and 22; Rowe 1879.

Extant tiles: Displayed in the nave of the priory church (now the parish church): one tile of design 25.10, two of Wh/129 and several Plain-glazed examples.

Sewerby Hall Museum and Art Gallery, near Bridlington: two Plain-glazed tiles, labelled Bridlington Priory cloister.

Assessment: Purvis' report on the excavations carried out in 1922–3 recorded that Plain-glazed tiles of two sizes were

found *in situ* in two areas. The larger (7" or 175mm) tiles were in the south end of the east claustral walk, and the smaller (4" or 100mm) tiles were in the south end of the west claustral walk. The tile sizes recorded by Purvis accord with the sizes of the extant examples.

There is no evidence to corroborate the provenance of the decorated tiles. The two fragments of Nottinghamshire Group design Wh/129 now on display in the church are labelled 'probably from the chapter house' but finds of decorated tiles were not mentioned in Solloway's description of 1915 or in Purvis' account of the excavations of 1922–3, which included the site of the chapter house and recorded the Plain-glazed tiles. It is possible that the tiles of Wh/129 are incorrectly provenanced. On complete examples of this design the inscription reads REDLINGTON (Ward 1892, 135; Parker 1932, 92; Whitcomb 1956, 89–90). However, the tiles displayed at Bridlington show only part of the inscription, which was interpreted by George Rowe as reading 'BRIDLINGTON' (1879, 18–26). Rowe argued that the arms on the small shield in the centre were those of Watt de Gant, the founder of Bridlington Priory. A few years later, Frank Renaud (ref. 17, p.368) suggested that the inscription read BEDLINGTON and referred to one of the liberties of the see of Durham (1887–8, vol 3, 313; Page 1888, 150). In 1891 the YPS handbook listed two pieces of tile of this design as unprovenanced, with coat of arms unknown, encircled by the word REDLINGTON (Raine 1891, 153–9 VTc). Rowe's view was revived, incorrectly, by W.H. Brook in c.1921–36 who provenanced the two fragments in the Yorkshire Museum to Bridlington (Brook/149, 150). It is possible that the 'REDLINGTON' fragments were donated to the priory on account of the mis-read inscription. The presence of the Nottinghamshire series at Bridlington is therefore doubtful.

Dating: None.

14. BRIMHAM HALL, N YORKS, SE/222630

(grange of Fountains Abbey)

Tile groups, designs: **Unallocated:** design Un/16 (Fig 25.4)

Publications: Platt and Wild 1964; Wild 1965; Wilson and Hurst 1966; Platt 1969, 192.

Extant tiles: Royal Pump Room Museum, Harrogate: two fragments (10501–2).

Assessment: The 18th-century farmhouse and farm buildings at Brimham stand on the site of a grange and hunting lodge of Fountains Abbey. Excavations here by Leeds University Archaeology Society, 1964–1966, found several foundation walls as well as part of a substantial building of good quality ashlar. The large building had walls of about 1m thick and was thought to be over 18m long. About half a dozen masons' marks were identified in the small area exposed. Two areas of tiling were found *in situ*. An area of c.0.5m² was set in sand within the building. The tiles were glazed yellow, orange, green, brown or black in no discernible arrangement. They were laid diagonally to the building. One example found face down was patterned. None of these tiles are extant and no record of the tile design survives. A photograph suggested that they measured about 135mm across. A further six abraded tiles were found set in mortar in a doorway in the south-west corner of the building. These tiles were larger (about 165mm across, measured from the photograph) and three of them were patterned, one with design Un/16 and a fragment which could be design 23.36/24.33 or design Un/16. Fragments of patterned tiles were also found scattered about the site. Two of these survive, both of design Un/16, one being part of a scored and split triangle. The use of the

building was uncertain but could have been a hall. The chapel was thought to be located further to the south.

Dating: c.1500. The hall was thought to be of 15th or early 16th century date. A jeton of 1630 was found on top of the area of smaller sized tiles in this building.

15. BRINKBURN PRIORY, NORTHUMBERLAND, NZ/116984 (Augustinian canons)

Tile groups, designs: Possibly **Plain Mosaic**.

Publications: Hodgson 1904.

Extant tiles: Re-set on site: the tiles around/under the table-altar could be medieval.

Assessment: The priory church at Brinkburn was left standing as a substantial but roofless ruin until 1858 when the owner, Cadogan Hodgson Cadogan, decided to restore it using a local architect, Thomas Austen. The south-west angle of the nave was rebuilt and a new roof and tiled floor provided. This is the floor now visible in the church and illustrated in volume seven of the History of Northumberland (Hodgson 1904, 480–1). It is made up of simple rectilinear forms, unknown in medieval paving in the region, and was not glazed. However, there are some distinctive arrangements that appear to imitate medieval Plain Mosaic tiling. Hodgson also noted that a few medieval tiles 'finished with a rough green glaze' were relaid in the floor of the restored church (Hodgson 1904, 487). Identification of any medieval examples is now difficult since the floor is badly damaged by damp, the tiles are worn and many aspects of their manufacture are hidden when set in a floor. However, the tiles around and under the table-altar could be of medieval date. The restoration at Brinkburn was considered to have been a sympathetic one and it is possible that the shaped tiles of the 19th-century floor were imitations of medieval examples found on the site.

Dating: None.

16. BURNHAM, N Lincs: ST LAWRENCE'S CHURCH, TA/057171

Tile group, designs:

Decorated Mosaic, designs 7.152, 7.162 (Fig 14.1i).

Publications: Coppack 1986a.

Extant tiles: North Lincolnshire Museums Service: five fragments.

Assessment: Tile impressions were visible in the mortar bedding of the altar platform uncovered during excavations in advance of development in 1976/7 on the site of St Lawrence's Church, but no tiles were found *in situ*. Two whole tiles and 36 fragments were scattered through the demolition deposits in the chancel and east nave. One of the complete tiles was stolen soon after it was found.

William le Gros, Count of Aumale, granted Burnham vill and St Lawrence's Church to his newly founded priory (subsequently abbey) at Thornton in 1139. Burnham was held by Thornton until the Suppression. The excavator suggested that the context for the tiled floor and other restoration work could have been its establishment as a chantry (Coppack 1986a, 39–60).

The demolition of St Lawrence's in the mid 16th century rules out the likelihood of post-Dissolution re-use of tiles at this site. However, since Decorated Mosaic was also in use at Thornton Abbey, it is possible either that the tiles at Burnham were re-used from Thornton during the medieval period or that they were supplied to both sites at the same time.

Dating: Two coins suggested a date in the early to mid 14th century for a major restoration phase, of which the tiled floor may have been a part.

17. BYLAND ABBEY, N YORKS, SE/550788

(Cistercian monks)

Tile groups, designs, shapes:

Plain Mosaic, designs 1.5, 1.7. Shapes 3–6, 8, 12, 16, 22, 24, 34, 35–38, 46, 48, 51–2, 54, 55–6, 58, 60, 72–3, 101, 103–4, 107, 110, 114, 117–19, 121, 129, 139–40, 145, 155–6, 159–60, 163–4, 166–7, 169–70, 172, 175–6, 188, 210–11, 214–16, 218–19, 237, 261, 264, 266, 268, 276, 279–81, 284, 292, 294, 295–8, 300, 302–10, 318, 324, 326–7, 329, 340, 352, 362–3, 383, 386, 420 (Figs 2.1–2.6, 10.1–10.3, 10.6, 10.14, 10.15, 10.17, 27.4–27.6).

Inlaid, designs 4.2, 4.7, 4.12 (Fig 12.2).

Usefleet, designs 6.2, 6.4, 6.10 (Fig 13.3).

Huby/Percy, designs 24.1, 24.3, 24.4, 24.9–14, 24.17–20, 24.23–26, 24.33, 24.35, 24.37–39 (Figs 23.1, 23.4).

Unallocated, designs Un/11, Un/29 (Figs 25.4, 26.2).

Doubtful provenance: **Decorated Mosaic**, design 7.121 (BMC/958)

Publications: Anon 1843; Baines 1823; Beulah 1993; Eames 1980, 1, 72–82, 214–15, 269; Eames and Beulah 1956; Gill 1852; Hope 1896; Richardson 1929; Walbran 1878, 208; Wellbeloved 1881, 130–4, IITa; Wilson 1935.

Other records: Brook c.1921–36, nos 154, 155; Harrison 1989. J.S. Richardson's original drawing (nd).

Extant tiles: On site: re-set as shown in Figs 2.1–2.6, 23.4 and 27.2–27.6. Those in the west claustral walk are of the Huby/Percy Group while the thousands of tiles in the church are Plain Mosaic. A few tiles are displayed in the site museum (EH/81005150; 81005154–5; 8100515–60; 81005165; 81005171; 81005245; 81005246).

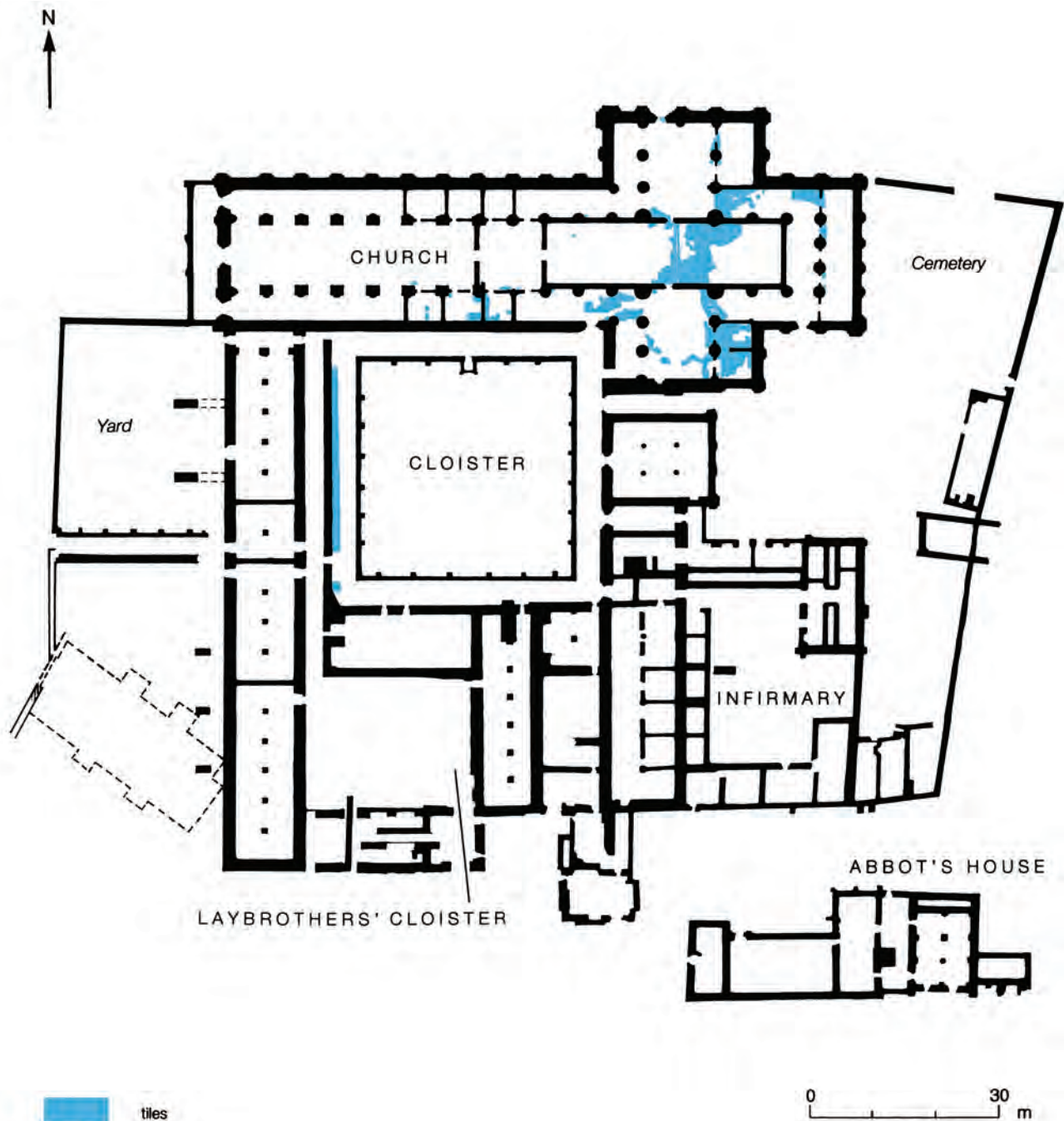


Fig 27.2: Byland Abbey showing the locations of re-set tiles

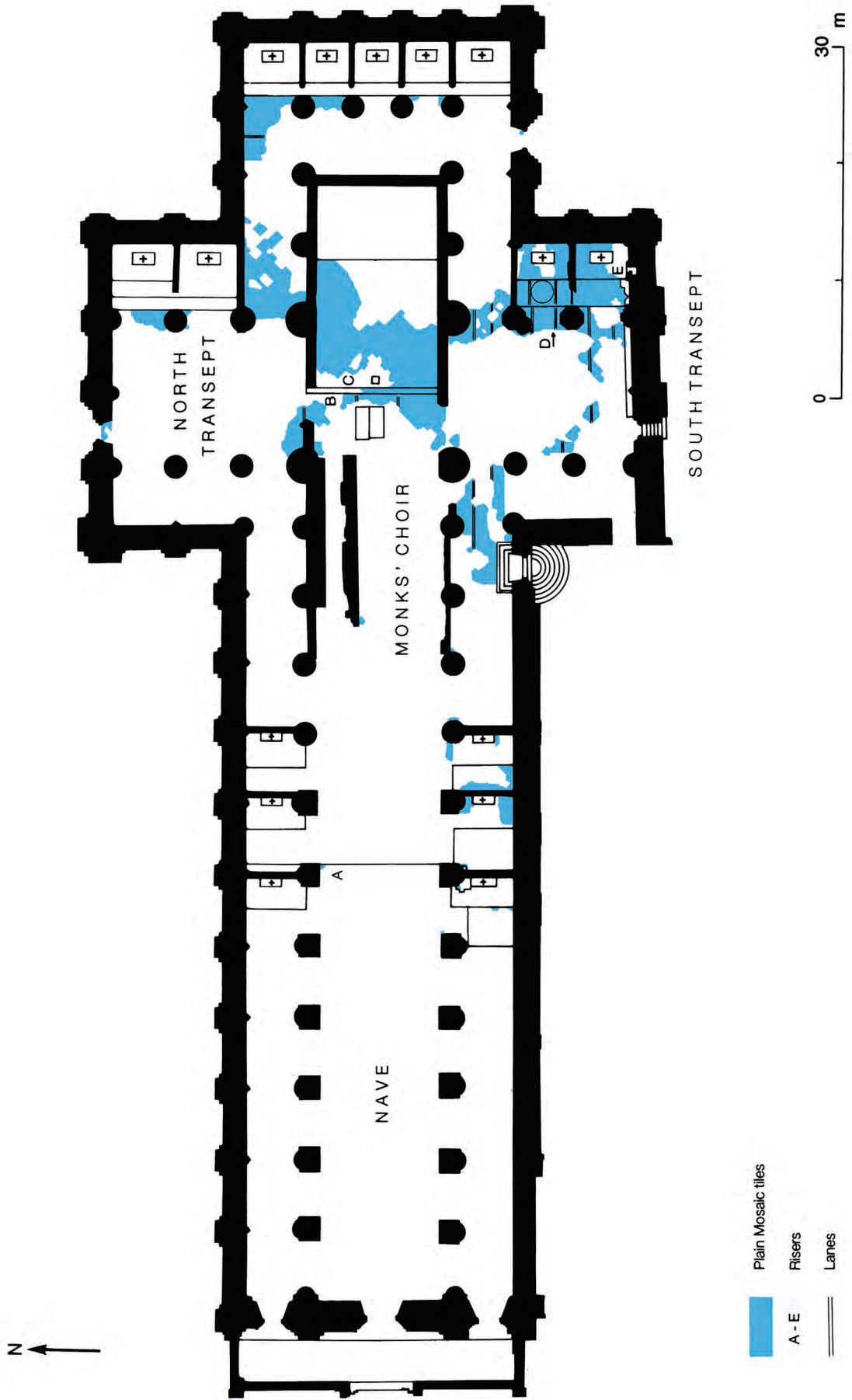


Fig 27.3: Byland Abbey showing the location of Plain Mosaic tiling re-set in the church. For the tile risers, set in the vertical face of the steps labelled B-E on the plan, see Figs 2.5-2.6, 10.17 and 27.6. For the tiling in the south transept chapels, the presbytery and in the north-east chancel, see Figs 2.1-2.4, 27.4-27.5

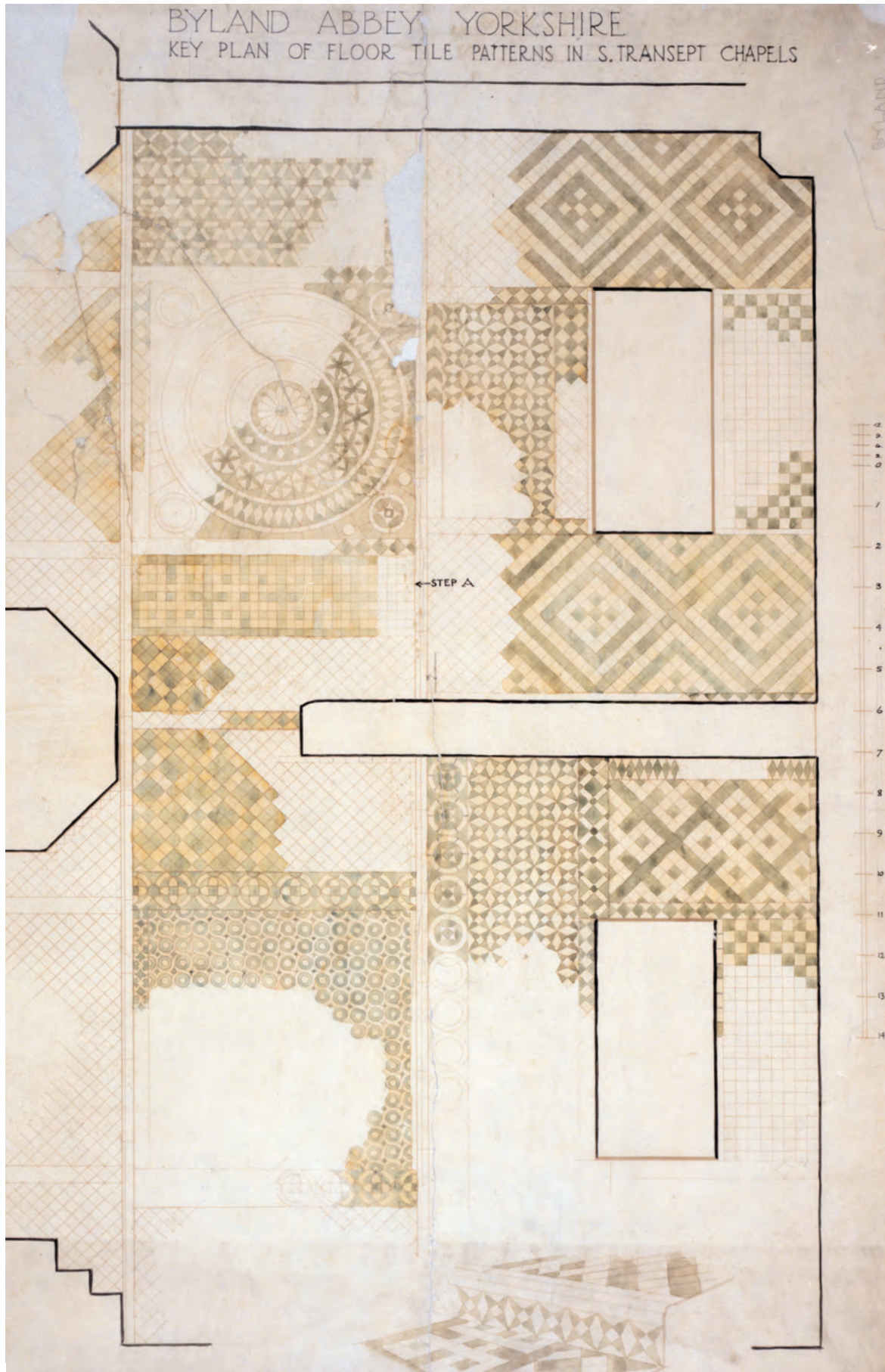


Fig 27.4: Plain Mosaic, Byland Abbey church, south transept chapels looking north. Ink and water colour by J.S. Richardson, c.1929



Fig 27.5: Plain Mosaic at Byland Abbey: the M.65 roundel in the north chapel of the south transept. Photograph taken in 2003 by S.I. Hill

English Heritage: EH/81005154–81005160; 81005165–6; 81005171–2; 81005177; 81005245–6; 88074999; 88090058; 88090099; 88090257; 91005177; 88092530; 88092540; 88092543; 88092635; 88092641; 88092661–2; 88200662 (14 decorated tiles; 8 tiles in the Beaulah collection; c.2500 Plain Mosaic tiles).

British Museum: BMC/441; 958; 1112; 1327–8; 1666–1672; 1768–2045; 2433; 6338–6723; 6726–6738; 6751–6819; 7738. BMC/958 is thought to be incorrectly provenanced (see below).

Victoria and Albert Museum: 1359–1892. A half tile of Plain Mosaic.

Assessment: Excavations began at Byland in the early 19th century. The earliest account is given by Edward Baines (1823, 422). Martin Stapylton, whose family had acquired Byland some time after the Dissolution, began digging south of the church in the summer of 1818. A coffin, believed to be that of Roger Mowbray, founder of Byland, was discovered and removed to the Stapylton family home of Myton Hall. Baines also mentions the discovery of ‘some beautiful Roman pavement, in high preservation’. Some tiles and an altar stone, were also apparently taken from Byland to Myton. In 1843, an affronted reader of the *Ecclesiologist* observed that tiles and an altar slab from Byland Abbey were being used as the pavement of the summer house at Myton (Anon 1843, 32). Today the summer house has a concrete floor and the present owner has no knowledge of the tiles. They have probably been thrown away, but it is possible that they remain underneath the concrete. An altar stone, but no tiles, was given to Ampleforth College by Martin Stapylton’s descendants in 1870 (Wilson 1935, 187).

Clearance excavations by the Ministry of Works began in 1922. The usual notes were kept, recording the finds for which rewards were given. It has been argued in Chapter 26 that the large areas of re-set Plain Mosaic paving at Byland are very likely to reflect their original medieval layout. The Plain Mosaic paving at this site provides much of the surviving evidence for the layout and visual effect of this type of medieval flooring. Its future conservation is of the greatest



Fig 27.6: Byland Abbey: stonework for one of the steps in the south transept, cut to hold Plain Mosaic risers on the horizontal and vertical planes. Scale unit 10mm. Photograph taken by S.I. Hill

importance. The locations of the various mosaic arrangements on site are summarised in Tables 10.10–10.13. However, the Plain Mosaic base for the lectern on display in the site museum is an invention.

The pavement of Huby/Percy tiles in the west claustral walk was also re-set by the Ministry of Works following clearance. The individual designs are not laid in a coherent manner although the overall layout of the floor is generally consistent, with the same number of courses laid at right-angles to the wall and then on the diagonal, all along the walk (Fig 23.4a). Most of the tiles in this pavement have broken up since re-setting (particularly those at the north end of the walk). Some of those at the southern end are the only surviving examples of their designs (details in Chapter 23: *Huby/Percy Group*).

The Ministry of Works notes for Byland occasionally refer to finds of individual tiles but the descriptions do not allow their type to be identified with any certainty. In 1923, two blocks of four ‘encaustic tiles, circular pattern’ were found in the nave, and in 1930 four blocks of four tiles were recorded in what was interpreted as the infirmary chapel. Stuart Harrison has since suggested that this building may have been part of the abbot’s house (1989, I, 48–9) which remained in use in the post-medieval period (1989, II, pl 1). The tiles were seen in this location by G.K. Beaulah, who described them as ‘a hotch potch pavement formed of 13th-century tiles laid anyhow’. It is probable that they were re-used in this location.

The Duke of Rutland received permission to take tiles from Byland in 1926 and 1928 and these tiles are now in the British Museum. It has not been possible to establish where the paving in the Rutland collection was found on the site.

One tile attributed to Byland in the British Museum is of the Decorated Mosaic series (BMC/958, BMD/2451; design 7.121). The characteristics of this tile are exactly like other Decorated Mosaic examples from Jervaulx. No other material of that series is known from Byland and, given the very large extant assemblage from this site, the provenance is probably incorrect.

The two tiles of the unallocated design Un/29 attributed to Byland in W.H. Brook's catalogue of tiles in the Yorkshire Museum are no longer extant (Fig 26.2; not re-drawn). The dimensions recorded by Brook suggest that the tiles may have been of the Huby/Percy series but no examples of this design are identifiable among the surviving Huby/Percy tiles in the west claustral walk.

Dating: According to the documentary sources, the abbey at Byland was founded in 1177 after the monks had made four abortive attempts to settle elsewhere. Preparation and drainage of the site, and the bulk of the building work, are thought to have been carried out during the abbacy of Roger (1142–1196), with some architectural historians favouring an earlier rather than later date for the completion of the church (perhaps by 1177; Peers 1934; Kidson *et al.* 1965; Fergusson 1975; 1984; Hearn 1983; Harrison 1989). Recent work suggests that construction of much of the church was complete by 1177, with work in the south transept continuing until c.1190 (Harrison 1999).

The Plain Mosaic floor at Byland is integral to the stonework of the internal fittings of the church. The stonework for many changes of level in the church was specially cut to hold the tiled pavement (Fig 27.6). The cut away faces of the stonework are most clearly visible in the steps of the south transept chapel, but the same arrangement, with the tiles set into the horizontal and vertical faces of the steps, is also apparent in the presbytery and in the laybrothers' choir. However none of this stonework is keyed into the outer structure of the church, and so the date of the building does not directly provide a date for the tiled floor.

The question, therefore, is whether the tiles were added to the church as soon as the building was complete or whether there was a delay, with the insertion of the stone fittings and tiled floor in a second building phase. In the latter case, there is the further issue of how much time passed between building phases. The roll moulding of the stone steps holding the tiles is similar to that found on the pier bases and other structural stonework, perhaps showing continuity between the outer building and the internal fittings. Also, there is a reference suggesting ownership of a tilery (but of unspecified type) by Byland Abbey in the late 12th century (see entry 70, *Old Byland*). On the other hand the raised areas of the church are built up against and around the piers and other architectural elements, rather than being flush with their bases. Although all the tiles were re-set in the 1920s and the veracity of this relationship may be suspect (see Chapter 26), it might show that the tiled floor was part of a wholesale insertion of the stepped platforms in the chapels, nave and presbytery at a later date.

It is therefore possible, at present, to see the tiled floor either as part of the fitting out of the church following on from the main construction of the building, or as a second phase of work, occurring some time after the building was completed. The completion of the main construction phase of the church in c.1177 provides a *terminus post quem* for the tiled floor. The simplified layout of the tiling in the nave chapels could suggest a later date for these settings. Alternatively, this might be argued to be consistent with the lesser status of this area of the church.

18. CARLISLE CATHEDRAL PRIORY, CUMBRIA, NY/398560 (Augustinian canons)

Tile groups, designs:

Group 28, designs 28.1, 28.2 (Fig 24.4).

Group 33, see entry 19, *Carlisle: other*.

Publications: None.

Extant tiles: Carlisle Cathedral Dean and Chapter: three tiles and three fragments of Group 28, displayed in the Prior's Tower.

Assessment: A photograph of excavations in the chapter house is reputed to show a tiled floor. The tiles were apparently not laid with respect to their patterns.

Dating: None.

19. CARLISLE, CUMBRIA: OTHER, NY/397563

Tile groups, designs: **Group 33**, designs 33.1–33.8 (Fig 25.2).

Publications: None.

Other records: Caruana 1985.

Extant tiles: Carlisle Archaeology Unit: 21 fragments, six decorated (CAR85; CAR81 ANN A).

Tullie House Museum: three tiles/fragments, two decorated (1921.34.22).

Assessment: The tiles were found on three different sites in Carlisle but none was *in situ*. The most complete examples, those in Tullie House Museum, were found in Scotch Street (the Lanes) in 1890. Two fragments came from undated contexts in Annetwell Street, with the remainder from test pits and other excavations around the cathedral. Most of the pits were outside the church but a few fragments came from the fill of graves which would have been in the nave of the medieval building. A tiled floor in the medieval cathedral seems likely. As debris from the cathedral has been found as far north as the castle, which is beyond Annetwell Street, the Annetwell tiles could also have been in use at the cathedral. However, the Scotch Street examples suggest there was use or re-use on other sites in the town but nothing is known of the circumstances of these finds.

Dating: None as yet but post-excavation work is on-going.

20. COCKERSAND ABBEY, LANCS, SD/427537

(previously Priory; Premonstratensian canons)

Tile groups, designs:

Transpennine, designs 23.5, 23.8, 23.12, 23.16, 23.17, 23.28, 23.34, 23.36 (Fig 22.1).

Huby/Percy, designs 24.30, 24.33, 24.38 and a variant of 24.26 (Fig 23.1).

Publications: Farrer 1909, 1171, 1178; Sherdley and White 1975, 13–14, fig 4.

Extant tiles: Lancaster Museum: 30 plain and 22 decorated tiles.

Assessment: The records of excavations carried out in 1923–4, published by Sherdley and White in 1975, noted finds of Transpennine Group tiles in the north and south transepts, the Lady Chapel and the south-west corner of the cloister. There was little contextual information but a plan noted a 'tiled area' in both the north and south transepts, suggesting that the tiles in these locations had been found *in situ*.

Sherdley and White also illustrated a Huby/Percy tile (a variation on design 24.26) but its location on the site is not known. Sherdley and White did not refer to the other Huby/Percy tiles which are attributed to Cockersand Abbey in the Lancaster Museum collection. These examples are consequently less well provenanced than the published material.

An inventory made in 1536 of the goods and chattels at Cockersand Abbey listed 'olde' (perhaps worn) paving tiles valued at xxd. in the Lady Chapel and a pavement of 'small' tiles priced at xxs. in the cloister (Farrer 1909, 1171, 1178). The section of the inventory relating to the transepts of the church is missing. If the reference to 'small' tiles infers there were also large tiles, this would support the use of the Huby/Percy tiles at Cockersand.

Dating: The Lady Chapel is thought to be a post-1360 addition to the priory church on stylistic and archaeological grounds (Sherdley and White 1975, 5), providing a *terminus post quem* for the tiles in this location. The excavation suggests that these were tiles of the Transpennine Group.

21. CONISBROUGH CASTLE, S YORKS, SE/514989

Tile groups, designs: **Nottinghamshire**, design Wh/100 (Figs 18.1b, 18.2).

Publication: Johnson 1980, 82–3.

Extant tiles: Doncaster Museum: one tile.

Assessment: The tile was found during excavations in 1973–7 but was unstratified. Its location within the castle is not known.

Dating: None.

22. COWICK MANOR, E YORKS, SE/652205

Tile groups, designs: **Group 20 (Dieppe/Sussex)**, designs N/25, 31, 46, 52, 53, 54, 55, 66, 67, 68 (Fig 21.1).

Publications: Hayfield and Greig 1990, 116–17, fig 4; Norton 1993a.

Extant tiles: Doncaster Museum: 18 tiles, mainly whole. A pristine but unprovenanced example of N/32 is in the Yorkshire Museum (Brook/9).

Assessment: Tiles were found by Birmingham University during a watching brief on dredging work at a moated manor house at Cowick in 1976. The house is thought to have belonged to Edward II. The floor tiles were recovered from close to the bridge emplacements where large quantities of complete or nearly complete pottery vessels were also found. The interior of the site has not been excavated.

Dating: No direct evidence. A date later than the documented alterations and refurbishment of the manor by royalty in the second quarter of the 14th century might be thought likely (Hayfield and Greig 1989).

23. COXWOLD, NR BYLAND, N YORKS: LOW PASTURE FARM, SE/552783

Tile groups, designs: **Plain Mosaic**, 70mm square.

Publications: None.

Extant tiles: MAP Archaeological Consultants Ltd, Malton: one tile.

Assessment: Found during a watching brief from a context thought to be the backfill of a disused mill site.

Dating: Medieval.

24. COXWOLD, NR BYLAND, N YORKS: MANOR FARM, SE/533772

Tile groups, designs: **Plain Mosaic**, 70mm square.

Publications: None.

Extant tiles: There is a worn floor of c.70mm square Plain Mosaic tiles in a partly below ground cellar or undercroft.

Assessment: The tiles are most likely to have come from Byland, 3km away, after the Dissolution, although other possible sources are Rievaulx and Newburgh. Medieval use on this site could also be possible.

Dating: Manor Farm is part of the 17th-century Colville Hall estate. Its fabric includes elements of 17th-century building, but also earlier stonework such as a Tudor archway. While post-Suppression re-use of tiles from Byland or elsewhere is most likely, use or re-use in the medieval period cannot be ruled out. It is possible that medieval buildings existed on this site and were adapted by later owners. The tiles could have been laid here at any time.

25. DURHAM CATHEDRAL PRIORY, NZ/273429

(Benedictine monks)

Tile groups, designs:

Plain-glazed.

Provenances uncertain: **Decorated Mosaic**, design 7.118 (Fig 14.1i); **Unallocated** possibly Decorated Mosaic, design Un/10 (Fig 25.4).

Publications: Eames 1980; Gee 1966; Johnson 1968; Wilson and Hurst 1964a.

Extant tiles: On site: the Plain-glazed tiled floor remains as found and is accessible via a false wall.

British Museum: two decorated tiles (BMC/1366; 1542).

Assessment: Parts of a pavement of worn Plain-glazed tiles was discovered during repairs carried out to the library, formerly the refectory, by RCHME in 1961 (Gee 1966). A sequence of three floors was established. The earliest, of smooth white plaster, lay over the rubble and concrete mass of the undercroft vault. Slightly raised above this was a timber and tiled floor. The same tiles, set on edge and with a stone curb, formed the base of a large open fireplace in the centre. Above this was the 17th-century floor which belonged to the period when the refectory was converted into a library.

The two decorated tiles in the British Museum Rutland collection are attributed to ‘Durham, Abbey, Co. Durham’ (Eames 1980, 1, 720). A decorated tile of unknown design or type was noted among finds from the earlier refectory floor in the cathedral and might relate to one of these tiles (Johnson 1968, 90). If so, it would suggest that Decorated Mosaic tiles were in use at Durham.

Dating: The Plain-glazed tiled floor in the refectory was thought to date to c.1500.

26. EASBY ABBEY, NR RICHMOND, N YORKS, NZ/186002 (Premonstratensian canons)

Tile groups, designs: Possibly **Plain Mosaic**, c.105mm squares.

Publications: None.

Other records: Thubron 1989; G.K. Beulah note.

Extant tiles: English Heritage: three tiles (EH/88213459–88213461).

Assessment: The tiles were among finds deposited first with the Archaeology Section, North Yorkshire County Council, and then with English Heritage. They were with material from a watching brief on the conversion of Easby tithe barn in 1988. However, the tiles are not mentioned in the watching brief report and may simply have been found in the barn. The provenance of the tiles is therefore uncertain. When G.K. Beulah visited Easby in 1931 he was told that no floor tiles had been found there.

Dating: None.

27. ELLERTON PRIORY, NR SELBY, E YORKS, SE/702398 (Gilbertine canons)

OR ELLERTON PRIORY, NR RICHMOND, N YORKS, SE/079974 (Cistercian nunnery)

Tile groups, designs:

Plain Mosaic (Fig 27.7)

Unallocated, design Un/4 (Figs 25.4, 27.7).

Publications: None.

Other records: Fowler c.1800–1821, vol 4, 23/29, engraving titled ‘Curious floors arranged from tiles dug out of the ruins of Ellerton Priory’, not dated and thought not to have been published (Fig 27.7; ref. 4, p.368).

Extant tiles: None.

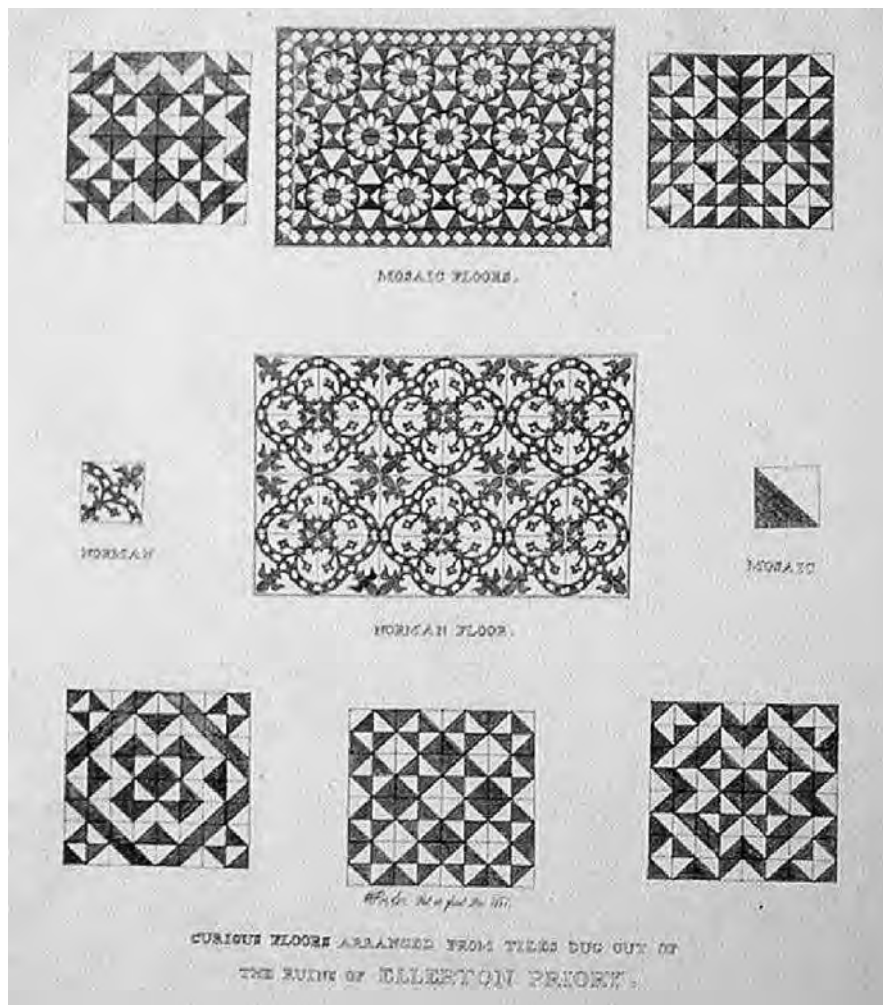


Fig 27.7: Ellerton Priory: engraving by W. Fowler 1821, showing design Un/4 (not allocated to a tile group) in the centre and some mosaic reconstructions, possibly of Plain Mosaic tiles

Assessment: Fowler's reputation is such that his record of tiles from Ellerton is not in doubt. However, there are two places in Yorkshire called Ellerton that have medieval priories. One was a small house of Gilbertine canons, c.12km north-east of Selby, not far from Fowler's home. The other, a Cistercian nunnery, was in Swaledale. Fowler's engraving may illustrate tiles from either of these sites. The only recorded excavations carried out at the Gilbertine priory were in 1847, when the ruined church was pulled down to make way for the present parish church. It is thought that stained glass from the priory was incorporated in the new building (Collier and Lawrence 1922). There is no record of tiles being found. At the Cistercian site, clearance work and quarrying for raw materials was going on in August 1827–8 (Milne 1902, 219–21). Finds of two coffin lids are described but there is no mention of floor tiles. The work at both sites post-dates Fowler's drawing so the tiles he illustrated were from an earlier, unrecorded, disturbance. The collections of William Fowler's work in Hull and Scunthorpe show a tendency to work at sites in the general vicinity of his home at Winterton, particularly when the work was not commissioned. Tiles from the Gilbertine priory near Selby are more likely to have been the subject of an unpublished, undated work than material from the priory near Richmond.

Dating: None.

28. EPWORTH MANOR, ISLE OF AXHOLME, N Lincs, SE/773039

Tile groups, designs: Nottinghamshire, designs Wh/31, Wh/83, Wh/86, Wh/91, Wh/103, Wh/115 (Figs 4.2, 4.3, 18.1, 18.2).

Publications: Hayfield 1984.

Extant tiles: Doncaster Museum: display panels of tiles with designs Wh/31, Wh/86, Wh/103, Wh/115 (the examples of Wh/103 have been restored incorrectly, without the central rosette of this design; it is just visible on the one complete example). The location of the tile of Wh/83 is now uncertain but it may be in Doncaster Museum.

Sacristy of St Andrew's parish church, Epworth: six tiles (Wh/31, Wh/91 and Wh/103).

Humber Archaeology Partnership: two tiles (Wh/31 and Wh/103).

The Old Rectory, Epworth: one tile (Wh/3).

Assessment: A tiled floor was found in a field called the Vinegarth, south of the parish church of St Andrew, by the vicar of Epworth in 1968. This floor was again uncovered during excavations in 1975–6 (see plans in Figs 4.2–4.3). The site is thought likely to have been the manor house of the Mowbrays of Axholme on the basis of the documentary evidence, and because of the heraldic design (Wh/31) found on most of the tiles. The design is interpreted as the arms of the Mowbray family (gules, a lion rampant argent), although the

design is accidentally reversed on the tiles. Most of the tiles were found in a kitchen floor surrounded by bricks. The excavator suggested that they might have been re-set in this location when the house passed out of the hands of the Mowbray family and the design became irrelevant.

Dating: Documents name Epworth as a manor of the Mowbray family from the 12th century through to the late 15th century. The manor then passed to the Berkeley family who sold it in 1506 to the Stanleys, after which it passed to the crown (Hayfield 1984, 6). The excavations established that a number of stone buildings of possible manorial status existed on the site by the 14th century. The absence of pottery after the early 16th century suggested that the buildings had been abandoned, ruling out the possibility of post-medieval re-use of the tiles. The first use of the tiles could date from the 14th century.

29. FOUNTAINS ABBEY, N YORKS, SE/275683

(Cistercian monks)

Tile groups, designs, shapes:

Plain Mosaic, designs 1.3, R1.3, 1.9–11, [?1.17]. Shapes 4, 8, 11, 17, 33–6, 43, 47–8, 54, 58, 60, 79, 88–9, 94, 97, 103–4, 107, 110, 118, 124, 129, 140, 159, 172, 176, 179, 181, 193, 203, 211, 212, 215, 216, 324, 344, 351, 358, 375–6, 384–5, 389, 393, 395, 398–401, 404–5, 414, 422, 424–5, 428, 431–4, also 80–90mm and 125mm squares (Figs 10.1–10.3, 10.6, 10.14, 10.15).

Group 3, designs 3.1, 3.4 (Fig 11.3).

Plain-glazed.

Transpennine, designs 23.4, 23.5, 23.8, 23.14, 23.17, 23.24, 23.32, 23.36 (Figs 22.1, 27.12).

Huby/Percy, designs 24.1, 24.2, 24.5–8, 24.26, 24.27, 24.30, 24.33 (Fig 23.1).

Group 25, designs 25.1–7, 25.9, 25.12 (Figs 24.1, 27.12). In addition, a mirror image of design 25.2 was listed by W.H. Brook as from Fountains (1921–36, no.

161). However, this has not been found in the Yorkshire Museum collection and was not recorded from the excavations at Fountains by J.R. Walbran. It may be a mistake. A possible source of confusion may have been the fable illustrated by design 25.2, which includes either a reflection or, in some versions, a reflective ball or mirror (see Chapter 6).

Group 34, shapes 16, 164, 175, 381, 453; also 60mm and 70mm squares (Fig 25.3).

Unallocated, designs Un/1, Un/2, Un/16 (Fig 25.4).

Provenances doubtful: **Group 10**, design 10.4 (BMC/2270; Hore 1911, Y120); **Unallocated**, design Un/19 (Brook/144).

Publications: Anon 1806, 197; Coppack 1986b; Eames 1980, 1, 72–82, 96, 116–17, 128, 268–72; Eames and Beulah 1956; Gass 1875; Gilyard-Beer and Coppack 1986; Hayward Gallery 1988; Hills 1871, 299, pl 46; Hobson 1903, 13, A80; Hope 1900a; Reeve 1892; Renaud 1892, fig 13; Rowe 1879; Sheppard 1908–9, 100; Verax 1791; Walbran 1846; 1849; 1851; 1854; 1856; *Memorials II*; Wellbeloved 1881, 130–4, IVT.

Other records: Brook c.1921–36, nos 106, 124–9, 137, 140, 141, 142, 144, 145, 146, 157, 159, 161, 170b, 187, 189, 191, 192, 194, 196, 222/223, 243; English Heritage, report on work in the north transept, n.d.; Fenton 1854 (ref. 3, p.368); Fowler c.1800–1821, vol 4, 7/5, engraving titled ‘Principal Patterns of the Roman floors of Fountains Abbey, near Rippon, Yorksh.’ (ref. 4, p.368); Hore 1911, Y116–121 (ref. 7, p.368); Maw 1863, engravings titled ‘Pavement of High Altar Fountains Abbey at Ripon’ and ‘Geometrical tiling Fountains Abbey at Ripon’ (ref. 11); Newman 1993; Office of Works 1936 (ref. 15); Renaud 1887–8, vol 2, nos. 195, 196, 197, 198, 199, vol 3, nos. 319, 320 (ref. 17); Rowe 1881, vol 11, nos 20, 25, 28, 36, 101, 106, 199 (ref. 18); Wilson 1992.



Fig 27.8: Plain Mosaic in Fountains Abbey, with all the glaze and most of the white clay worn away: the two-tier tiled platform in the presbytery as it was in c.1990. Figs 27.14–27.16 are earlier records of this feature. The Plain Mosaic arrangements recorded at Fountains by William Fowler in 1800 may have been used in an earlier version of this platform (Fig 27.13)

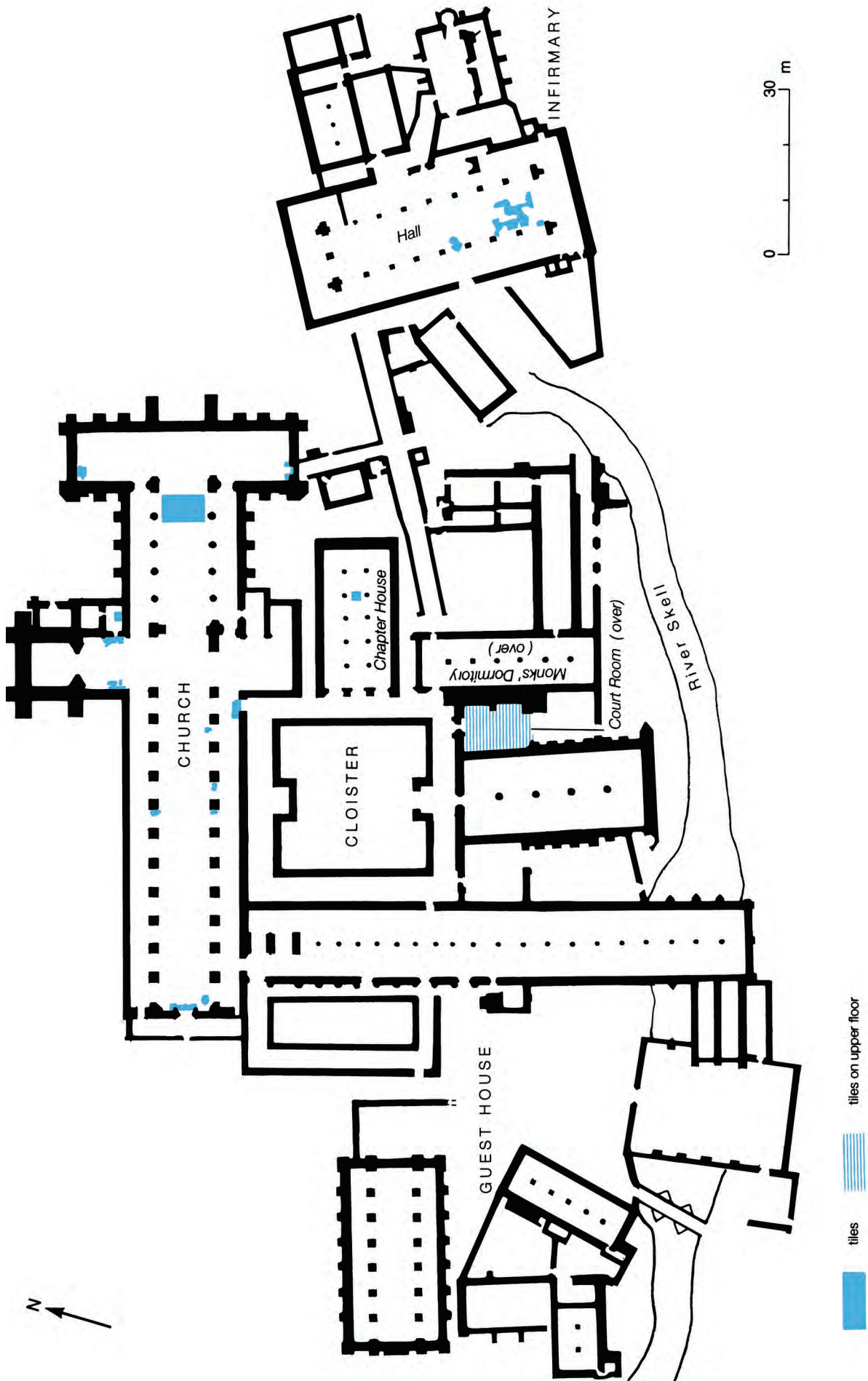


Fig 27.9: Fountains Abbey showing the locations of re-set tiles

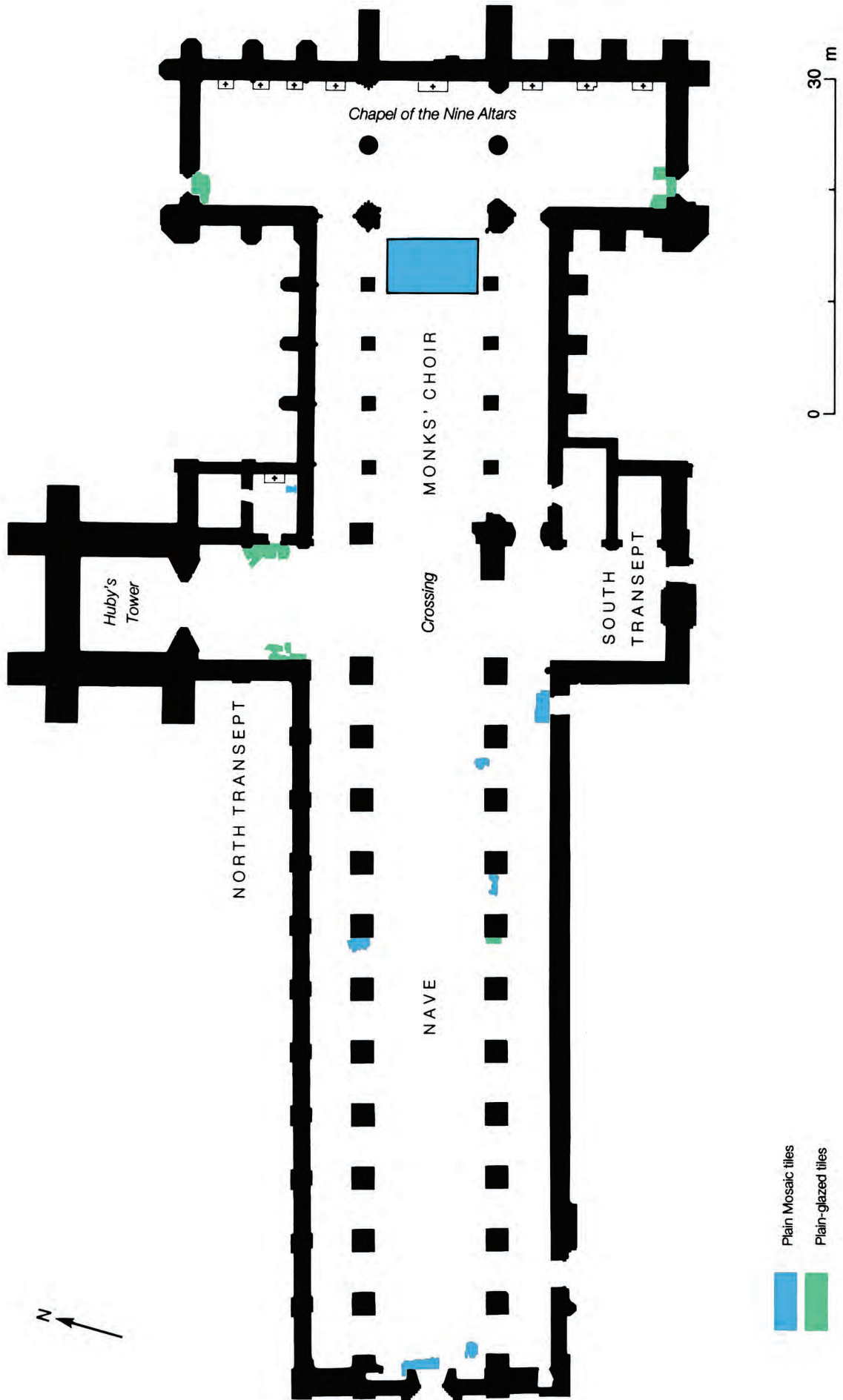


Fig 27.10: Fountains Abbey showing the location of Plain Mosaic and Plain-glazed tiles re-set in the church

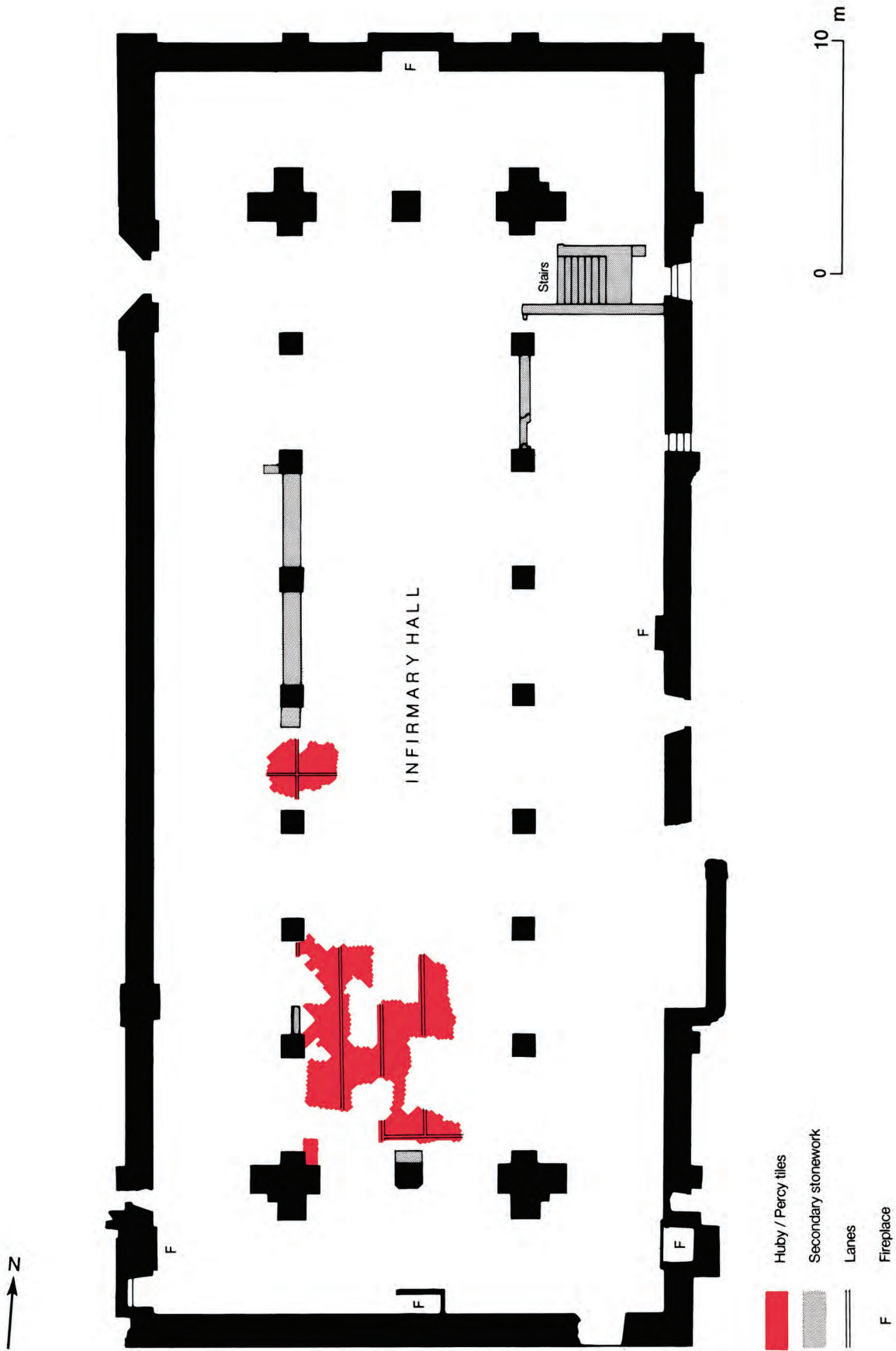


Fig 27. 11: Fountains infirmary, showing the layout of the Hubby/Percy pavement of c. 1500. This building was constructed as an aisled hall and subsequently divided up to form a series of rooms with fireplaces and other fittings. Scale 1:250

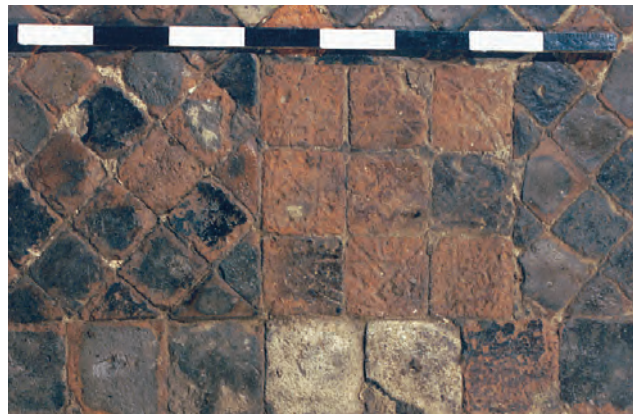
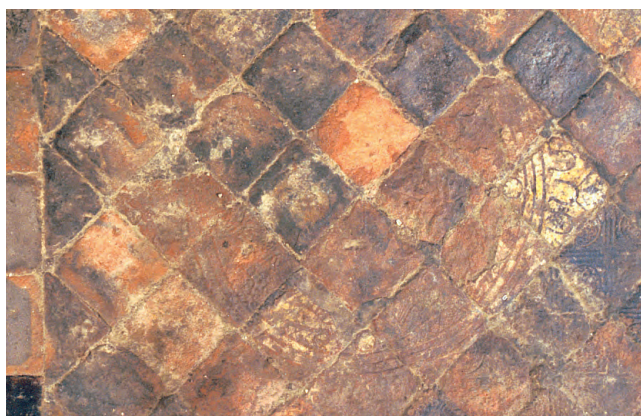


Fig 27.12: Rare tiles re-set in the muniment or court room, Fountains Abbey: a 9-tile set of the Transpennine Group designs 23.12, 23.13 and 23.17 (left) and design 25.4 (right)

Extant tiles: On site: re-set as shown in Figs 27.8–27.12.

English Heritage: 84 decorated tiles; 77 boxes/c.3200 mosaic tile; 12 boxes/c.100 Plain-glazed; with 10 boxes of unidentified or miscellaneous material and four tiles in the Beaulah collection (EH/960082; 78206011–78206015; 78206222; 78206254–78206313; 78206331; 78206361; 78206368; 78206372–4; 78206377; 78206383; 78206385; 78206389; 78206394; 78206396; 78206401; 78206409; 78206412–78206424; 78206433; 78206438; 88212937–8; 88212970; 88092535; 88092543; 88092546; 88092548). Some good quality examples of various groups were on display in the site museum until recent times. These tiles may now be in the care of the National Trust.

British Museum: 33 tiles (BMC/1723–1754; 2270; 11202).

Yorkshire Museum: 25 tiles (Brook/106; 124–9, 137, 140, 141, 142, 144, 145, 146, 157, 159, 161, 170b, 187, 189, 191, 192, 194, 196, 222/223; see *Yorkshire Museum*, Chapter 26, for further details).

Assessment: Linking specific tiles to Fountains is particularly difficult because the abbey attracted the attention of antiquarians to a greater extent and at an earlier date than most other sites in the north. The great antiquarian expert on the site was J.R. Walbran who carried out a series of substantial excavations here in the mid 19th century. According to Walbran, the ruins were bought in about 1767–8 by William Aislabie (1846, 5; 1856, 68). Aislabie wished to make them a romantic, picturesque finale to the walk through the water gardens of Studley Royal, created by his father. Subsequent owners were concerned with the condition of the fabric and with the excavation of buried remains. The sequence of work carried out at Fountains in the later 18th and 19th centuries was summarised in *The Builder* (Anon 1895, 3) as follows:

‘The Abbey has been singularly fortunate in its subsequent possessors, though Mr Aislabie, who owned it in the last century, cleared the church from end to end to make a vista, and destroyed the remains of the cloister to form a garden. His eldest daughter, Mrs Allanson, to whom the Abbey descended, began in 1790 to clear the chapter house of rubbish. The next owner, Mrs Lawrence, between 1808 and 1845, judiciously repaired the tower, the nave-aisles, and the vault of the great western range. The ruins were finally brought to their present excellent condition by the late Earl de Grey and Ripon, who carried out extensive excavations between 1848 and 1856, and laid

bare the remains of the infirmary and the abbots lodging. Some minor works, which had been left undone, were completed by Mr St John Hope, by permission of the present owner, the Marquess of Ripon, in 1887–8.’

A brief outline of the excavations carried out at Fountains was given by Gilyard-Beer (1968, 318–19). The first diggings to be recorded in any detail were those of 1848–54 directed by J.R. Walbran, who uncovered the infirmary, the abbot’s lodgings and the church. Walbran was interested in and knowledgeable about the floor tiles and his reports constitute important records of what remained after Aislabie’s activities. The designs illustrated in Walbran’s article of 1851 were designs 3.4, 23.4, 23.17, 23.8, either 23.5 or a mirror of 24.25, 24.1–8, 24.26, 24.27, 24.30, 24.33, 25.1–5, 25.7, Un/1 and Un/2. Some of these are no longer represented in the loose collection from Fountains. Tiles of design 23.17 and 25.4 are, however, still visible on tiles re-set by Walbran in the Muniment or Court Room (see Fig 27.12; Walbran 1856, 92 footnote; see further below). The Court Room was used as a workshop for part of the 20th century and the floor is now much worn. There are no extant examples of designs Un/1 and Un/2. Design Un/1 may also have been found at Newminster Abbey (see entry for *Newminster Abbey* below).

A re-examination of the church was carried out by W.H. St John Hope between 1887 and 1889, with some additional work in the refectory in 1904. Hope’s report, published in 1900, is the standard work on the architecture of the site but contains few references to floor tiles and rarely distinguishes between one type and another. However, a contemporary of Hope, J. Arthur Reeve, made a meticulous set of plans and elevations of the abbey buildings. The plan of the church, completed in 1876, showed the siting of individual tiles.

The usual clearance work was carried out in the 1920s and 1930s when the site was taken into state care. Subsequently, there have been excavations in the south transept and south crossing aisle (Gilyard-Beer and Coppack 1986, 147–88) and in a building in the outer court interpreted as the wool house (Coppack 1986b, 46–87, pls 5–7), with small-scale work in the north transept and the passage between the infirmary and misericord (English Heritage unpublished report, nd; Wilson 1992).

Provenance of the loose collections

The tiles in the English Heritage collection were stored on site when recorded and are securely provenanced to

Fountains Abbey. Much of this material came from the various site clearances and has no precise context within the abbey complex. That found in recent excavations is discussed further below.

In the 1881 edition of the YPS handbook, Wellbeloved listed 22 tiles in the Yorkshire Museum collection as from Fountains Abbey. Some of these tiles had been bought in a sale in Ripon in 1877 and were described by Wellbeloved as 'plain tiles from the high altar of 13th-century work' (1881, 131). These may be the extant Plain Mosaic tiles of Brook/141, a nine-tile framed corner roundel of M.65. They had been attributed to the high altar at Fountains by Renaud in 1887–8 (vol 2, no. 199, titled 'A tile pattern from Fountains Abbey in Yorkshire Museum forming part of the altar floor'; ref. 17, p.368), but just to Fountains Abbey by Brook in c.1921–36. The provenance of re-set tiling in this and other areas of the church is discussed further below.

Tiles of a 4-tile arrangement of the Marmaduke Huby designs 24.1–24.4 (Huby/Percy Group) had been acquired by the YPS in 1870 from Walbran's own collection. Tiles of these designs are now poorly represented in the extant assemblages. The unprovenanced but extant example of design 24.1 in the Yorkshire Museum may be one of these tiles (Brook/133). Six 'ornamented tiles set in a frame' were also provenanced to Fountains in Wellbeloved's YPS Handbook, and the kiln in which they were made was said to be near the abbey (1881, 131). These may be the six framed tiles of design 23.36 in the Yorkshire Museum collection, which are probably incorrectly attributed by Brook to the high altar at Fountains (Brook/124–9). Walbran does not record finding any tiles of this design in the area of the high altar, or elsewhere in the church and Wellbeloved's attribution does not assign them to the high altar. There is no further record of the kiln mentioned by Wellbeloved and this comment may have been derived from a speculative reference made by Walbran when discussing tiles of this design (1851, 287).

Brook also attributes a boxed-set of four tiles of the Unallocated design Un/19 to the high altar at Fountains (c.1921–36, no. 144). This design is not present in the extant collection from Fountains and is of a type unknown on sites north of the Humber. Much earlier, Wellbeloved had described a compartment of four tiles, set in a frame, and ornamented with oak leaves and acorns (i.e. like design Un/19) as bought in York in 1874 (1881, 132, entry VI Tb). These tiles must now be unprovenanced.

Walbran excavated at Sawley Abbey as well as at Fountains and tiles from both these excavations were given to the Yorkshire Museum, including several good quality Transpennine Group examples. Tiles of the Transpennine Group were found at both Fountains and Sawley and some tiles found at Sawley were moved to Fountains in the 19th century. The provenance of the examples in the museum was already confused in 1881 when they were drawn by Rowe. Their precise provenance cannot now be established; they could have come from either Fountains or Sawley. For further details, see the discussion of the Yorkshire Museum collection in Chapter 26.

One tile of Group 10 (Line Impressed Mosaic) in the British Museum collection (design 10.4, BMC/2270) is attributed to Fountains Abbey. This may be a mistake since there are no tiles of this type in the large, well-provenanced, extant assemblage from the site held by English Heritage. There are some unprovenanced examples of Group 10 tiles in Leeds City Museum, including a tile of design 10.8 and one of design 10.9, otherwise only known from the photograph of the tiles found at Bolton Priory (see above and Fig 16.1). In 1911 the Leeds collection apparently also con-

tained a tile of design 10.4, as this was drawn by a tile enthusiast, Irene Hore, while visiting the area. Irene Hore's drawing labels the tile as from Fountains Abbey but the provenance of other material drawn by her at Leeds is highly suspect and much of the collection at Leeds is now considered to be unprovenanced. It is uncertain whether two separate tiles of design 10.4 are involved here, or whether the Leeds tile subsequently went to the British Museum via the Rutland collection. According to the Rutland catalogue, the tile in the British Museum was bought in Nottingham in 1930, 'said to have come from Fountains'. The provenance of Group 10 to Fountains Abbey remains doubtful.

Provenance of tiles in the church

Table 27.1 lists the type and condition of tiles that now remain in the church at Fountains. Their locations are shown in Figure 27.10.

As has been seen, Walbran's reports contain most of what is known about finds of floor tiles at Fountains in the 18th and 19th centuries. Rubble cleared from the abbey during Aislabie's time was used in a pedestal or mount for a statue, to make up walks and to level ground between the abbey and the rest of the garden (Walbran 1846, 5–6; 1856, 68. See Chapter 26 for a contemporary's view on Aislabie's use of the tiles). It is likely that large numbers of tiles were re-deposited in this way. This was demonstrated by an excavation outside the west gate which uncovered a post-medieval dump of masonry, pottery and 534 tiles/fragments (Newman 1993).

Table 27.1: Tiles in the abbey church at Fountains

<i>Location</i>	<i>Tile type</i>
Chapel of Nine Altars, north side	c.120mm, c.135mm, c.150mm, c.200 Plain-glazed; worn
Chapel of Nine Altars, south side	c.120mm, c.150mm Plain-glazed; worn
High Altar platform	Plain Mosaic arrangements and 85mm squares; worn
South transept, southern chapel	three c.85mm Plain Mosaic triangles; not worn
North transept, southern chapel (St Michael's chapel)	Plain Mosaic arrangements M.95, M.93, and M.32 or similar; part worn
Doorway to cloister	c.85mm Plain Mosaic squares; worn
First bay west of the pulpitum	c.85mm Plain Mosaic squares; worn
Third bay west of the pulpitum, south side	Plain Mosaic arrangement M.98 and 85mm squares; part worn
Fourth bay west of the pulpitum, south side	c.120, c.135mm and c.150mm Plain-glazed; worn
South of the west door	c.85mm Plain Mosaic squares; worn
Immediately inside the west door	c.85mm Plain Mosaic squares; worn
Fourth bay west of the pulpitum, north side	invented Plain Mosaic circle; Plain Mosaic arrangement M.99 and c.60mm Plain Mosaic squares; worn
North transept, west side	c.115mm, c.135mm, c.150mm Plain-glazed; not worn
North transept, east side	c.135mm, c.200mm Plain-glazed; not worn

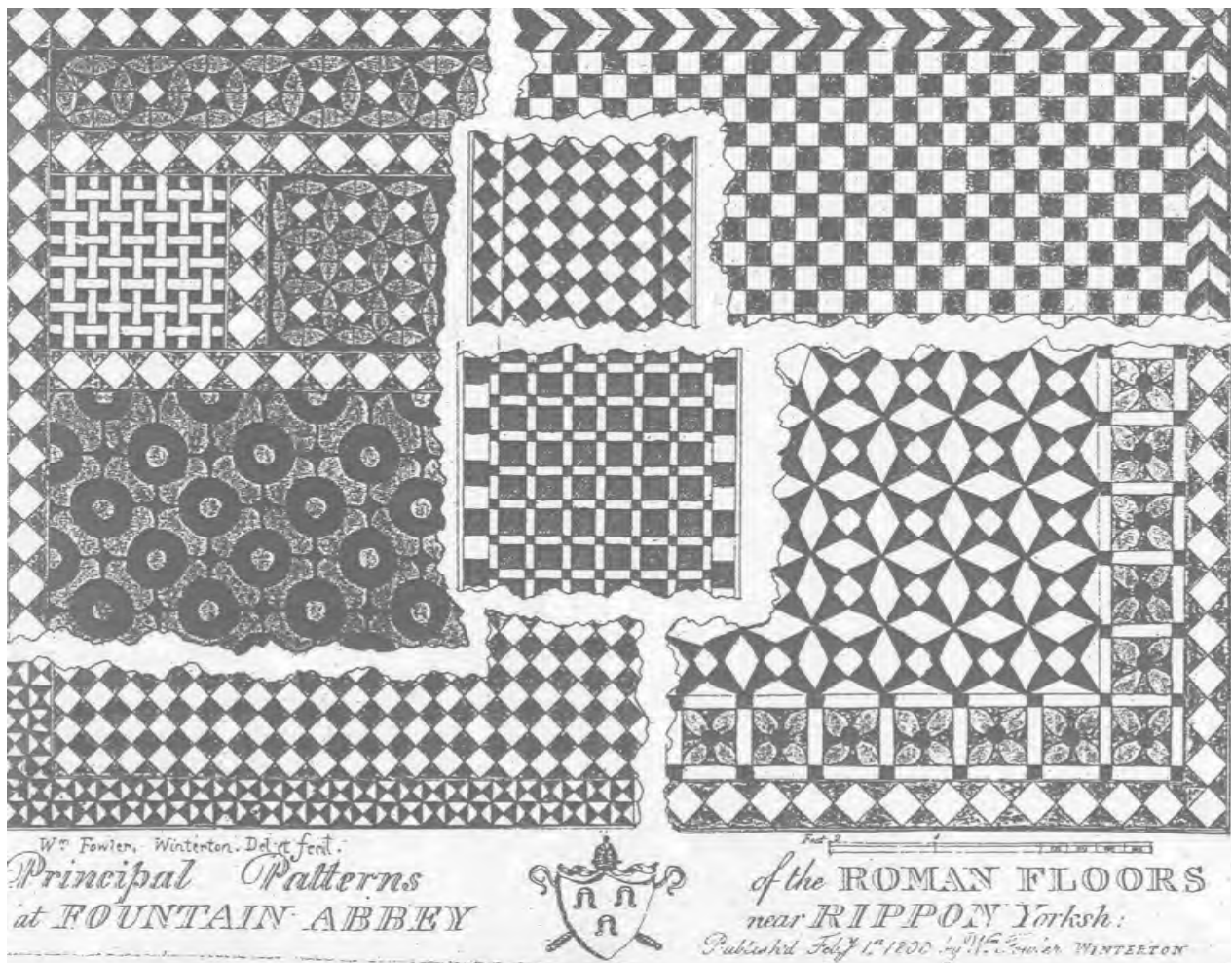


Fig 27.13: Plain Mosaic, Fountains Abbey, as recorded by W. Fowler 1800: Plain Mosaic arrangements not illustrated elsewhere include M.102, the chequered arrangement of small square tiles at bottom left and M.116, the adjacent border of small triangular tiles

The presbytery and Chapel of the Nine Altars

Aislabie's pedestal and statue are now long gone but there is a two-tier 'high altar' platform, tiled with Plain Mosaic and standing in the middle of the first bay of the presbytery, that may be a survival from his time (Fig 27.8). The first depiction of a two-tier structure in approximately this location was by Thomas Hearne, drawn from a sketch by Joseph Farrington and etched in 1782 by W. Byrne and T. Medland. However, this drawing shows a platform made of stone blocks without any tiling. Perhaps the base of the platform had been constructed by this time and it was paved later. The earliest reference to floor tiles in the church appeared in *The Gentleman's Magazine* (Verax 1791) in which tiling found in the chapter house was described as 'a fine tessellated pavement, not unlike the remains at the altar in the church'. There followed a note that 'the fine tessellated pavement at the high altar is much loosened since I was last there'. This need not, of course, necessarily describe the two-tier platform. In 1800, William Fowler drew several mosaic arrangements from Fountains which are shown as six separate pieces of tiling in his engraving (Fig 27.13). If the published print is reversed from left to right and from top to bottom it is clear that a substantial part of the drawing corresponds to the tiling of the presbytery platform. In a guide to the site of 1838 by John Lewis Linney it was noted that the tessellated pavement of the high altar had been carefully relaid. This might suggest that some repair work had been carried out and it is possible

that the alterations from the layout as recorded by Fowler occurred at this time. The first representations of a tiled platform in approximately its present form date from the early decades of the 19th century. A photograph showing the platform was also taken by Roger Fenton in 1854. Unfortunately, none of these records show the mosaic arrangements clearly. It was at this time that Walbran wrote of the arrangement of these tiles as a 'long disputed question' (1854, 57). A depiction of the platform almost as it is now was made in 1863 by George Maw of Maw and Co, the 19th-century tile makers (Fig 27.14). The only difference in the layout today is that the single band of trellis (as Plain Mosaic arrangement M.24, but set on the square) in the top left of the upper tier of the platform drawn by Maw is now arrangement M.98 (compare Figs 27.8 and 27.14). The same layout was published in *Collectanea Archaeologica* (Hills 1871; see Fig 27.15) and in the *Building News* (Gass 1875; see Fig 27.16).

There is no direct evidence to suggest that Plain Mosaic tiles were ever found on the site of the high altar at Fountains, or to indicate that there was a medieval tiled platform of this type there. Hope suggested that the site of the high altar would, in fact, have been further west, on the line between the first pair of piers (1900a, 300). Some aspects of the Plain Mosaic arrangements also suggest that the platform was a post-medieval invention. No altar platform constructions of this type are known elsewhere and it is likely that risers would have been used in the vertical faces of the top tier

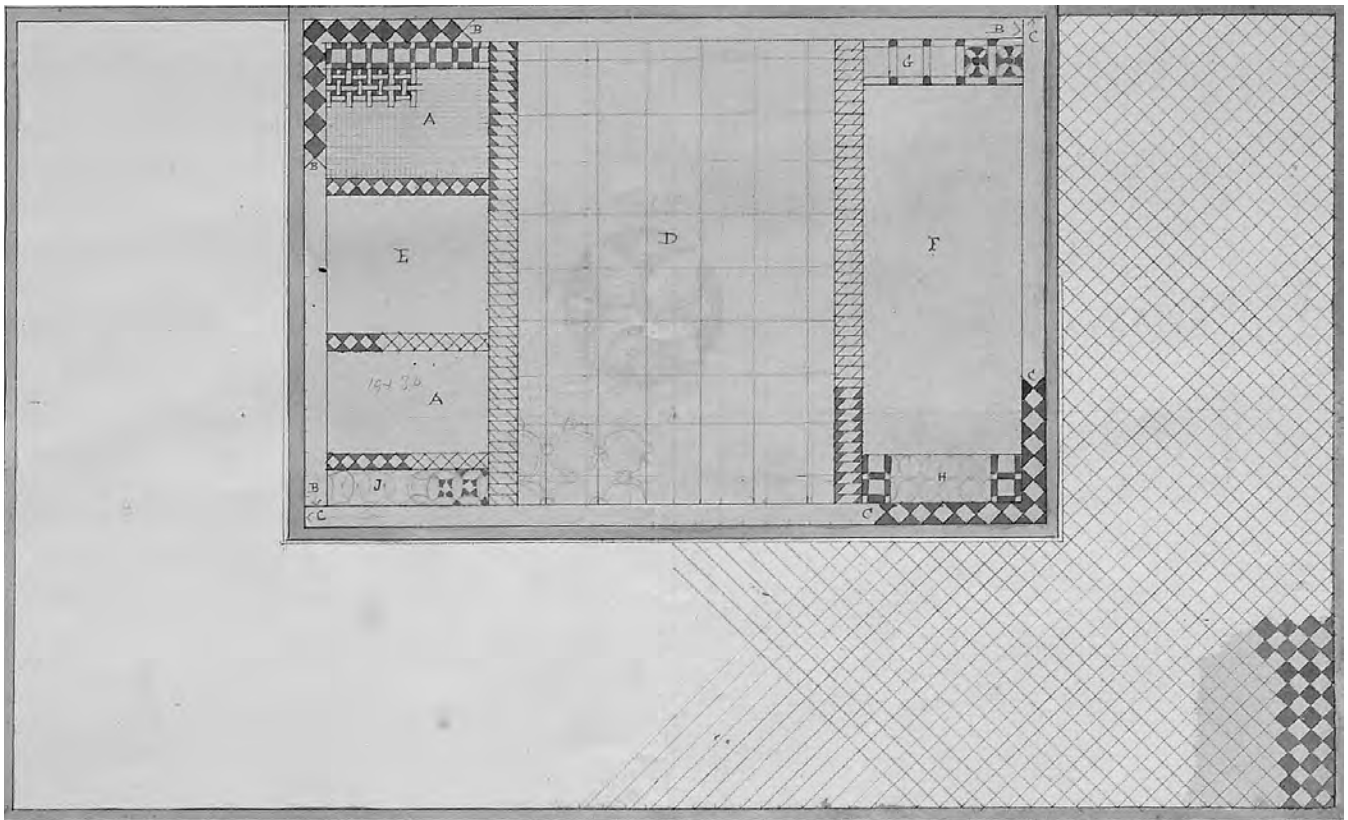


Fig 27.14: Plain Mosaic, Fountains Abbey, as recorded by G. Maw 1863

if there had been such a medieval platform. It is more likely that the platform was made up, like a sampler, of pieces of Plain Mosaic and loose tiles discovered during clearance of the church in Aislalie's time and afterwards.

Elsewhere in the presbytery 6" (150mm) square Plain-glazed or worn tiles were uncovered in the Chapel of Nine Altars (Walbran 1846, 11; 1876, 146). These may have been the same tiles as those Walbran later described as the few late medieval types near the south door of the Chapel (1854, 55–6). Walbran had expected to find the remains of John of Kent's 'painted pavement' in this area (a medieval reference to the installation of what might have been a mosaic pavement, see further under *Dating* below), and his disappointment showed in the second of his excavation reports, which emphasised the destruction wrought by Aislalie in the church (1854, 55–60). By 1876, when Reeve was drawing the locations of the tiles in the church, there were tiles next to the south door of the Chapel of Nine Altars and also next to a break in the wall on the north side (effectively a post-medieval doorway to the ruined church). Worn tiles of several sizes, probably Plain-glazed types, remain in these locations today (Table 27.1 and Fig 27.10). It is possible that these were re-set as found by Walbran, and reflected their earlier settings, but it is also possible that they were placed in these locations because of the extra wear suffered in entrances. In Walbran's time Fountains was a popular visitor attraction. It is notable that there are also re-set tiles before the doorway from the south nave aisle to the cloister and inside the west door of the church.

The nave

Walbran proposed excavation in the church at Fountains following the discovery, in 1840, of 'a singular and early geometrical painted pavement' at some depth below the turf

near the door leading to the cloister. This was assumed to be the floor of a chapel (1846, 10). Both Walbran and, later, Hope, thought that the whole of the nave had been paved with Plain Mosaic but little evidence now remains to support this view (Hope 1900a, 310). Walbran does not make any specific mention of tiles in the nave, apart from those near the door to the east claustral walk, despite the whole of the church being excavated, or cleared of rubbish, in the winter of 1854 (1856, 73).

The patches of tiles shown on Reeve's 1876 plan remain largely unchanged today. There are now slightly fewer tiles in each of the patches, apart from in the areas inside the west door and those in the north transept, where the areas of tiling have been extended or altered (see further below). The mosaic arrangements in the fourth bay west of the pulpitum, on the north side, are inventions and include some later medieval Plain-glazed tiles. In some, but not all, cases the siting of the patches of tiles against the pillars corresponds to the sites of altars as deduced by Hope (1900a, 305–7). The tiles in the fourth bay west of the pulpitum, on the south side, have been re-set in a concrete plinth about 14cm above ground level. It is possible that this is intended to represent an altar pace (a step or small raised platform), and that it reflects the earlier use of the tiles. Elsewhere the tiles against the pier bases in the nave were re-set at present-day ground level.

The transepts and crossing

Elsewhere in the church Walbran mentioned fragments of Plain Mosaic in St Michael's chapel, the southernmost of the north transept chapels (1854, 59), and against the walls of the southernmost of the south transept chapels (1854, 60). These tiles were not recorded by Reeve. Those in St Michael's chapel were re-set as found, according to staff at the site, in the 20th

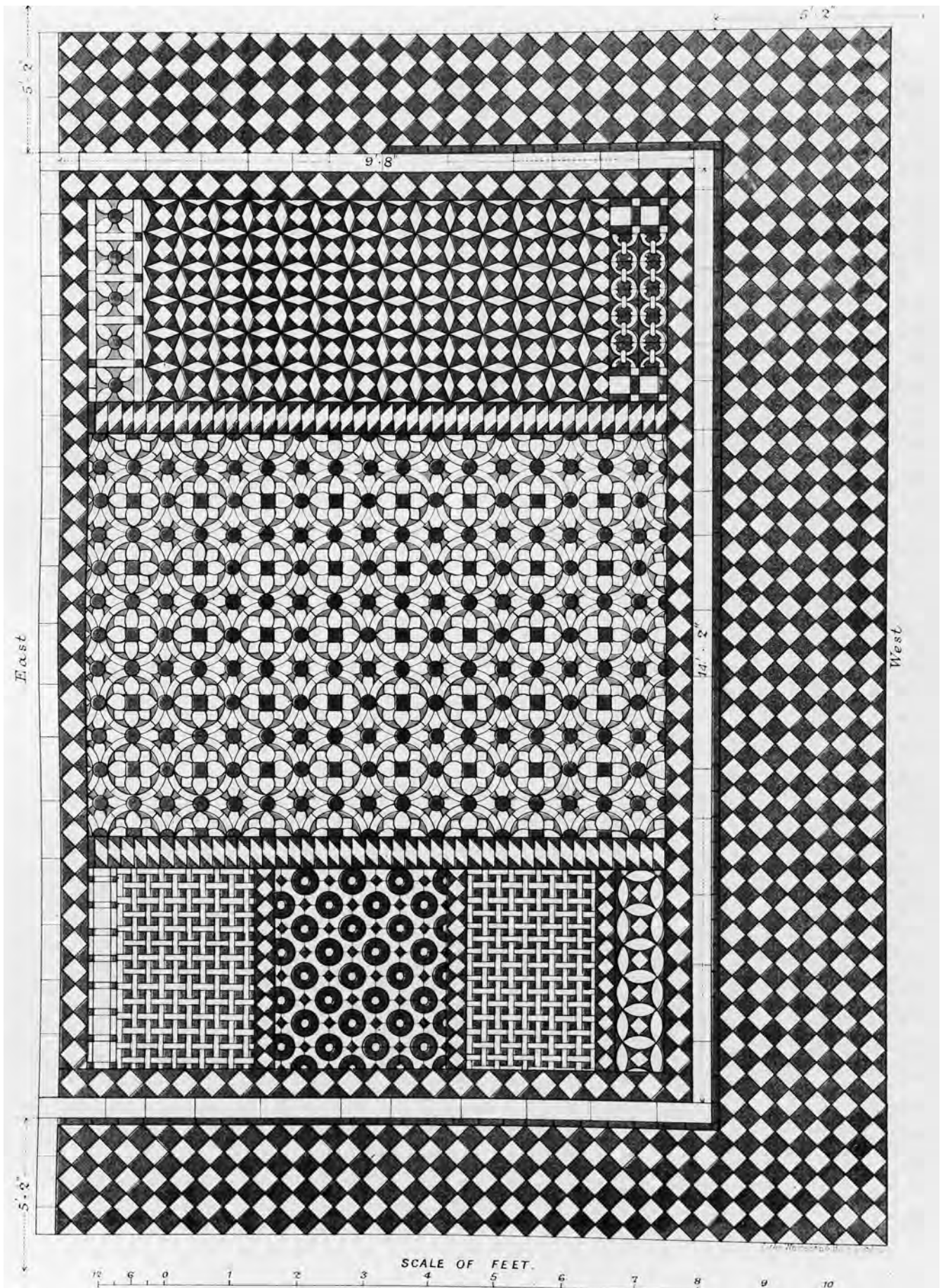


Fig 27.15: Plain Mosaic, Fountains Abbey, tiles re-set in the platform in the church as recorded by G.M. Hills 1871 (reproduced by permission of The Society of Antiquaries of London)

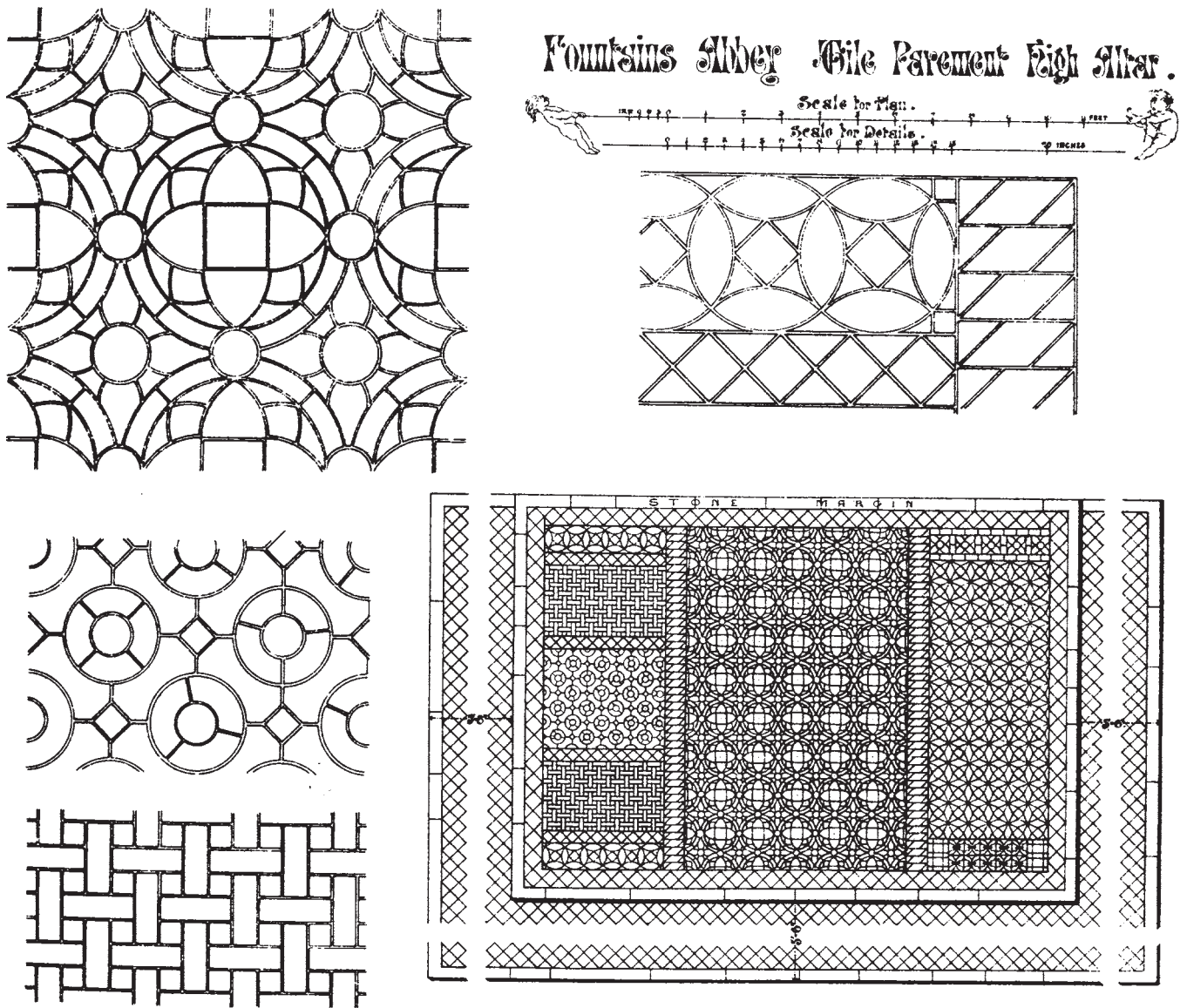


Fig 27.16: Plain Mosaic, Fountains Abbey, as recorded by J.B. Gass 1875

century. A few triangular tiles of the Plain Mosaic Group against the north wall in the south transept chapel remain set in medieval mortar. It seems that the tiles recorded by Reeve in the church were those that had already been re-set by 1876.

The Plain-glazed tiles in the body of the north transept are in better condition than any other tiles on the site. Some of those on the east side of the north transept are as shown by Reeve, but this patch of tiling does not now extend as far to the north as shown on his plan. On the west side there are now many more tiles than shown by Reeve, who only drew those between the west wall of the transept and the grave. A small-scale excavation carried out by English Heritage in c.1980 suggested that the additional tiles were not part of a medieval floor since the medieval floor in the north transept dips down from east to west. The excavator thought that the tiles on the east side had been re-set in their original positions, but that the medieval floor underlay the tiles now on the west side of the transept.

The only substantial recent excavations in the church at Fountains were carried out in 1979–80 in the south crossing aisle and south transept (Gilyard-Beer and Coppack 1986). Several patches of tiling were found, set in mortar, in both

the south transept and south crossing aisle (the largest intact area was in the crossing aisle and is shown in Fig 27.17). Considerable disturbance to the area had been caused by medieval graves and repair work and by modern lighting cables but it is clear that much of the tiling was of a single series and laid in a coherent manner. Most of the tiles were c.85mm squares of the Plain Mosaic Group, laid diagonally to the building. Those in Figure 27.17 flank a divider row of Plain Mosaic arrangement M.87. A few c.85mm square Plain Mosaic tiles, with the imprint of many more in the mortar bed, also remained in the transept (Gilyard-Beer and Coppack 1986, 161, fig 8). Again these were laid diagonally to the building, perhaps part of the same Plain Mosaic floor. The Plain Mosaic tiles in medieval mortar noted by Walbran in the southernmost of the south transept chapels were also found in the 1979 excavations. Other examples were found in the make-up of the altar platform and in the bedding of the chapel floor. A few Plain Mosaic shaped tiles and some tiles of later medieval date were found during the excavations but were not *in situ*. All the tiles of later medieval date were associated with disturbances from graves or 15th-century repair work (see further below).

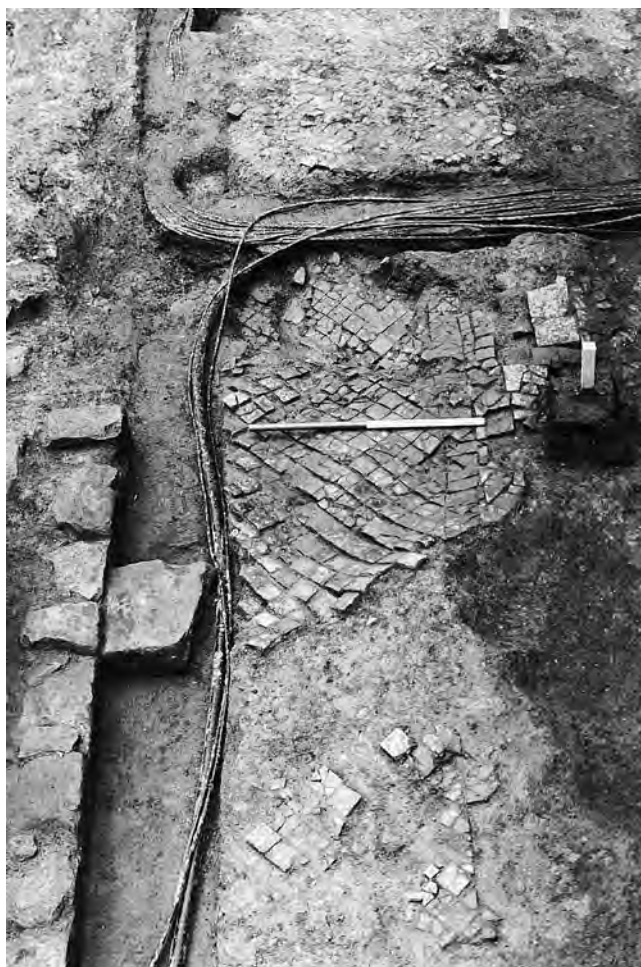


Fig 27.17: Plain Mosaic found in Fountains Abbey church, 1979-80: south crossing aisle (R. Gilyard-Beer and G. Coppack 1986. Photograph © G. Coppack)

It would appear, therefore, that Plain Mosaic flooring was found *in situ* in the south crossing aisle, the south transept and the southern transept chapel of the 13th-century church. The dating of the tiles at Fountains is discussed below but complications relating to the archaeological evidence for the date of Plain Mosaic at this site should also be noted here. A single tile of Plain Mosaic type, c.85mm square with a scooped key, was found among dumped material under a stone altar base, in what was interpreted as the south-east transept of the first stone church (Gilyard-Beer and Coppack 1986, 170, fig 12, no. 1). This tile was apparently identical to Plain Mosaic tiles found in later contexts in the south transept chapels and the crossing aisle, and to those in the loose collection and re-set elsewhere on the site. It would, therefore, suggest an earlier 12th century date for the first use of Plain Mosaic at this site, with extensive re-use of these tiles in the 13th-century building. Such an early date for the Plain Mosaic tiling at Fountains may be untenable (discussed further under *Dating*, below).

The only independent dating for the Plain Mosaic floor in the south transept comes from a coin minted between 1457 and 1468 found in the mortar bed. The precise find-spot for this coin is not known but it shows that at least part of this floor was re-set or repaired in the later 15th or earlier 16th century. Repairs carried out in c.1500 were identified in the excavations. Some decorated tiles were found in a repair which had involved the insertion of a supporting arch, a box

drain and soakaway into the south presbytery aisle (designs 1.9, 3.1, 3.4 and 25.9). This was built on a wooden foundation raft which was tiled over, the tiles almost certainly being re-used in this location. The supporting arch bears Abbot Huby's initials and arms and the box drain and soakaway were dated by two coins of Henry VII, one minted between c.1494 and 1501, and the other before 1501 (Gilyard-Beer and Coppack 1986, 162 and 171). Tiles of design 3.1 and 3.4 were found in Walbran's backfilling of one of the graves. Other tiles found associated with late medieval alterations were of designs 23.36, 24.26/24.27, 25.12 and Un/16, or were Plain-glazed tiles (140mm and 113mm squares).

Conclusions on the provenance of tiles to the church

It is not now possible to say how many of the re-set tiles are near their original locations. It is probable that the high altar platform, constructed before Walbran's time, is a composite piece made out of Plain Mosaic tiling found at Fountains. Tiled areas in doorways might be thought particularly likely to have been re-located. However, it is notable that Plain Mosaic and late medieval tiles are rarely re-set together, only occurring together in one area. Perhaps this shows that the re-set pieces of paving retain some of the integrity of their original setting. The restricted number of tile groups represented in the assemblage from the church is also notable. Walbran remarked on the very small number of late medieval patterned tiles found loose in the church (1856, 98) and, as noted above, the only patterned tiles from the recent excavations were associated with late medieval works. It seems unlikely that there had ever been a large-scale floor of patterned tiles in the church at Fountains. Plain Mosaic tiling may have originally been laid through much of the east end of the church, perhaps subsequently replaced by Plain-glazed tiles in the presbytery and north transept and re-used in chapels set up in the nave.

Tiles found elsewhere on the site

Chapter house

The *Gentleman's Magazine* report on the clearance of the chapter house in 1790-1 suggested that Plain Mosaic paving was found in this location (Verax 1791) and this is supported by Hope's note that the chapter house was paved with c.90mm tiles (1900a, 343). Until recently ten tiles, and the mortar setting for a further three, flanked the two long sides of a grave slab in the centre of the chapter house. These tiles could either be large Plain Mosaic squares, or plain examples of the Inlaid series. The single scooped key, typical of tiles of both these groups, was clearly visible in the mortar settings of the absent examples. Patterned tiles of the Inlaid Group are, however, unknown at Fountains, and it is more likely that these tiles were Plain Mosaic squares. Walbran also mentions finding a tile with a design of 'a monstrous animal' in the chapter house (1851, 291) although there is nothing to suggest that this was *in situ*.

Area of the infirmary

The infirmary at Fountains had been quarried for stone following the Dissolution but then remained largely untouched until Walbran's excavations uncovered a pavement of Huby/Percy tiles in the mid 19th century (Walbran 1856, 95). In 1936, the turf covering this floor was again removed, this time by Office of Works officials, with the aim of re-setting the tiles for public view. The report made at the time suggested that the tiles, which were of the Huby/Percy Group, were on their original bed. Photographs taken when

the pavement had been re-set are now only known on a photocopy, although it is possible that the prints do still exist. A plan of the floor is shown in Figure 27.11. Of all the patches of re-set tiles at Fountains, these are the most likely to be in their original location. Walbran noted that, although the floor retained a coherent layout in general, the individual tile designs were laid in a haphazard manner (1856, 98–9). A few years ago tiles of several designs were recognisable (designs 24.18, 24.26, 24.27, 24.30, 24.33, possibly 24.8 and probably some of the 4-tile set made up of designs 24.1–24.4). The whole pavement is now in a very poor condition with few traces of decoration remaining. Walbran also found some tiles on a dais raised two feet above the level of the infirmary hall, near the staircase (1851, 279).

Most of the rest of the tiles found by Walbran were ‘detached among the rubbish’ (1851, 286). He was uncertain whether or not Plain Mosaic tiles in the passage on the west side of the infirmary hall, between the infirmary and the misericord, were *in situ*. A small excavation was carried out in the passageway in 1992 (Wilson 1992, unpublished report). The tiles found were worn and of a variety of types, including a single fragment of design 24.33. The excavator did not think that they were set in any kind of bedding although the deposits beneath the tiles were not investigated.

Walbran came across late medieval paving in the misericord (1851, 283) but no tiles now remain here. The misericord (or meat dining room) was described by Hope as having a narrow ledge or platform paved with small tiles set against the west wall (1900a, 331). The room was thought to have been re-arranged during the abbacy of Marmaduke Huby (c.1500).

Muniment room or court room

Many of the tiles found loose during Walbran’s excavations were re-laid by him in the muniment or court room, above the warming room, in the south east corner of the cloister (Walbran 1856, fn. 92). This room was subsequently used as a workshop and the floor is now extremely worn. It contains the only extant example of design 25.4 and a complete example of the circular arrangement made up of Transpennine Group designs 23.12, 23.13 and 23.17 (Fig 27.12).

Monks’ dormitory

The west wall of the monks’ dormitory survives to a few courses at its west end and contains recesses for windows. In Hope’s time the northernmost recess was paved with ‘green glazed tiles’ but there are now no tiles at this location (1900a, 353).

Wool house

Tiles of several types were found in 1977–8 during excavations of an outer court building at Fountains that was interpreted as the wool house (Coppack 1986b). Few of them were found in place, apart from some plain tiles laid in an irregular manner on a dais in an office added to the east side of the main building in the 14th or early 15th century (Coppack 1986b, 61). The excavator suggested that the number of tiles found might indicate that part of one of the upper floors of the building had been paved. The tiles from this excavation included Plain Mosaic, straight-sided mosaic tiles of Group 3, decorated tiles of Group 25 and the Huby/Percy Group and three sizes of Plain-glazed tile (squares of 115 and 135mm, rectangles of 230 × 130mm). The mixture of tile types suggested that the tiles were re-used in this building.

Dating: Plain Mosaic

There is conflicting evidence for the dating of the Plain Mosaic Group at Fountains. The documentary evidence suggests a date between 1220 and 1247, during the abbacy of John of Kent. Some archaeological evidence, on the other hand, argues for a date before the middle of the 12th century.

The archaeological evidence, which has been discussed above, relies upon a single Plain Mosaic tile found underneath a stone altar base thought to have been constructed in c.1146–7 (Gilyard-Beer and Coppack 1986, 156, 173, figs 3 and 4). The tile under the altar was in dumped material, which would suggest that it had been used in an earlier floor.

The documentary evidence depends upon an addition to the *Narratio* or foundation history of Fountains Abbey. The *Narratio de Fundatione Monasterii de Fontibus* was most recently published in *Memorials I* in 1863 and was discussed in detail by L.D.G. Baker in 1969 and 1975. The addition was made to the text recording details of the building works of John of Kent.¹ It states that a ‘painted pavement was added to the new work’ and suggests that a decorative pavement was part of a major building programme carried out during the abbacy of John of Kent. If this reference were to a Plain Mosaic pavement, it would imply a date for this flooring between 1220 and 1247.

The only record of the addition was made by Leland, probably from a manuscript he saw in Ripon in 1541 (Leland 1770; Chandler 1993). The precise date and circumstances of the addition are not known. Walbran felt that this was, in fact, a second addition to the *Narratio* but, in Baker’s view, it was the only addition, probably added to the *Narratio* soon after the succession of Stephen of Easton in 1247 (L.D.G. Baker 1969, 39).

It is impossible ever to be entirely certain that documentary references and archaeological artefacts are one and the same. The wording of the addition to the *Narratio* could be interpreted as applying to a floor other than a ceramic tile floor, perhaps one made of coloured stone. The absence of tiling before the altar at Jervaulx Abbey prompted Shaw to suggest that some elaborate stone pavement might have been laid in this position at that site (Shaw 1858). There are, also, no re-set tiles before the high altars at either Byland or Rievaulx Abbeys. Cosmatesque paving is the most obvious possible candidate and a Cosmatesque pavement laid before the altar of Westminster Abbey was completed in 1268 (Foster 1991, 2). This is later than the date suggested by the *Narratio* for Fountains, but Cosmatesque paving was being produced in Italy throughout the 13th century (Glass 1980). However, no evidence for such a pavement has survived at Fountains or the other sites and the substantial loose collection of Plain Mosaic tiles at Fountains shows that there certainly were large areas of elaborate and high quality ceramic mosaic paving. The strong yellow and green colours of unworn Plain Mosaic tiles and the glazing process might be thought more consistent with the description ‘painted’ pavement than a Cosmatesque floor. The tiles have also been found *in situ* in the crossing, the south transept, the south

1 *Memorials I*, 129: ‘Successit in abbatia Fontium, Joannes de Cantia, qui novam basilicam consummavit, et altaria novem instituit. Addidit et novo operi pictum pavimentum, Claustrum novum construxit, et Infirmitorium. Porro xenodochium pauperum, sicut hactenus cernitur, venustissime fabricavit in introitu primae areae versus austrum. Praefuit Fontibus 28 annis. Successit Joanni, Stephanus de Eston, abbas Novi monasterii.’

transept chapel and in St Michael's chapel in the north transept – all areas that can be interpreted as contemporary with the rebuilding of the east end in the earlier 13th century.

Such an interpretation accords with evidence for the date of Plain Mosaic at other sites in the region. In order to accommodate an early 12th century date one would have to argue that there was massive re-use of Plain Mosaic paving later on. As it is unlikely that re-used tiles would be the documented 'painted pavement in the new work', one would also have to take the view that this reference was to something other than ceramic tiling, of which no trace now remains. All this is possible, but it seems more likely that there was some undetected disturbance to the dump under the alter in which the Plain Mosaic tile was found, perhaps caused by the many subsequent alterations and excavations.

Dating: Huby/Percy Group

The Huby/Percy paving in the infirmary is assumed to be part of the alterations to the building carried out from the 14th century onwards. These included the installation of fireplaces, the insertion of the staircase and the division of the hall into a number of apartments (Hope 1900, 278, 321).

Dating: other tiles

Several of the decorated tiles at Fountains are unknown at other sites in the region. Typologically, most of these would

date to the later 14th or 15th centuries. The only other indications of date come from the excavations in the south transept and the woolhouse (Gilyard-Beer and Coppack 1986; Coppack 1986b. Tiles of design 1.9, 3.1, 3.4 and 25.9 must pre-date the repair of c.1500 in the south presbytery aisle. A tile of design 25.3 was found in the woolhouse in a packed rubble floor belonging to the final phase of the smithy in the eastern aisle of the main building, thought to date to the mid-15th century. A tile of design 25.6, part of the same production group, was found in destruction levels in the same area.

The woolhouse office was constructed in the earlier 14th century, so the Plain-glazed tiles on the dais must be after that date. The Plain-glazed tiles in the north transept are only found in the southern bay of that transept, perhaps dating before the construction of Huby's tower in c.1500. Glyn Coppack (1993, 67) attributes these tiles to Abbot Greenwell, 1442–71.

30. FURNESS ABBEY, BARROW-IN-FURNESS, CUMBRIA, SD/218717 (Cistercian monks)

Tile groups, designs: Group 30, designs 30.1–30.4 (Fig 24.7).
Publications: Beck 1844; Hope 1900b; Jopling 1843; Ratcliffe and Noake forthcoming.

Extant tiles: On site: 22 tiles re-set as in Fig 27.18. The loose collection consists of 119 fragments and worn tiles held by English Heritage (EH/88092533; 88213050).

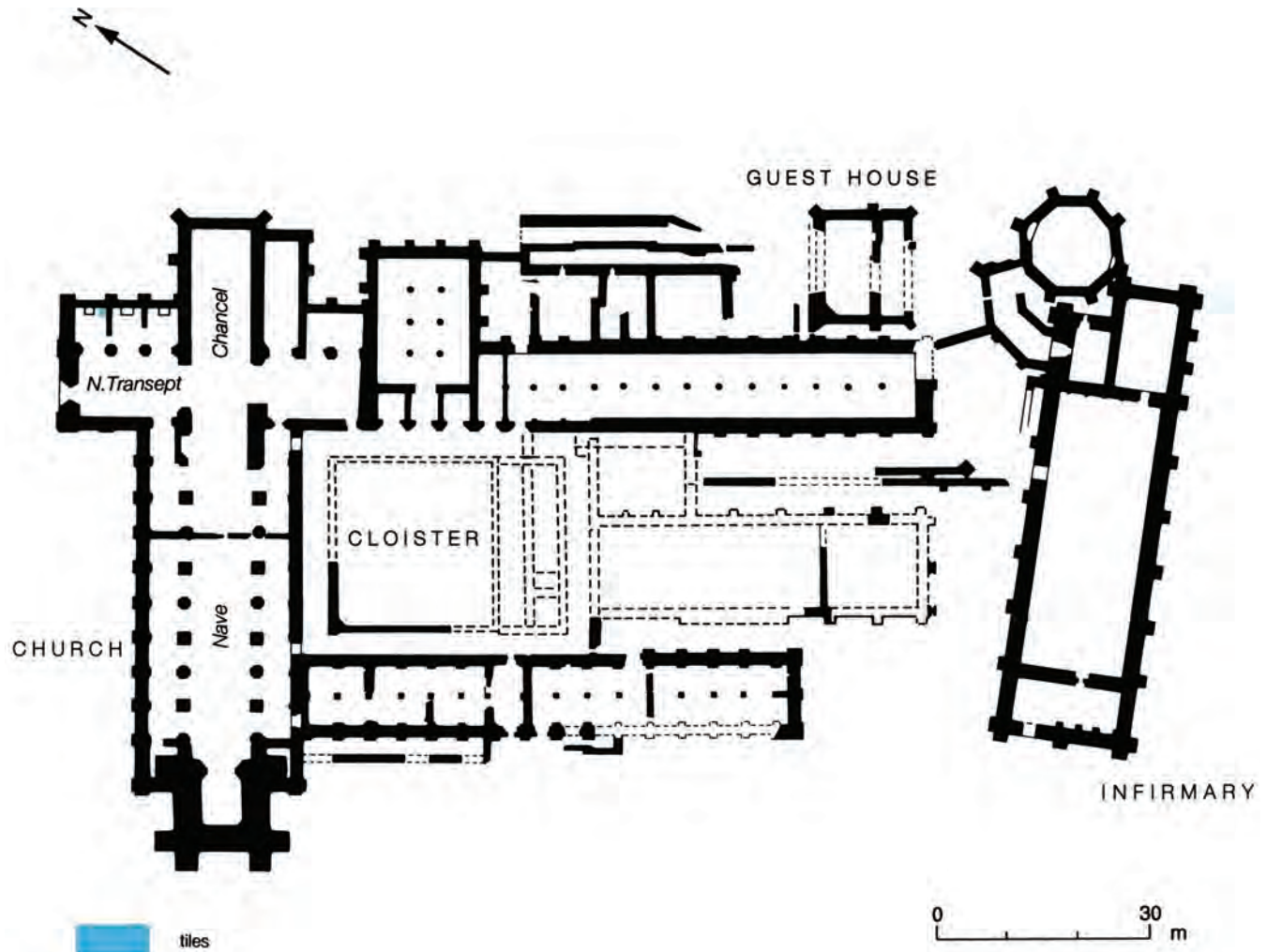


Fig 27.18: Furness Abbey showing the locations of re-set tiles

Assessment: The tiles re-set in the north transept chapel were noted by 19th-century writers who also recorded examples in other parts of the east end of the church. Both Jopling (1843, 121) and Beck (1844, 382) mention that the chancel had been paved with glazed tiles, and that a few could still be seen. Beck also noted that similar tiles were laid in the space below the chapel steps (1844, 384). These tiles were subsequently seen by Hope, who described the area below the north transept chapel steps as 'all of tile' (1900b, 241). Hope made no mention of ceramic tiles in the chancel, reporting only that two bands of stone flagging were found running across the presbytery, with a further area to the west. The flags were of the same size as those now in the two more southerly chapels of the north transept and, like them, were set diagonally to the axis of the church (1900b, 301). Large areas of a different type of stone paving remain in the nave, set on the same axis as the church.

Dating: The eastern arm of the church at Furness was rebuilt in the late 15th century, as was the east wall and windows of the north transept. As the tiles were also found in these locations, they might date after this reconstruction work, although re-use is also possible.

31. GISBOROUGH PRIORY, TEESSIDE, NZ/618163 (at Guisborough; Augustinian canons)

Tile groups, designs, shapes:

Plain Mosaic, designs 1.1, 1.2, 1.5–7. Shapes 2, 3, 4, 7, 12–13, 34, 36, 43, 46–8, 54, 58, 98, 104, 110, 117, 129, 138, 144, 156, 163–4, 166–7, 176, 237, 244, 280, 308, 358, 375, 388, 358 (Figs 10.14, 10.15, 10.18).

Inlaid, designs 4.2, 4.4, 4.7 (Fig 12.2).

Nottinghamshire, designs Wh/30, Wh/42, Wh/50, Wh/52, Wh/74, Wh/90, Wh/101, Wh/105, Wh/110, Wh/120, Wh/135 (Figs 18.1, 18.2).

Plain-glazed.

Doubtful provenance: **Decorated Mosaic**, design 7.78.

Publications: Anon 1867; Bruce 1868; Eames 1980, 128; Heslop 1995; Knight and Keen 1977; Ord 1846.

Other records: Brook c.1921–36, no. 152.

Extant tiles: On site: Plain Mosaic tiles were re-set in c.1980 around the font at the west end of the south aisle of St Nicholas' parish church, which stands next to the priory ruins (Fig 10.18).

Dorman Museum, Middlesbrough: one Nottinghamshire tile (1931/35/33).

English Heritage: c.1565 tiles/30 boxes of Plain Mosaic, 90 tiles/4 boxes Plain-glazed tiles, 24 Inlaid, three Nottinghamshire fragments (EH/88074053–88074073; 88074075–88074079; 88074082; 88074084–88074085; 88074087–88074088; 88213462–88213464).

Margrove Heritage Centre, Saltburn by the Sea: nine tiles.

Tees Archaeology, Hartlepool/Kirkleatham Old Hall Museum: 33 Plain Mosaic, 12 Inlaid, three Nottinghamshire and 11 Plain-glazed.

Yorkshire Museum: one Nottinghamshire tile (Brook/152).

Assessment: The tile in the Yorkshire Museum is the sole extant example from excavations carried out in c.1867. The tiles held by English Heritage came from unrecorded excavations in 1932 and in the 1950s. Material with Tees Archaeology/Kirkleatham Old Hall Museum is from excavations carried out in 1985/6. The tiles in Margrove Heritage Centre and the Dorman Museum are also thought to come from the 1985 excavations.

In 1867, a trench was opened across the church, about 200' (60m) from the east window, at the instigation of

Captain T. Challoner, the owner of the site (Anon 1867; Bruce 1868, 248). This would be on the west side of the crossing. Portions of the central tower were found where they had fallen, about 170' (51m) from the east window, as were the remains of a doorway thought to be that leading to the cloister. The trench was about 3' (0.9m) deep and, according to the *Building News*, did not go down to 'the original floor of the abbey church'. Tiles of various types and dates were discovered and those with heraldic designs described. 'A lion rampant crowned, the figure of a bell appearing above and on each side of the shield' is likely to be the Nottinghamshire design Wh/30. An heraldic tile of the Nottinghamshire design Wh/50 was presented by Admiral Challoner to the YPS in 1878 and this is the tile that remains in the Yorkshire Museum (Brook/152).

The description of other tiles as 'Early English', and 'from a tessellated floor', might refer to Plain Mosaic. Excavations by Tees Archaeology in 1985/6 recovered a few Plain Mosaic and Plain-glazed tiles from the west end of the church, but none was *in situ* and a plaster floor appears to have been in use in this area (Heslop 1987; 1995).

Dating: The site was founded in 1119. The heraldic tiles were said to have overlain a grave in the chancel by a few inches, and not to have been part of the original church floor, suggesting a later medieval date.

32. GREAT MITTON, NR WHALLEY, LANCS: ALL HALLOWS' CHURCH, SD/716389

Tile groups, designs: No medieval tiles of northern series.

Publications: Ackerley 1947, 51.

Extant tiles: The tiles set in the altar platform may be medieval, perhaps an antiquarian collection.

Assessment: Ackerley recorded that the nave and chancel were tiled in 1845, having previously been flagged with stone. He noted that some of the tiles were 19th-century copies but that those on the altar platform were 'old and good' and must have been obtained from another church. Before finding this reference I had seen the tiles in the church and recorded that they were copies, noting that those on the altar platform were of 'extremely high quality'. They are re-set so the sides and backs of the tiles are not in view. Their designs are very regular and they are entirely unworn, although they are much more similar to medieval than Victorian examples. They are also made up of a wide range of types, with some like 13th-century Wessex tiles and others like 16th-century Gloucestershire material. However, Ackerley is a generally sound source. If these tiles are original, they may have been part of an antiquarian collection.

Dating: The tiles were set in this location when the church was restored in c.1845.

33. GRIMSBY, NE LINCS, TA/270094

Tile groups, designs: **Unallocated**, design Un/6 (Fig 25.4).

Publications: None.

Extant tiles: North Lincolnshire Museums Service: one tile (N186.20.21).

Assessment: Found during a watching brief by Humber Archaeology Partnership in Grimsby, c.1990.

Dating: None.

34. HABROUGH MANOR, NE LINCS, TA/156142

Tile groups, designs:

Decorated Mosaic, designs 7.142, R7.158 (Fig 14.1i).

Publications: Nenck *et al.* 1992.

Extant tiles: North Lincolnshire Museums Service, Scunthorpe: three fragments.

Assessment: The tiles were found during excavations by Humber Archaeology Partnership in the upper fill of the moat ditch and in a large clay pit, backfilled in c.1610. It is thought the site was used for pottery production after this date.

Dating: The manor was moated in the 1240s or 1250s and used until c.1610.

35. HARTLEPOOL, TEESSIDE: FRANCISCAN FRIARY, NZ/529338

Tile groups, designs: **Plain-glazed.**

Publications: Daniels 1986, 269, 281–2.

Extant tiles: Hartlepool Museum Services: ten examples.

Assessment: Over 1500 floor tiles/fragments were found by Cleveland County Archaeology Section in 1982–3 during excavations within the walls of the developed church. Patches of tiling were found *in situ*, mainly around the bases of the walls, with the two largest areas against the north and south walls towards the west end of the church. Some areas of mortar bedding had tile impressions. The excavator considered it likely that the whole of the church had been paved. Tiles were found in some of the graves in the church, probably as a result of disturbing the floor to insert the burials.

Dating: No tiles were associated with the first known church, a simple rectangular building 35.5 × c.8m internally, of c.1240. The tiled floor was laid in the enlarged church. On architectural grounds, this was completed by 1300, providing a *terminus post quem* for the date of the tiles. Some of the graves with tiles in the fill were thought to be of 15th-century date (Daniels, pers. comm.). The tiles must date between construction and the insertion of these graves.

36. HARTLEPOOL, TEESSIDE: SOUTHGATE, NZ/525337

Tile groups, designs: **Plain-glazed.**

Publications: Young 1987, 47.

Extant tiles: Tees Archaeology: four fragments.

Assessment: The 19 fragments found during excavations in Dock Street in 1981–2 were thought to have arrived here as rubble in the 15th century. The area had been reclaimed in the 13th century following silting up of the quayside. The site was used for various industrial activities.

Dating: 15th century or earlier.

37. HEDON, E YORKS: ST AUGUSTINE'S CHURCH, TA/188287

Tile groups, designs: Probably **Plain-glazed.**

Publications: Boyle 1895, 131 and 144.

Extant tiles: None.

Assessment: Two records could refer to floor tiles in the church. An account of 1400–1 notes the purchase of half a hundred tiles for the altar of St Mary's chantry (for 2d). The chapel of St Mary was located on the south side of the chancel. A roll of c.1453 stated that Thomas Mone had the floor before the altar of the Holy Trinity, in the northern bay of the north transept, paved with Flanders stone (this could refer to brick or tile). Both these areas are now demolished and there are no medieval bricks or tiles in the floor of the church. However, Plain-glazed Victorian tiles were used in the restoration carried out by Street in c.1870 and these remain in the chancel and nave. These may be copies of a medieval floor. Street was also responsible for restoration work at Bolton Priory, and the Victorian tiles at Bolton are copies of medieval examples found on the site (see entry 12).

Dating: 1400–1 and 1453.

38. HELMSLEY CASTLE, N YORKS, SE/612837

Tile groups, designs, shapes:

Plain Mosaic, shapes 3, 4, 17, 34, 36, 43, 46, 48, 54, 56, 58, 60, 117, 156, 163–4, 169, 175–6, 214, 220, 284, 353, 379, ?103, ?268, ?346 (Fig 10.14).

Inlaid, a piece of clay stamped twice with design 4.7 (Fig 12.2).

Publications: None.

Extant tiles: English Heritage: c.448 tiles (EH/81003058, 81003059, 81003060, 81003061, 81003062, 81003063).

Assessment: The tiles came into English Heritage care from clearance excavations in c.1930. At first sight it might be thought that the tiles were re-used here from Rievaulx Abbey following the Dissolution of that monastery in 1538/9. The castle is only about 5km from Rievaulx and it is thought the chapel, where some of the tiles were found, was converted into part of the kitchens for the mansion in the 16th century (Peers 1966). However, the substantial assemblage suggests that re-use is unlikely in this case. All the tiles, apart from the trial piece, are of the Plain Mosaic Group and many of them are shaped tiles. Shaped tiles would be difficult to re-lay in a coherent manner and would probably not have been re-used in a kitchen, particularly given the large quantities of square tiles available at Rievaulx. With the whole assemblage of Rievaulx tiles at their disposal, it is unlikely that a single series, and one with a high proportion of shaped tiles, would be re-used to pave a kitchen. It is more probable that the tiles were from an original floor in the chapel or elsewhere on the site.

Unusually, the clearance records list part of an early type series for the tiles and there is a note that some examples were recovered from the lower floor of the Tudor mansion. Also unusually, a few of the bags containing the tiles were labelled 'chapel' or 'provenanced to the chapel'. Possibly the type series had been established before the 1930s clearance and the tiles were stored in the mansion having been found in the chapel.

Dating: The consecration of the castle chapel was documented in 1246 (Peers 1966). The site is thought to have fallen into disrepair by the 15th century.

39. HELMSLEY, N YORKS: CANON'S GARTH, SE/613839

Tile groups, designs, shapes:

Plain Mosaic, mainly c.75mm squares.

Inlaid, design 4.9 (Fig 12.2).

Publications: McDonnell 1963, 106.

Extant tiles: On site: tiles are re-set in the floor of the chapel and on either side of an inglenook fireplace in one of the reception rooms.

Assessment: Canon's Garth is a half-timbered vicarage of 13th century date (timber of 1268) located next to the parish church. It was substantially renovated and partly rebuilt in 1889. There is no evidence for the origin of the medieval tiles but they are reputed to have come from nearby Rievaulx Abbey as part of the restoration.

Dating: None.

40. HEXHAM ABBEY, NORTHUMBERLAND, NZ/935642 (previously Priory; Augustinian canons)

Tile groups, designs: **Plain-glazed.**

Publications: Hodges and Gibson 1919.

Other records: E.C. Norton note.

Extant tiles: None.

Assessment: A single tile was recorded in 1919 as the only example found at this site. It is no longer extant but is

described as having a yellow glaze, red fabric and measuring c.112mm across and 25mm deep. More recently, this tile was seen by Christopher Norton who recorded that it was of Standard Plain-glazed type.

Dating: None.

41. HOLM CULTRAM ABBEY, ABBEYTOWN, CUMBRIA, NY/177507 (Cistercian monks)

Tile groups, designs, shapes:

Group 12, antiquarian record of designs 12.1–12.4 (Figs 17.1–17.3).

Group 13, design 13.1; shape S.58 and c.70mm squares, a possible line-impressed arrangement (Fig 17.4). Mosaic arrangements M.25, M.36 and 50mm square tiles laid out in the form of a cross were all recorded by antiquarians (Figs 17.2, 17.4–17.5).

Group 14, antiquarian record of line-impressed mosaic (Fig 17.5)

Group 28, design 28.1 (Fig 24.4).

Publications: Gilbanks and Oldfield 1900; Hodgson 1907.

Extant tiles: On site: two line impressed square tiles of design 28.1 and two plain tiles of similar type have recently been re-set into a low wall, facing west, on the south side of the chancel step of the present church (which uses the first six bays of the old nave). Twenty 70mm square plain or worn tiles are re-set in the return of this wall, and its opposite number on the north side, facing one another across the chancel. The tiles on the north side include one hexagonal tile (S.58) faintly decorated with the Group 13 design 13.1 (Fig 17.4).

Tullie House Museum, Carlisle: one tile of Group 13, accessioned in 1876 (1997.325.45, Ferguson collection).

Assessment: The provenance of the extant tiles to Cultram Abbey is supported by the antiquarian records. The use of hexagonal tiles was recorded by Gilbanks and Oldfield, who also published a sketch of design 28.1 and some line impressed mosaic not represented in the extant collection (see Fig 17.5). The tiles of design 28.1 were later noted by Hodgson to have been found on the north side of the north choir aisle doorway but had been moved to the present church's porch by 1906.

Other paving found next to the north choir aisle doorway during alteration work in 1906 was also recorded by Hodgson (Figs 17.2–17.3). It was worn and abraded but appears to have been made up of undecorated mosaic arrangements and a patch of square two-colour tiles of several patterns. The various records of tiles from Holm Cultram have been loosely assigned to four different tile groups on typological grounds.

Dating: None.

42. HOWDEN, E YORKS: BISHOP'S PALACE, SE/748282

Tile groups, designs: **Plain-glazed.**

Publications: None.

Other records: Whitwell 1984.

Extant tiles: Humber Archaeology Partnership: 23 tiles and fragments (HWN84); tiles reburied *in situ*.

Assessment: An area of paving, c.0.8m², was found *in situ* at the base of the stair well in a square tower outside the north-east corner of the aisled hall. The tiles, recorded as 10" (250mm) across, were not taken up. The extant sample is of fragments found in other contexts, the greatest incomplete dimension being 135mm. It is not certain, therefore, that these Plain-glazed fragments are the same as those in the stair well.

Dating: The paving in the tower must pre-date the construction of the new hall in c.1400.

43. HULL, E YORKS: AUGUSTINIAN FRIARY, TA/102285

Tile groups, designs:

Nottinghamshire, not fully recorded.

Transpennine, designs 23.20, 23.26 (Fig 22.1).

Publications: Stevenson 1907–8.

Extant tiles: Several boxes of floor tiles, mainly of Nottinghamshire types, were recovered during excavations in 1994 by the Humber Archaeology Partnership.

Assessment: Post-excavation work on the extant assemblage has yet to be completed. However, the substantial assemblage included some good quality examples and could be used as the starting point for a review of the whole Nottinghamshire tile group. Stevenson's publication of tiles in the Wilberforce Museum collection attributed Nottinghamshire designs Wh/70a and Wh/74 or similar to this site. These examples are now lost.

Dating: Royal licence was granted for the foundation in 1317 (Midmer 1979, 182). Contextual information is being processed.

44. HULL, E YORKS: BLANKET ROW, TA/099283

Tile groups, designs:

Nottinghamshire, design Wh/100 (Figs 18.1a, 18.2).

Plain-glazed.

Publications: None.

Other records: Stopford 2001.

Extant tiles: 271 tiles/fragments recovered in excavations by Northern Archaeological Associates in 1998.

Assessment: The tiles were found during excavations in an area of domestic housing and industry. Post-excavation work is in progress. Most of the substantial Plain-glazed assemblage was found in a single dump and may have previously formed a floor in a nearby building. The Nottinghamshire tile was a stray find.

Dating: Initial assessment suggests that the Plain-glazed tiles were discarded in the 16th century.

45. HULL, E YORKS: HOLY TRINITY CHURCH, TA/100285

Tile groups, designs:

Nottinghamshire, designs Wh/110, Wh/120, Wh/127, Wh/131, Wh/133, Wh/136, variation on Wh/29 (Figs 18.1, 18.2).

Publications: Boyle 1890; Hadley 1788; Sheahan 1864, 457; Stevenson 1907–8.

Extant tiles: Re-set: twelve tiles and six fragments of six different designs (Wh/110, Wh/127, Wh/131, Wh/133, Wh/136, variation on Wh/29) are cemented into the piscina sill in the wall of the south aisle at the east end.

Hull and East Riding Museum: some heavily restored tiles in the collection probably include examples which came from Holy Trinity Church but they cannot now be identified individually.

Assessment: The remains of a tiled floor in the chancel of the church, which included heraldic designs, was described by Hadley in 1788. The medieval tiled floor, with some heraldic designs, is not to be confused with the 17th and 18th century armorial 'ledger stones' discussed in the Victoria County History and elsewhere (Ingram 1969, 292). By 1864, when Sheahan was writing, the tiled floor had disappeared. However, Nottinghamshire Group tiles were found during restoration work by Gilbert Scott in the 1860s. By 1890 some tiles from the chancel floor had been cemented into the piscina sill in the opening to Eland's chantry (Boyle 1890). Other tiles from Holy Trinity Church, including

examples found in restoration work of 1907, were given to the Historical Museum, Wilberforce House, Hull. These were listed and drawn by Stevenson (1907–8) but lost during the Second World War. The examples that Stevenson noted as from excavations under the tower in Holy Trinity Church at the time he was writing, must be considered safely provenanced. Some of his other attributions, particularly the Nottinghamshire tiles said to be from Kirkstall and Meaux Abbeys, were probably incorrect.

Dating: The early writers dated the pavement on the basis of the heraldic tile designs to the reigns of the first three Edwards (i.e. 1216–1377). The arms of the earls of Lancaster, Leicester and Derby were represented, as well as those of ‘several other contributors to the fabric’ (Sheahan 1864, 374–5). The construction of the brick-built chancel is thought to date c.1320–70 (Ingram 1969, 290–1). The tiled floor would presumably have post-dated the construction work and might therefore date from c.1370.

46. HULL, E YORKS: MANOR ALLEY, TA/101287

Tile groups, designs: **Group 16**, designs 16.1–16.8 (Fig 19.1).

Publications: Beulah 1931–4.

Extant tiles: Hull and East Riding Museum: eight tiles (142.1979).

Assessment: The tiles were found in old Manor Alley, Lowgate, opposite St Mary’s Church but were not *in situ*.

Dating: None.

47. HULL, E YORKS: OLD TOWN (HIGH STREET/BLACKFRIARGATE/MONKGATE/MYTONGATE), TA/095285

Tile groups, designs:

Nottinghamshire, designs 15.2, Wh/38, Wh/50, Wh/59, Wh/63, Wh/73, Wh/80, Wh/86, Wh/101, Wh/120, Wh/133, Wh/135, Wh/144 and variations on Wh/29. Possibly Wh/100 (Figs 18.1, 18.2).

Group 18, designs 18.1, 18.2 (Fig 19.3).

Huby/Percy, designs 24.26, 24.27, 24.31 (Fig 23.1).

Plain-glazed.

Unallocated, design Un/5, two wasters (Fig 25.4).

Publications: Sheppard 1908–9; Watkins 1987; 1993.

Other records: Watkins 1979.

Extant tiles: Excavations at various sites in Hull by Humber Archaeology Partnership have recovered about thirty Nottinghamshire Group tiles/fragments, the Group 18 designs 18.1 and 18.2, the Huby/Percy tile of design 24.31 and two wasters that are not assigned to a group. Also found were 194 Plain-glazed tiles of three sizes, with five examples of a Non-Standard type (see Chapter 19). Four of the Non-Standard Plain-glazed examples, the Group 18 designs 18.1 and 18.2 and the wasters are now lost but were published in Watkins 1987. Most of the rest of the excavated assemblage is in Hull and East Riding Museum, together with the four Huby/Percy tiles from the High Street, published by Sheppard (1908–9; designs 24.26 and 24.27).

Assessment: The Huby/Percy tiles published by Sheppard were discovered during preparatory work for the construction of a new warehouse (1908–9). None of the recently excavated material was found in a medieval floor but several of the tiles were in medieval contexts.

Dating: Many of the recently excavated tiles were from unstratified, disturbed or broadly dated contexts but in several cases a *terminus ante quem* was established. A complete example of the variation on Wh/29 was found in a context dated 1320–1347 (Watkins 1993). The Non-Standard Plain-glazed tiles were in use by the early/mid 14th century, and

the wasters were from early 14th century contexts (Watkins 1987). There is no dating evidence for the Huby/Percy tiles; the only recent find was unstratified (design 24.31 at Chapel Lane, Snaith, east of the High Street).

48. HULL, E YORKS: ROTENHERYNG, TA/102286

Tile groups, designs: **Plain-glazed.**

Publications: None.

Extant tiles: English Heritage, Beulah collection: EH/88092537.

Assessment: The tile is marked ‘Rotenheryng, De La Pole site, south of Grimsby Lane, Hull. June – 1972.’

Dating: None.

49. HULL, E YORKS: SUFFOLK PALACE, TA/100288

Tile groups, designs: **Group 16**, possibly design 16.7 (Fig 19.1).

Publications: None.

Extant tiles: English Heritage: EH/88092640.

Assessment: A worn tile in the Beulah collection is marked ‘Hull, Suffolk Palace’. The design is difficult to see.

Dating: None.

50. HYLTON CASTLE, NR SUNDERLAND, TYNE AND WEAR, NZ/358588

Tile groups, designs: **Plain-glazed.**

Publications: None.

Other records: Tyne and Wear Museums 1994.

Extant tiles: Tyne and Wear Museums Archaeology Section: 77 fragments/half tiles.

Assessment: The tiles were found during evaluation excavations in 1994. A resistivity survey of the terrace to the east of Hylton Castle showed that most of this area had once been built on and these buildings were interpreted as guest accommodation. The Plain-glazed tiles were found in a trench cut across the projected line of the southern wall of the building nearest Hylton Castle on this terrace. Most of the tiles were found in the demolition deposit (context 204) but two were *in situ* (context 215), abutting a large wall. The *in situ* tiles rested directly upon a thin layer of sand (context 213). Beneath the sand was a compressed layer of black fibrous silt. The excavation ceased at this point. The building was interpreted as a reception hall or dining area.

Dating: It is thought the building was constructed in the last decade of the 14th or early years of the 15th century and this provides a *terminus post quem* of c.1400 for the tiled floor. If the compressed silt layer beneath the *in situ* tiles was an earlier floor then the tiles were laid some time after this date. The generally unworn condition of the assemblage suggested a limited amount of use. The demolition date is not known but this area was used as a landscaped garden in the 18th century.

51. JARROW PRIORY, TYNE AND WEAR, NZ/339652 (Benedictine, cell of Durham from 1083)

Tile groups, designs: **Plain-glazed.**

Publications: None.

Extant tiles: Bede’s World, Jarrow: 49 tiles/fragments.

Assessment: The tiles were excavated from the site of St Paul’s monastery between 1963 and 1978.

Dating: Contextual information is being processed.

52. JERVAULX ABBEY, N YORKS, SE/162857 (Cistercian monks)

Tile groups, designs, shapes:

Decorated Mosaic, shaped-tile designs 7.1–5, 7.7–9, 7.11, 7.12, 7.14–17, 7.19–21, 7.23, 7.25, 7.27–29, 7.31, 7.34 (Figs 14.1–14.4).

Decorated Mosaic, square-tile designs 7.18, 7.76, 7.79–83, 7.85, R7.85, 7.86, 7.102, 7.115–19, 7.128, R7.128, 7.129, 7.130, 7.132, R7.132, 7.133, R7.133, 7.134, R7.134, 7.164, 7.167, R7.167, 7.168, 7.171–2, R7.172, 7.173, 7.174, R7.174, 7.176–79 (Figs 14.1, 14.9–14.11)

Decorated Mosaic, undecorated shapes 437–42, 445–8, 451 (Fig 14.14).

Plain-glazed.

Publications: Anon 1821b; Anon 1845; Eames 1980, 1, 131–3, 214; Franks 1853, 12; Hobson 1903, 13–16, A81–109, figs 5–6; Hope and Brakspear 1911; Longstaffe 1852; Shaw 1853; 1858.

Other records: Brayshaw c.1881; Ward 1845 (ref. 20, p.368).

Extant tiles: Re-set: square tiles of the Decorated Mosaic Group (c.75mm and c.112mm) are in the porch of Jervaulx Hall Hotel and in the rectangular, bamboo summer house at the rear of the hotel. Tiles of similar types, plus two shaped tiles (designs 7.3 and 7.4), are in the polygonal summer house in the far south-east (ecclesiastical) corner of the present abbey enclosure. The floor of what was the chancel of St Oswald's Church, Fulford, York, is paved with plain c.75mm squares from the site.

English Heritage (held temporarily): 313 tiles of Decorated Mosaic types, said to have come from a large heap of tile on site in the late 1970s or early 1980s; 306 plain or worn Decorated Mosaic squares and 22 Plain-glazed tiles recovered during excavations in 1984 in the chapter house.

English Heritage: eight tiles, Beulah collection (EH/88092531–2; 88092539; 88092541–2; 88092544; 88092579; 88092644).

British Museum: 32 tiles (BMC/11203–11235). Tiles listed by Eames as of uncertain provenance are of the Decorated Mosaic series and could be from the site (1980, BMC/11332–3.). BMC/2160, also uncertainly provenanced in the British Museum catalogue, is of a type not otherwise known from Jervaulx.

Yorkshire Museum: 18 tiles (1992.180–197).

Assessment: In the early years of the 19th century one of the piers in the ruined cloister of Jervaulx Abbey was accidentally uncovered and the owner, the Earl of Ailesbury, decided to identify the layout of the monastic buildings. Extensive clearance work was begun under the supervision of the Steward, John Claridge. It was soon discovered that 1–2m of the walls of the church were still standing, and that underneath the rubble in the church there remained 'a large portion' of the ceramic paving (Shaw 1858).

The date at which this work was carried out varies in different accounts but the floor of the church was exposed by 1807 when a Mr P.A. Reinagle was brought to Jervaulx from London to make measured drawings of the ruins and the tiled floor. The whereabouts of Reinagle's original drawings is not now known. However, a set of reconstruction drawings based on the originals were made by John Ward, rector of Wath (c.20km south-east of Jervaulx). These drawings are now in the Yorkshire Museum. They were put on display for the annual meeting of the Archaeological Institute, held in Winchester in 1845 and were lent to Henry Shaw for publication in 1852. Shaw acknowledged use of Ward's drawings, which he described as carefully made from the originals in the possession of the Marquess of Ailesbury but corrected using existing tiles. Shaw suggested that tracings were made of Reinagle's original drawings, which were at a reduced scale, and the tracings were converted to full-sized reconstructions using both the scales on some of the originals and information from some extant tiles. Although some slight

anomalies remain, this seems an accurate description of the work done by John Ward. The drawings he gave to the Yorkshire Museum show the Decorated Mosaic roundels at approximately their actual size (slightly smaller) and he donated a small collection of tiles from Jervaulx to the British Museum (Franks 1853, 12).

Ward's drawings include:

1. A scaled plan of the layout of the pavement in the church, also showing the chapter house and west range.
2. A larger scaled plan of the area under the crossing tower.
3. 1:1 drawings of four roundels, as published by Shaw (see below), with one additional centrepiece in which the letter tiles are replaced by design 7.32.
4. A reconstruction of the layout of the floor in the body of the church with panels of decorated square tiles arranged in diamond-shaped sets of 36, divided by lines of plain tiles.
5. Large-scale drawings of square tile designs (R=reversed colours from the Decorated Mosaic designs illustrated in Fig 14.1): 7.76 and R, 7.79–82, 7.85 and R, 7.102, 7.117 and R, 7.118 and R, 7.129, 7.132 and R, 7.133 and R, 7.134 and R, R7.164, 7.167, 7.168 and R, 7.171, R7.172, 7.173 and R, 7.174 and R, 7.176–78, and 6.17 (a Usefleet Group design).
6. Large-scale detail of central strip of flooring running from about half way down the nave, through the monks' choir, to the base of the presbytery steps, as reproduced by Shaw.
7. Various borders of square and triangular plain tiles.

Shaw's engravings were made from a selection of Ward's work. They excluded some of the detail, and sacrificed the scale, but contained only a few alterations:

1. A layout of the pavement in the church (with slight differences from Ward; Fig 14.6).
2. A roundel including the letter tiles E and C, with a border of 'red and black' tiles (called the 'EC' roundel here; Fig 14.4).
3. A roundel with letter tiles R and S (called the 'RS' roundel here; Fig 14.2).
4. A roundel with no letter tiles, the main part of which is a reversed version of (3) (designated 'NL'; Fig 14.3).
5. A much smaller roundel (Fig 14.5).
6. A panel of decorated square tiles, all dark on light, arranged in diamond shaped sets of 36, divided by lines of 'red and black' tiles (Fig 14.10, designs 7.79, 7.80, 7.85, 7.102, 7.116, R7.128, 7.129, 7.132, R7.133, R7.134, 7.161, 7.171, 7.172 or 7.174).
7. Four sets of four decorated tiles (Fig 14.11, designs 7.79, 7.81, 7.118, R7.172).
8. The detail of the central strip of tiling in the monks' choir (Fig 14.13).

Comparison and assessment of the antiquarian record with the Decorated Mosaic assemblage from all sites is given in Chapter 14. Discussion here is only concerned with establishing the authenticity of the record for Jervaulx. The main differences between these records and the extant assemblage from Jervaulx are as follows:

1. Square tile designs recorded by Ward but not extant at Jervaulx include: 6.17, 7.161, 7.176, 7.177 and 7.178. Design 6.17 is of the Usefleet Group which is not otherwise known at Jervaulx; this provenance may be incorrect.
2. Extant designs from the EC roundel are: 7.8, 7.9, 7.11, 7.15, 7.17, 7.23, 7.31, 7.34 and possibly design 7.12.

- For the RS roundel: 7.1–5, 7.7, 7.14, 7.16. For the NL roundel: 7.15, 7.19, 7.25. Design 7.32, in Ward's additional roundel centrepiece, is not extant from Jervaulx and there are no extant examples of the small roundel from this site. Design 7.18 is similar to the rectangular border shown by Ward and Shaw, but is in fact a shaped tile, and would have been used in an outer band of a larger roundel. Extant shaped-tile designs from Jervaulx, not illustrated by Ward or Shaw, are: 7.20, 7.21, 7.27, 7.28. Extant square-tile designs, not illustrated by Ward or Shaw in either colour-way, are: 7.83, 7.119 and 7.130.
3. The designs shown in Fig 14.13, the strip of flooring running through the centre of the choir, are not extant from Jervaulx, apart from design 7.76.
 4. Design 7.29 is shown light-on-dark in all roundels by Shaw but dark-on-light in the EC and NL roundels by Ward. The extant examples are dark-on-light.
 5. Shaw distinguishes between the decorated square tiles of 112mm, laid in sets of 36 in 675mm blocks, and the strip of 'small square tiles' running through the choir which, from the dimensions given, must be *c.*75mm. Ward drew the tiles in the choir panel at *c.*75mm but also illustrated the other square decorated tiles in three main sizes; *c.*145mm, *c.*112mm and *c.*87mm. The larger designs correspond accurately to those of *c.*145mm in the extant assemblage (designs 7.79–81 and 7.82). However, most of the examples he illustrated at 87mm are in fact *c.*112mm (designs R7.85, 7.117, 7.118, 7.129, R7.132, R7.134, 7.168, 7.171, R7.172). One other could be either design R7.76 (*c.*112mm) or R7.128 (*c.*75mm). The single extant example of design 7.76 is re-set in the porch of Jervaulx Hall Hotel.
 6. Shaw described the plain, square tiles, which divided up the diamond-shaped blocks of decorated tiles and framed the roundels, as less than 50mm square. Ward shows them as two sizes; *c.*75mm squares dividing the diamond-shaped blocks (68% of the size of the decorated tiles) and *c.*50mm framing the roundels. There are no extant tiles of 50mm square from Jervaulx but large numbers of *c.*75mm plain tiles do survive, with most examples re-set in St Oswald's Church, York, and in the porch of Jervaulx Hall hotel. Some of these tiles are glazed brown or green over the body fabric, or yellow or green over the white clay, but the majority are completely worn and could have been either decorated or plain. Many of these tiles are scored on the diagonal and split into triangles. It is possible that the plain tiles, used to divide the blocks of decorated tiles, frame the roundels and in the strip of tiling in the choir, were all *c.*75mm squares.
 7. The tiles described by Shaw as 'plain red tiles', and shown tinted red on Ward's plan, cannot now be identified. Their dimensions were not given. The description suggested that the tiles were worn, since medieval tiles would not have looked red when new. The red colour is usually the oxidised fabric of tile quarries whose slip and glaze has completely worn away. The extant assemblage suggests two possibilities. They could have been later medieval Plain-glazed tiles; various types of late medieval Plain-glazed tiles are represented in the loose assemblage from this site (see Chapter 20). Alternatively, they could have been plain or worn examples of the partly oxidised Decorated Mosaic squares.

Both Decorated Mosaic and Plain-glazed tiles were found in the chapter house in 1984 but were not *in situ*. In an earlier excavation, Hope and Brakspear noted that the chapter

house was paved with small square tiles but dimensions were not given (1911, 318).

The extant assemblage confirms the general accuracy of the stylised 19th-century design drawings and supports their provenance. Aspects of the antiquarian record which are unclear or at odds with the extant assemblage include the number of large roundels in existence in the medieval period, the sizes of the tiles, the identity of the plain tiles and the validity of the plan of the church floor (see further, Chapter 14).

Dating: Hope and Brakspear gave an early 13th century date to the rebuilding of the church (1911, 303–44). The tiled floor must date after its completion.

53. KELDHOLME PRIORY, N YORKS, SE/710860 (Cistercian nunnery)

Tile groups, designs: Unknown. Possibly mosaic.

Publications: Eastmead 1824; Rushton 1965, 22.

Extant tiles: None.

Assessment: A pavement and fragments of pillars were found during levelling of the site for the construction of a factory, tennis court and gardens when it was owned by Caleb Fletcher in *c.*1824. The pavement was not preserved but two or three fragments of pillars were re-set in the north wall of the garden. Other remnants are embedded in the house. The pavement was described as 'tessellated'. Antiquarian use of the word 'tessellated' usually refers to mosaic tiles. They described two-colour tiles as 'encaustic'.

Dating: None.

54. KIRKHAM PRIORY, N YORKS, SE/736657 (Augustinian canons)

Tile groups, designs:

Decorated Mosaic, square- or rectangular-tile designs 7.48, 7.91, 7.96, 7.97, 7.139, 7.144, 7.158 (Fig 14.1).

Transpennine, designs 23.26, 23.28, 23.35 (Fig 22.1).

Huby/Percy, designs 24.30, 24.33 (Fig 23.1).

Plain-glazed.

Publications: None.

Other records: Office of Works 1928 (ref. 14, p.368); Stephens 1990; G.K. Beulah notes.

Extant tiles: On site: 21 tiles re-set as shown in Fig 27.19. Examples of designs 7.97 and 7.139 are among a mix of Decorated Mosaic and Plain-glazed types in the northern chapel of the south transept. Six abraded tiles are re-set on the step between the north choir aisle and a chapel added to the east wall of the north transept.

The loose collection is held by English Heritage, consisting of 16 decorated and 86 plain tiles from clearance work by Office of Works; seven Plain-glazed fragments found in a Dissolution dump outside the precinct, north-west of the priory gatehouse (SE/734668); four tiles in the Beulah collection (EH/81066143; 88092654–5; 88092657; 88092663). **Assessment:** The Office of Works list of finds from clearance excavations mentions one patterned tile found in a chamber north of the north transept on 16 July 1928. Additional tiles were recorded during a visit to the site in 1930 by G.K. Beulah, following the main phase of clearance. About 100 tiles were being used between courses in the construction of a wall on the south side of the site. There was also a dump of ten large tiles (10.5" square and 2" deep; 262 × 50mm) with a thick green-brown glaze, whose edges were moulded by hand rather than being cut, and a 2" (50mm) thick fragment with thick yellow glaze in the refectory. G.K. Beulah's records cannot now be linked with the extant assemblages.

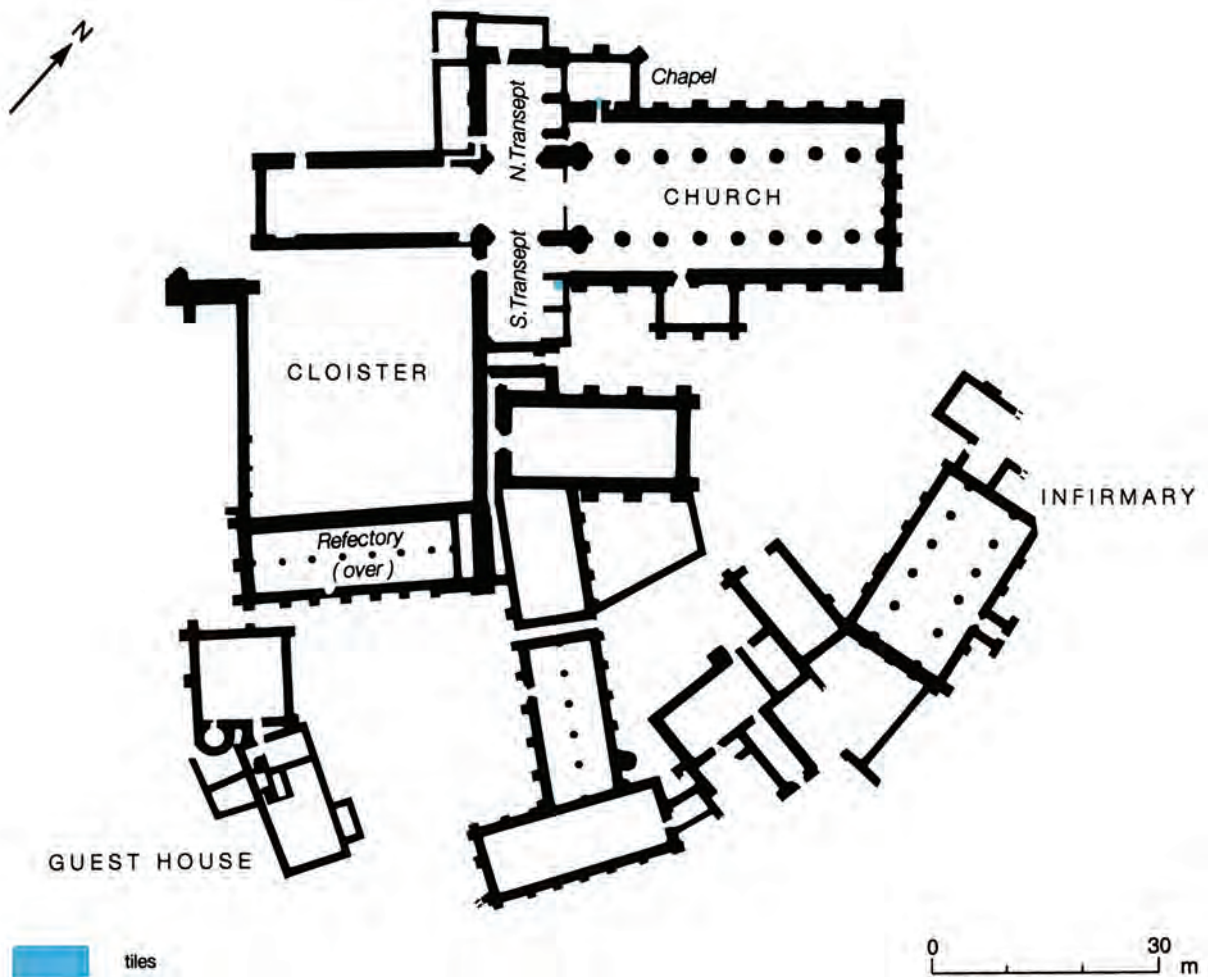


Fig 27.19: Kirkham Priory showing the locations of re-set tiles

Dating: The south transept chapel was part of the 12th-century church, but the chapel east of the north transept was added in the 14th century, providing a *terminus post quem* for the use of tiles there (HBMCE 1985).

55. KIRKSTALL ABBEY, LEEDS, W YORKS, SE/259360 (Cistercian monks)

Tile groups, designs:

Decorated Mosaic, shaped-tile designs 7.2, 7.3, 7.5–7, 7.12, 7.14, 7.20, 7.22, 7.24, 7.26, 7.29, 7.32–40 (Fig 14.1).

Decorated Mosaic, square- or rectangular-tile designs 7.42, 7.43, 7.45, 7.47, 7.49–52, 7.54, 7.56–66, 7.75, 7.77, 7.78, 7.85, R7.85, 7.86, 7.87, 7.94, 7.95, 7.98, 7.103–5, 7.108, 7.111, 7.112, 7.117, 7.120, 7.123, 7.124, 7.126, 7.128, R7.128, 7.133, R7.133, 7.135, R7.135, 7.136, 7.137, R7.137, 7.138, 7.146, R7.146, 7.148, 7.152, 7.161, 7.162, 7.166, 7.172, R7.172, 7.175 (Figs 14.1, 14.7–14.9).

Probable provenance: **Transpennine**, design 23.36 (Fig 22.1).

Uncertain provenance: **Transpennine**, designs 23.9, 23.23, 23.31, 23.34.

Doubtful provenance: **Nottinghamshire**, Parker 1932, 5c.

Publications: Anon 1896; Atkinson 1885; Bellamy and Mitchell 1960; Hargreaves 1847–8; Hill 1895; Hope 1890; Hume and Owen 1952; 1953; Hunter 1830; Mitchell *et al.* 1961; Moorhouse and Wrathmell 1987; Owen 1957;

Richardson 1843; Stevenson 1907–8; Thoresby 1725; Wardell 1853; 1882; Wrathmell 1984; 1987.

Other records: Irvine 1894 (ref. 8, p.368).

Extant tiles: On site: Decorated Mosaic tiles are re-set as shown in Figs 14.7, 14.8, 14.9, 14.12 and 27.20.

Leeds City Council Museums and Galleries: 308 tiles, found by West Yorkshire Archaeology Service during excavations in the area of the guesthouse between 1979 and 1984. The rest of the collection (c.1305 tiles) is effectively unprovenanced, although many tiles certainly came from Kirkstall Abbey. About 121 tiles from the site were accessioned following the excavations carried out in the 1950s but only a few of these are now individually identifiable (D.682.67-D.803.67).

English Heritage: two tiles, Beulah collection (EH/88092528; 88092587).

Assessment: Ralph Thoresby, unsuccessful local merchant but talented 18th-century antiquarian, described early discoveries made in the abbey ruins at Kirkstall, including that of a tiled tomb cover dug up by the gardener in 1713 (1725, 600). The coffin was apparently discovered somewhere in the cloisters. It was made of stone, with a stone covering over the head, and tiles covering the body (Hunter 1830, 201–2). Unfortunately, drawings of these tiles were either not made or have not survived. Thoresby's description indicated that they included shaped examples and tiles decorated with individual letters. This suggests that they were of the Decorated Mosaic series. Tiles were also discovered in the church. Thoresby spent some time with friends digging there,

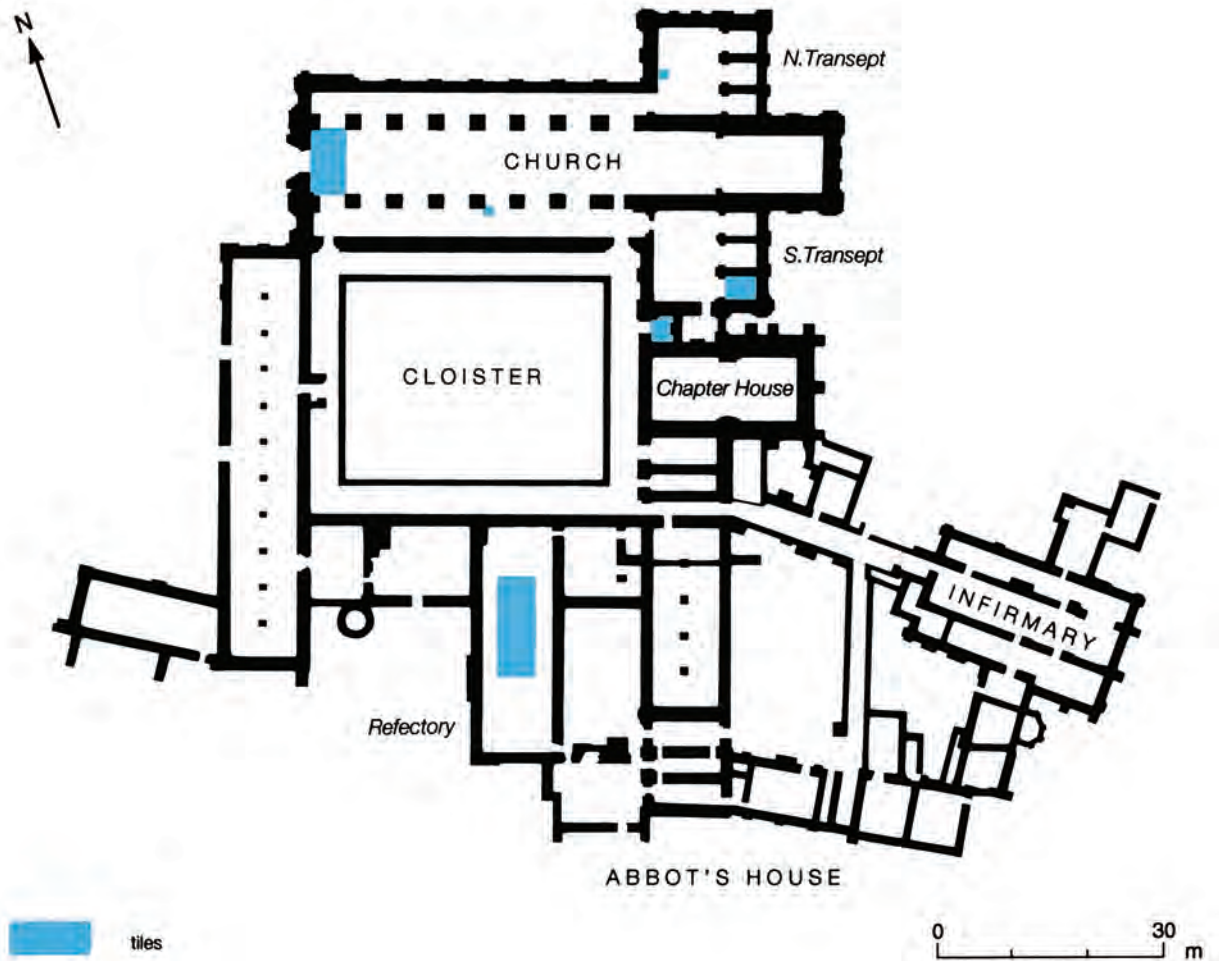


Fig 27.20: Kirkstall Abbey showing the locations of re-set tiles

although the lack of any detailed description in his diary suggests that the tiles found were either worn or plain (Thoresby 1725, 600; Hunter 1830, 286 and 288–9).

Tiles found in 1825, in one of the arched passages near the chapter house, were re-set in the floor of the cupboard north of the chapter house (Hargreaves 1847–8, 31). They were small square tiles firmly cemented together, some decorated with a rampant lion (possible design 7.98), and others with a cross formed of fleur-de-lis (possibly either design 7.76 or design 7.128). The cupboard north of the chapter house is now paved with worn Decorated Mosaic tiles. They are square tiles, three sizes (70mm, 80mm, 112mm), set in no apparent arrangement. A few of the 112mm squares are decorated.

During the 19th century, several designs were published from unspecified locations at Kirkstall (Richardson 1843; Hargreaves 1847–8; Wardell 1853). A collection of tiles from the site were re-set in the south chapel of the south transept (Wardell 1882, 59) and published in *The Builder* (Anon 1896; see Fig 14.12). These tiles, mainly of the Decorated Mosaic Group, remain in the south transept chapel but most are now completely worn. The drawing in *The Builder* is the only record we have of designs 7.33 and 7.39. The drawing confirms that the tiles were re-set in this location as it shows that they were not laid in the arrangements for which they were intended (many shaped tiles of the Decorated Mosaic Group were intended to be placed so that the pattern ran from one band of the roundel to the next).

In a drawing of 1894 a border of plain floor tiles, five deep, arranged in a chequered pattern, is shown abutting the

stone seat running along the west wall of the north transept (Irvine 1894; Irvine's records also include drawings of designs 7.26 and R7.24; ref. 8, p.368). In the north transept, a few worn tiles remain near the west wall and, in the south nave aisle, against the fourth pier from the west end.

There is no antiquarian reference to the area of paving that remains inside the west door of the church (see Figs 14.7 and 14.8). The tiled area covers the width of the nave and extends about 3m into the church. The paving is entirely worn and badly damaged. The tiles are laid over the stone step inside the west door, suggesting that they are re-set in this location. Their layout is, however, reminiscent of that in Ward's reconstruction of the Decorated Mosaic pavement at Jervaulx and might reflect a medieval arrangement (Shaw 1858; see Figs 14.6 and 14.10). The square tiles are set in diamond-shaped blocks, with each diamond made up of either 36 tiles of c.112mm squares or 64 tiles of c.80mm squares. The area is bordered by smaller tiles of c.70mm set on the same axis as the church. This size of tile is also used in the divider lanes between the diamonds. In two cases small roundels, measuring 370mm across, are set within the diamond-shaped blocks of square tiles, one on the north and one on the south side of the pavement. These constitute the only evidence we have for the existence of the 'Small' roundel of this tile group, drawn by antiquarians at Jervaulx Abbey (compare Fig 14.7 and Fig 14.5).

The paving re-set in the refectory (together with some replica tiles) was uncovered during large-scale excavations between 1950 and 1964 (Mitchell *et al.* 1961; see Fig 14.9). The excavation of the refectory and dating of this pavement

have recently been re-assessed (Moorhouse and Wrathmell 1987, 18–22). The tiled floor is convincingly argued to have been inserted as part of later 15th century alterations that involved changing the building into a two-storey structure. In the reconstruction of the refectory floor, published by the excavators in 1961, the layout of the roundel does not follow the intentions of the original designers of the pavement. This supports the idea that the tiles were re-used in this location during the medieval period.

The likelihood that Decorated Mosaic tiles were re-used in the refectory in the 15th century would be further strengthened if we knew that new tiles were being laid elsewhere on the site at that date. The re-set floors in the south transept chapel and the room north of the chapter house do include a few examples of 15th-century Transpennine tiles of design 23.36, but the tiles in these locations were put there by antiquarians so their provenance is uncertain (Wardell 1882, 59; Hargreaves 1847–8, 31). No Transpennine Group tiles were reported in the 1950s excavations although there are several examples in the unprovenanced collection in Leeds City Museum. A single tile of design 23.36 (Transpennine) was, however, found on the site during excavations carried out by West Yorkshire Archaeology Service (KA79 L3 A1). The tiles from these excavations were not found *in situ* or in relation to a medieval floor and are most likely to have been deposited during Victorian landscaping programmes. Kirkstall Abbey was given to Leeds City Corporation in 1888, after which it was laid out as a public park (Anon 1896, 5). Nonetheless, the provenance of this find is not in doubt and it supports the idea that a new pavement was laid at Kirkstall in the 15th century, perhaps providing a context for the re-use of the Decorated Mosaic tiles in the newly reconstructed refectory.

There is no evidence to support Stevenson's attribution of a Nottinghamshire tile to Kirkstall Abbey (1907–8).

Dating: The re-use of the Decorated Mosaic tiles in the refectory is dated to the late 15th century (Moorhouse and Wrathmell 1987, 19–22). There is little indication of the date of the first use of Decorated Mosaic tiles at this site. The poverty of the house by 1284 might suggest that the original pavement dated before that time.

56. LANCASTER: DOMINICAN FRIARY, SD/479618

Tile groups, designs: **Group 11**, shapes P.1–33 (Fig 16.4).

Publications: Greene 1989, 144; Penney *et al.* 1982; Simpson 1852, 242–5.

Extant tiles: Lancaster Museum: 23 tiles/fragments.

Assessment: The 1982 report recorded details of 31 tiles found during drain-laying activities in Sulyard Street in c.1805 and 94 tiles from excavations in the area of Dalton Square in 1980–1. The Sulyard Street/Dalton Square area is thought to be the site of the Dominican Friary. The assemblage is much reduced from that published in 1982, with examples of only 13 of the 33 published shapes now extant. It is the complete examples of the more unusual shapes that are missing in most cases, perhaps suggesting that they have been mislaid following use in a display. The 19th-century tiles were found *in situ* but all the recently excavated examples were from post-medieval contexts.

Dating: Medieval.

57. LASKILL FARM, BILSDALE, N YORKS,

SE/564907 (grange of Rievaulx Abbey)

Tile groups, designs: Possibly **Plain Mosaic**.

Publications: None.

Other records: Weatherill c.1930–50, two drawings.

Extant tiles: None.

Assessment: Green and yellow glazed tiles were found when altering the cowhouse in 1934 and in the stackyard west of the carhouse in July 1950. John Weatherill's drawings show plain tiles of c.78mm square. Various pieces of worked stone were also found in and around the farm buildings.

Dating: None.

58. LINDISFARNE PRIORY, NORTHUMBERLAND, NU/136417 (Benedictine monks)

Tile groups, designs: **Plain-glazed**.

Publications: None.

Extant tiles: English Heritage: four fragments displayed on site (EH/81077001–3; 81077012).

Museum of Antiquities, Society of Antiquaries of Newcastle upon Tyne, University of Newcastle and Tyne and Wear Museum Services: two examples (1986, 10 Box 175M).

Assessment: It is not known when or how the extant tiles were found but those in the English Heritage collection were probably discovered during clearance operations in the first half of the 20th century.

Dating: None.

59. LOUTH, LINCS: POSSIBLY FROM LOUTH PARK ABBEY, TF/355887 (Cistercian monks)

Tile groups, designs:

Probably **Plain Mosaic**.

Possibly **Decorated Mosaic**.

Publications: Eames 1980, 1, 77–8; Uvedale 1801–2.

Extant tiles: None.

Assessment: An elaborate tile roundel, with a diameter of at least 16'6" (4.8m), was discovered 3' (0.9m) below ground surface during work on Westgate House in Louth in 1801. A sketch and brief report were published by Uvedale in a supplement to the *Gentleman's Magazine*. The tiles are not extant and the pavement is presumed to have been either reburied or destroyed. The sketch, reproduced in Figure 27.21, shows a centre circle divided into eight with thirteen

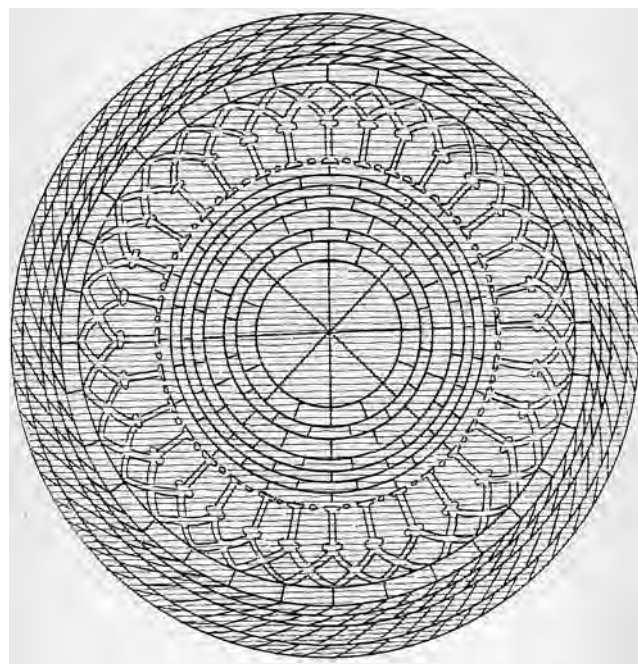


Fig 27.21: Tiles, probably of mixed types but including Plain Mosaic, found at a house in Louth: Uvedale 1801–2. Diameter of 16'6" (4.8m)

outer bands. The shapes of the tiles suggest that the roundel was made up using a mixture of Decorated Mosaic and Plain Mosaic tiles. The centre is reminiscent of the corner circles in Shaw's illustrations of the Decorated Mosaic roundels at Jervaulx (see Figs 14.2–14.4). Around the centre are bands of segmental tiles. The narrow bands occur in both the Plain and Decorated Mosaic series but the broader segmental tiles are only known in the Decorated Mosaic tile group. Beyond these there is a band of the 'blind arcading' known from the Plain Mosaic roundels M.73 and M.74 at Meaux (see Fig 10.12). This band is described as 1' in depth (300mm) in *The Gentleman's Magazine*; a little larger than the 270mm of the extant Meaux tiles used in this arrangement. The outermost bands may also have been made up of Plain Mosaic shapes. The report noted that the outer bands appeared to be of 'different colours, varied alternately', which would accurately describe Plain Mosaic. It is, however, surprising that the patterns likely on any Decorated Mosaic tiles went unremarked. It is possible that the Decorated Mosaic tiles were too worn when found for any pattern to be discernible.

It is not known whether the site of Westgate House was ever a property of the abbey and no tiles are known from the site of the monastic complex which lies 3km away. The apparent mixture of tile types, and their arrangement, strongly suggest that they were re-used in the floor in which they were found.

Dating: None.

60. MARKENFIELD HALL, NR FOUNTAINS ABBEY, N YORKS, SE/294673

Tile groups, designs, shapes:

Plain Mosaic, c.90mm squares.

Transpennine, design 23.36 (Fig 22.1).

Publications: Miller 1985; Walbran 1851, 287; 1856, 101–2.

Extant tiles: On site: square tiles of Plain Mosaic type, of the size known at Fountains Abbey, are re-set in a radiator alcove in the chapel. Other tiles may remain beneath the floor boards, north of the chapel.

Assessment: The site is a moated manor house 3km south-west of Ripon, and c.2km south-east of Fountains Abbey. It was built in the early 14th century, probably being completed by 1323 (Miller 1985). Major alterations were carried out in the 15th and 16th centuries and there was restoration work in the 18th, 19th and 20th centuries. The first floor of the east wing is made up of a chapel flanked by other rooms to the north and south. During restoration work under the direction of J.R. Walbran, one of the rooms to the north of the chapel was found to be partly paved with tiles of design 23.36 (Walbran 1851, 287; 1856, 101–2). Tiles of this type are dated to the 15th century.

In a further phase of restoration carried out in 1981–4, tiles were again found above the vaulted ground floor rooms at the north end of the east wing (Miller 1985, 105). These had been concealed by an 18th-century boarded floor. The tiles were described as 112.5mm square and 37.5mm deep, with a single scooped key in the base. They were worn with few traces of slip or glaze. This description suggests square tiles of the 13th-century Plain Mosaic series, apparently in a similar location to the 15th-century tiles of design 23.36, seen by Walbran. Miller stated that a small area of the 'original tiles' had been relaid as a hearth in the centre room. The centre room is the chapel. A blocked doorway here, which was used as a hearth in the 18th century, is paved with c.90mm squares of the Plain Mosaic Group.

Dating: Plain Mosaic tiles are thought to have been made for Fountains in the first half of the 13th century, about 75

years before Markenfield Hall was built. It is likely that an assortment of tiles were taken from Fountains for use at Markenfield following the Suppression of the monastery. The Markenfield family was entertained at the abbey in the 15th century (Walbran 1851, fn.277) and was well placed to obtain tiles and other material from the ruins.

61. MEAUX ABBEY, NR HULL, E YORKS, TA/092395 (Melsa; Cistercian monks)

There is a separate entry for the kiln site at North Grange, Meaux (entry 62).

Tile groups, designs, shapes:

Plain Mosaic, designs 1.7, 1.8, 1.12, 1.13, 1.15, 1.19–24. Shapes 3, 6, 7–8, 12–13, 16, 23, 25–8, 33–7, 39, 43, 46–8, 51, 54–5, 58, 60–1, 65–70, 73, 75–8, 81–2, 84, 86, 91–3, 95–6, 99, 102–5, 107–12, 114–16, 119–20, 123, 125–37, 141–3, 146–58, 161–4, 166–8, 171–8, 182–7, 190, 193–202, 205–9, 211, 213, 215, 221–32, 235–43, 247–50, 262–5, 267–76, 279–82, 286–8, 291, 298, 301, 303, 307, 309, 314–15, 317, 319–20, 327, 330, 341, 345, 347–9, 354, 359, 360, 366–7, 370, 372, 374–5, 387, 390, 392, 397–8, 407–11, 413, 415–19, 423, 426, 452, c.100mm squares, one pierced with a 47mm diameter circle (Figs 10.1–10.6, 10.10–10.16, 27.22, 27.24–27.26).

Inferior quality Plain Mosaic (Group 2), designs 2.1, 2.2. Shapes 3, 16, 25, 27, 39, 48, 77, 80, 85, 87, 90, 91, 92, 107, 184, 189, 192, 349, 345, 435, c.100mm squares (Figs 11.1, 11.2).

Group 3, designs 3.1–3.3 (Figs 11.3, 11.4).

Group 17, designs 17.1, 17.6 (Fig 19.2).

Group 25, designs 25.2, 25.7, 25.8, 25.10, 25.11 (Fig 24.1).

Group 31, designs 31.1–31.4 (Fig 24.8).

Plain-glazed.

Unallocated, design Un/7 (Fig 25.4).

Possible provenance: **Group 3**, design 3.5.

Doubtful provenance: a **Nottinghamshire** alphabet tile (Wh/133) was probably incorrectly attributed to Meaux by Stevenson (1907–8).

Publications: Beaulah 1929; Bond 1866–8; Butler 1984; Cox 1893; 1894; 1905; Eames 1980, 1, 72–82, 87, 274; Eames and Beaulah 1956; Milner-White 1963; Poulson 1840–1; Sheppard 1905–6; 1907; Stevenson 1907–8; Tickell 1796; Wellbeloved 1881, IIITb.

Other records: Beaulah 1927, with additional information from G.K. Beaulah's recollections, notes, photographs and drawings; 1933; n.d.; Blenkin c.1987; Brook c.1921–36, nos 180, 181.

Extant tiles: Re-set at Meaux: there are no tiles visible on the site. Part of a worn Plain Mosaic M.65 roundel is re-set in the old entrance hall of Meaux Abbey Farm. About 250 Plain Mosaic tiles are re-set outside the back door of Stud Farm (now known as Old House), near Meaux.

Re-set in York Minster: Plain Mosaic tiles from Meaux, presented to the Dean and Chapter of York Minster by Reginald Pexton in 1963, are re-set in the crypt of York Minster (Milner-White 1963; see entry 99, *York Minster*).

Re-set in St Bartholomew's Church, Aldbrough, nr Hornsea: the altar pace in the Melsa chapel is set with Plain Mosaic tiles. These were originally from Meaux Abbey, being re-set here after recovery from a church at Hilston, about 6km south of Aldbrough, which was bombed in the 1939–45 war.

Beverley Museum: 13 tiles, said to come from Meaux, with two examples of design 3.2 and several pieces of Plain Mosaic. Beaulah recalled buying tiles of design 3.2 in Beverley and giving them to the museum.

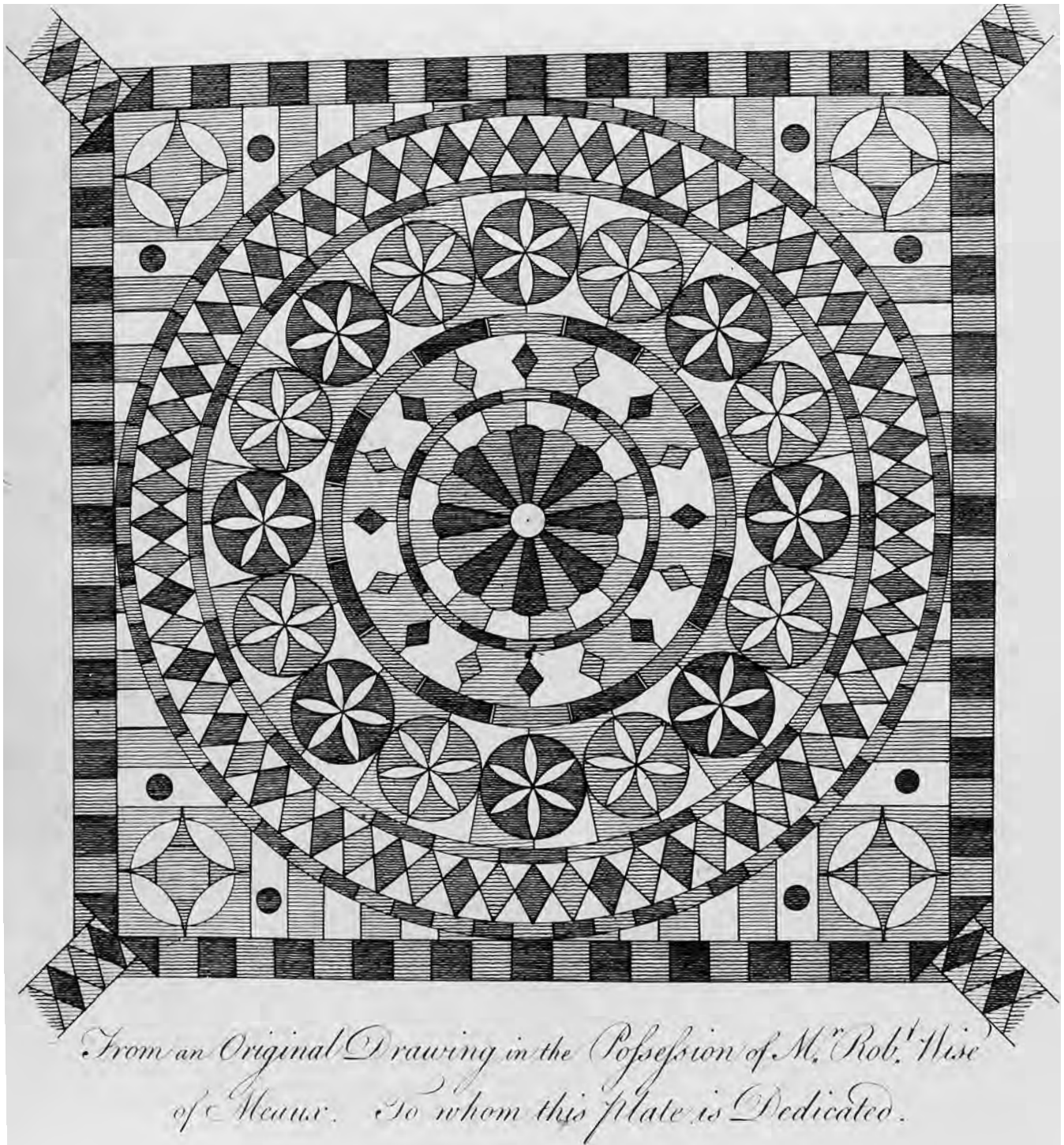


Fig 27.22: Plain Mosaic found at Meaux Abbey: an M.65 roundel drawn by J. Tickell 1796. There is no other evidence to support the diagonal arrangements at the corners, or the counter change of colours within the roundel

British Museum: 44 panels and many loose tiles of Plain Mosaic; one tile of design 25.11; five tiles of design 25.10 (BMC/2085–2107; 2851–3081; 12310–13452). These were bought from G.K. Beulah or obtained from him via the Rutland Collection.

English Heritage: 38 panels of Plain Mosaic and c.100 loose tiles of most other Meaux types, Beulah collection, EH/88092263–88092527; 88092584–5; 88092594; 88092611; 88092664–88092676; 88102389; 88200647–88200648; 88200656–88200677; 88213452–88213458.

Hull and East Riding Museum: 45 Plain Mosaic tiles said to have come from Meaux (145.1979 1–14). These include 12 tiles from an M.65 roundel found in 1834, labelled Meaux. Five tiles were part of a gift from G.K. Beulah (36.67.3–6). Two further boxes contain tiles of types known from Meaux but these are unprovenanced.

Yorkshire Museum: two tiles from Meaux were listed by both Wellbeloved (1881, IIITb) and Brook (Brook/180 and 181; designs 1.7 and 1.8). A further tile is labelled Meaux (Brook/182, design 1.15) but is not provenanced by Brook.

A tile of design 1.8 was donated by G.K. Beulah (1927.659).

York Minster Library: six square Plain Mosaic tiles from Meaux including two of design 1.8 and one of design 1.7; perhaps part of Pexton's bequest. These might have come from the kiln site at North Grange (see entry 62).

Assessment: The earliest record of tiles from Meaux Abbey was the report and drawing of a Plain Mosaic roundel (of M.65 type) published by John Tickell (1796; see Fig 27.22). The roundel had been found in 1760 and was in the possession of Robert Wise, whose family had bought the site and adjoining lands and built a house there. The house is Meaux Abbey Farm, previously known as Grange Farm, which lies about 1km from the earthworks that are the remains of the medieval monastery. Tickell lamented the fact that areas of the abbey floors were being dug up and used for repairing the adjacent roads.

Excavations continued in the 19th century. G. Poulson published two roundels found at Meaux Abbey in June 1834 (1840–1). One of these was again an M.65 roundel, some of the tiles being extant in the Hull and East Riding Museum collection. The second drawing was of a new and elaborate arrangement (Fig 10.11a). A few tiles subsequently discovered by Kenneth Beulah suggested some alterations to Poulson's second figure but the general effect was confirmed (Fig 10.11c–d). Poulson noted that Mr Wise had numerous portions of tessellated pavement in his garden which had been removed from the abbey at various periods. Much of this material has been lost but part of one of the M.65 roundels is now in the hall of Meaux Abbey Farm, and there are many architectural fragments in the garden, some constructed into a monument, and others re-used in the farmyard.

Four Hispano-Moresque tiles found during a 'slight examination' of the choir of the church of Meaux Abbey in c.1880 were published with coloured plates by J.C. Cox in 1894 (Fig 24.8). One of the designs only varies in the colours of the glaze and, therefore, only three designs were published when the article was reprinted with black and white drawings (Cox 1905). The tiles were in the Hull and East Riding Museum collection but were lost during bombing of the museum in 1943. Cox did not think they had been found *in situ*, and speculated that they had been the property of a Hull merchant who, having bought a corrody at Meaux, used the tiles to furnish their apartment. Disturbance of the tiles over such a distance would be unusual, however, and their use in the church, perhaps as a grave marker, must remain a possibility.

The Beulah family arrived at Meaux Abbey Farm in 1912. In the 1920s, G.K. Beulah and his friend, Reginald Pexton of Watton Abbey Farm, began a series of small excavations on the site of the church. Figure 27.23 is a diagrammatic drawing of the church at Meaux based on Beulah's plans, showing the areas of tiling found. Most of the tiles now in the loose collections held by English Heritage and the British Museum were from these excavations. Although the general provenance of the loose collections is not in doubt, it is only occasionally possible to link actual tiles with the findspots on the plan. Some of the material is recognisable through Beulah's early publications, his notes or catalogue. The counter relief fragment of design 3.5 is only provenanced to Meaux through its occurrence in his collection and absence of attribution to anywhere else (EH/88092441).

Information from G.K. Beulah's records about the tile finds is set out in the following notes:

The great majority of the tiles were found in the church but many had already been removed, either at the Dissolution or subsequently, perhaps for the road repairs noted by Tickell. Few of the tiles uncovered were still *in situ*. Almost all the *in situ* tiles were of the Plain Mosaic series. The areas most certainly found undisturbed were those in the north crossing aisle (Area D in Fig 27.23; Fig 27.25) and the west end of the nave (Area P; Fig 27.23). However, a sufficient scattering of Plain Mosaic tiling survived to suggest that a large part of the church was paved in the 13th century. It should be stressed that complete Plain Mosaic roundels were not found. In some instances, several pieces of these arrangements were found together, or near one another, and were thought to be close to their medieval location. In other cases, possible roundel arrangements were reconstructed from pieces found all over the church. Plain-glazed tiles had been used to repair the Plain Mosaic floor in Area C and in the south-west corner of Area D. Plain-glazed tiles were also found in Area Q and immediately south of the south wall of the south transept. There was no evidence for paving in the nave aisles. The later decorated tiles were not found *in situ*. The entry in the British Museum register (1955, 10–14) for the tiles purchased from G.K. Beulah in 1955 includes a note to the effect that the tiles from the east end of the abbey were of best quality and that they got worse to the west. Beulah later revised this view saying that he was no longer sure that this was the case.

Tiles found in the church (areas labelled as on Fig 27.23)

Presbytery

A photograph, labelled 'in the presbytery, Aug 1970', shows a border of Plain Mosaic 92 abutting some small square tiles of uncertain arrangement (Fig 27.24). The precise location of these finds is not known.

Area A: A few 75mm (Plain Mosaic) square tiles were found *in situ* in the north-east corner of the presbytery. Some had counter relief rosettes or fleur-de-lis (designs 1.7 and 1.8; Fig 10.15). They abutted a layer of roof tile, which had provided the bedding for a freestone altar which had stood 0.825m from the east wall.

Area B: A further patch of about 6m² of these types were found between the reredos and the east wall in 1927, and were taken up.

Area C: To the south, tiles of the trellis mosaic, M.24 or similar (scale not known; Fig 10.2), were found at the same level on either side of, and partly covering, the presbytery screen wall. This was a later attempt to simulate the 13th-century arrangement since some Plain-glazed tiles with nail holes were included, along with 13th-century tiles of the wrong types for this mosaic.

Fragments found loose in the presbytery area included parts of Plain Mosaic roundels M.78 (Fig 10.13) and M.73 (Fig 10.12). Also an example of design 1.13 (inlaid, yellow on black; Fig 10.15) and part of the 'doves' (Mosaic 90, Fig 10.4; pieces of three separate sets of this mosaic were found together, suggesting that they might have been used as a border, although none was *in situ*).

Area D: A large area of paving was found *in situ* in the north crossing aisle, abutting the screen wall of the southern chapel of the north transept, and reaching to within 1.8m of the presbytery platform (Fig 27.25). It measured c.1.8m in width

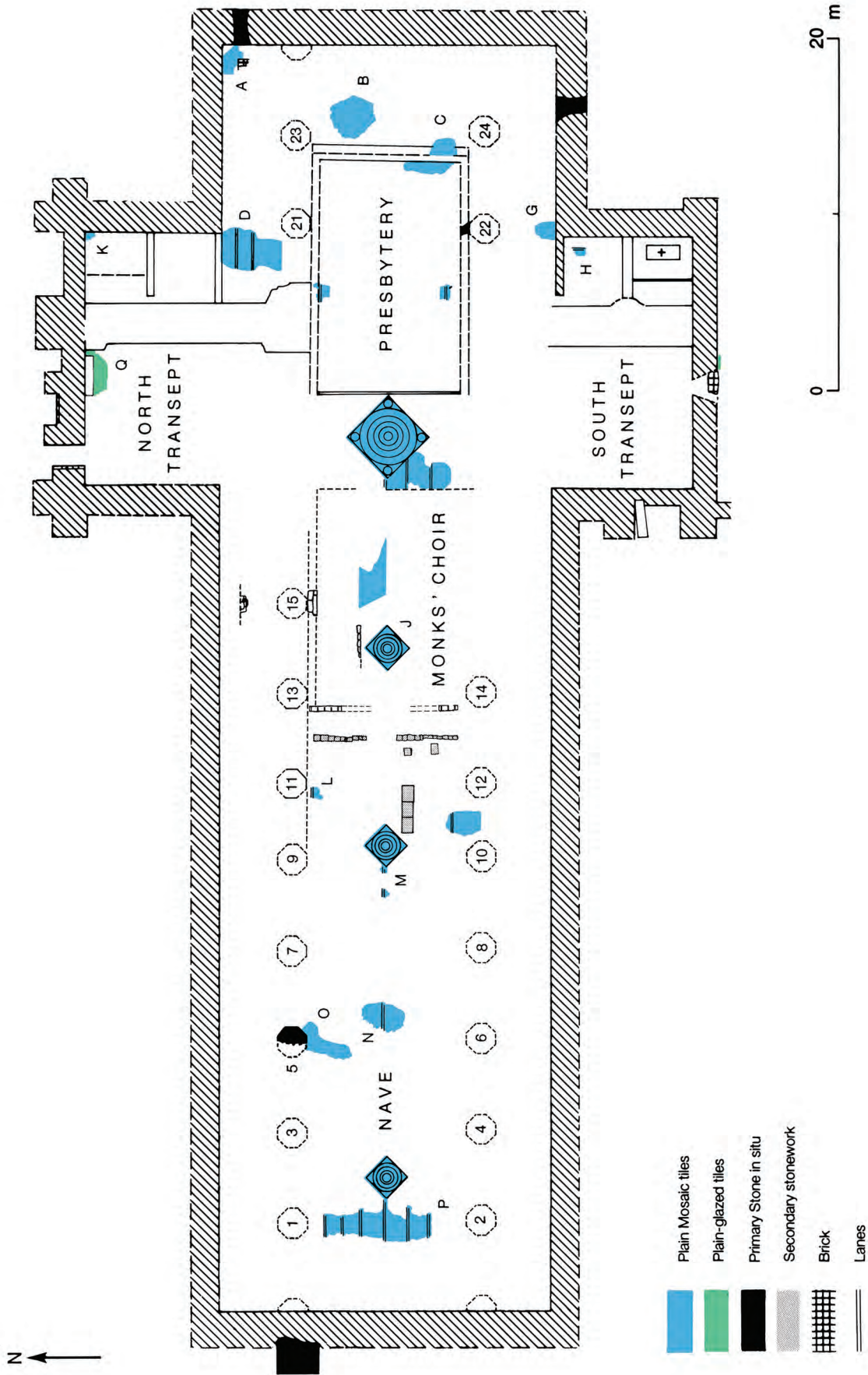


Fig 27.23: Meaux Abbey showing the locations of the tiles discovered during excavations by G.K. Beaulah



Fig 27.24: Plain Mosaic paving found in situ, Meaux Abbey church, presbytery, precise location unknown. G.K. Beaulah, August 1970

and lay *c.*15cm below the floor in the presbytery. The tiles were arranged in three lanes running east–west. Nearest the north transept chapel was a lane of Mosaic 107 (Fig 10.3); then a lane of M.28; then a lane of M.24, with divider lanes of M.3 and M.4 (Figs 10.1, 10.2). The southern edge of the M.24 mosaic was a repair made up of a mixture of tiles including late glossy examples like those found in front of the possible altar in the north transept. An example of design 3.3 (Fig 11.3) was found here.

Area E: An east–west divider lane of Mosaic 87, flanked by M.32 or a similar arrangement, was found on the north side of the presbytery platform near a possible doorway through to the north ambulatory (Figs 10.1, 10.2).

Area F: Some tiles of mosaic shapes 81, 84, 182/3 and 192, were found loose near the site of the west presbytery step(s) in 1928 and could have been used as risers (the tiles of S.182/3 and 192 are Inferior Plain Mosaic; Eames 1980, 2, Mosaics 18 and 21).

Area G: In the south presbytery aisle a patch of M.24 abutted the screen wall of the south transept chapel (Fig 10.2).

South transept

There were no *in situ* tiles in the body of the transept or in the southern chapel. However, some tiles were found buried where the step from the transept into the southern chapel had collapsed, including pieces of M.61 and six tiles inscribed in Lombardic characters (designs 1.19–24; Fig 10.15). Designs 1.21 and 1.23 were the only ones found close together but one other was found upside down, suggesting they were all displaced. Initially Beulah thought the inscription had been set in the riser to the step but he later dismissed this idea. He also wondered whether they had formed the outer ring of a very large roundel, but the long sides of these tiles show no signs of any curve. Large numbers of the 75mm square tiles were found loose in this area and were re-buried in the north-east corner of this chapel.

Area H: In the northern chapel, a row of Plain Mosaic 75mm squares were found in front of where the altar should have stood, flanked to the west by a possible border of M.61.

The monks' choir

Area I: Parts of Mosaic 75 were found before 1933 in the area immediately east of the monks' choir and at the foot of the presbytery step. The roundel M.75 was reconstructed from these pieces (Fig 10.11c). One of the small corner roundels was found intact and also a segment of the outer two rings. Fragments of the third ring were reconstructed with reference to Poulson's (1840–1) drawing Fig 10.11b). The fourth ring is speculative. The centre is based on four tiles and the analogy of other Plain Mosaic roundels. Three panels of tiles, one of Plain Mosaic squares, one of M.38 and the southernmost of M.28 are shown on plan on the south side of the roundel (Fig 27.23; 10.2). There are no excavation notes for this area.

Area J: West of this, at the west end of the monks' choir, on the north side, about 50 unworn tiles were found mixed up together in a pit. G.K. Beulah used some of the tile shapes to reconstruct a possible arrangement, shown by Elizabeth Eames as a corner roundel in the British Museum catalogue (Mosaic 76, Fig 10.8). Pieces of M.73 were also found here, including an inscribed tile of the inferior quality Plain Mosaic (Group 2, design 2.2; Fig 11.1)). Also found were tiles of shapes used in M.47 and M.53. Mosaic 53, as reconstructed in the British Museum collection, is not entirely convincing and there is no evidence for this as a medieval arrangement. It is not therefore reproduced here.

The mortar on the backs of some of these tiles, and their relatively unworn condition, suggested to G.K. Beulah that



Fig 27.25: Plain Mosaic paving found in situ, Meaux Abbey church, north choir aisle, looking north (Area D on Fig 27.23). G.K. Beulah

they had been taken up shortly after laying, perhaps during alterations to the monks' choir stalls that included the provision of brick-built foundations. However, some possible wasters were included in the make-up, with several of the small lozenge-shaped tiles (S.37) stuck together exactly as found at the tile kiln site at North Grange. Fifty or sixty tiles of this shape were found here – the largest number of any tile type. The broken and worn tiles found loose were reburied over the site of the adjacent pier (no. 13). Tiles taken up from the pit were labelled '7a'. There are examples in both the English Heritage and British Museum collections.

Other examples of the tiles in the pit beneath the choir stalls were found loose immediately west of the pulpitum. However, the floor in this area was hard and smooth and may not have been tiled. Most of the loose tiles came from the north side.

The trench in the west end of the choir stalls was continued eastwards and a change was noted in the types of tiles found. To the west were the tiles of the M.76 roundel, then there were 75mm Plain Mosaic squares, and towards the east there were several tiles of an M.65 roundel, including an almost complete corner section (Figs 10.6, 10.10). Several of the shaped pieces were stamped with fleur-de-lis or, more usually, rosettes (designs 1.7 and 1.8; Fig 10.15). The corner piece is not extant but some other sections of this version of the M.65 roundel are in the British Museum collection (Eames 1980, M.72; 1955, 10–14, 29).

Further west the predominant tile type changed to M.36 (Fig 10.2). Examples of this type had been uncovered earlier, in about 1926, south-east of pier 15, on the north side of the monks' choir.

Retrochoir and nave

Area K: A divider lane of Mosaic 4 (Fig 10.1) was found north of piers 10 and 11 on the south side of the nave. To the south of the divider there were Plain Mosaic 75mm squares

of unknown arrangement. To the south were a few 100mm Plain Mosaic squares.

Area L: A trench was dug from 1.2m south of pier 9 in the nave, eastwards to the west wall of the pulpitum. No evidence for a screen was found, and few tiles, until about 0.6m south-east of pier 11 where a small patch of *in situ* tiles remained. These consisted of a row of 75mm Plain Mosaic squares, some impressed with counter relief rosettes (design 1.7), flanked on their south side by a divider line of Mosaic M.4, with a mixture of shaped tiles nearby. Their arrangement was uncertain but included a quatrefoil at the centre of petal-shaped tiles (Fig 27.26; possibly one of the quatrefoils S.203–207 and petal shapes S.131–133).

Area M: A segment of roundel M.73 was found half way down the nave, and included a tile of design 1.12 (shown in Eames 1980, LXIIIB; see Fig 10.12a).

Area N: In the fourth bay from the west end the central divider lane of Mosaic 4 was again visible, flanked on the north side by 75mm squares and by M.24 to the south (Figs 10.1, 10.2).

Area O: A patch of tiling abutting pier 5 ran c.2m southwards. The tiled floor was level with the top edge of the pier chamfer. The tiles were divided into two areas; Mosaic 24 against the pier and M.28 to the south (Fig 10.2). There was no divider lane between the different mosaic arrangements here.

A few loose tiles of roundel M.65 were found in the north aisle, due north of pier 5. It was noted that these were much thinner than usual and of a different manufacture. Tiles of this type are in the British Museum collection (Eames 1980, M.71; 1955, 10–14, 30; BMC/13166–13186).



Fig 27.26: Plain Mosaic paving, Meaux Abbey church, nave (*Area L* on Fig 27.23)

Area P: Between piers 1 and 2, a band of five lanes of tiling was preserved *in situ* across most of the body of the nave. This was not recorded in the report begun in 1933 but was clearly drawn on the plan used as the base for Fig 27.23. G.K. Beaulah suggested that the tiles in this location may have been protected by a screen at the western entrance to the laybrothers' choir when the rest of the tiles were taken up. The panels in this area were made up of M.24 and M.25, and one unidentifiable pattern of 100mm squares (Fig 10.2). The four divider lanes were all of M.4 (Fig 10.1). The roundel (M.65; Fig 10.6) to the east of this band was represented by only a very few *in situ* tiles.

Nave aisles

No tiles were *in situ*. Examples of the Group 25 designs 25.7 and 25.10 were found loose half way down the south nave aisle, as well as various mosaic tiles (Fig 24.1).

North transept

Area Q: Centre part of north wall. Late medieval black and yellow Plain-glazed tiles were laid with re-used 13th-century tiles of the Plain Mosaic series in front of a possible altar in the centre part of the north wall of the north transept.

Area R: 75mm Plain Mosaic tiles were found *in situ* in the north-east corner of the northern chapel. Four or five tiles of design 3.1 (Fig 11.3; possibly Inferior Mosaic) were found south of the door to the cemetery in the north-west corner of the transept, some showing that they had been made with several impressions of the stamp on a large block of clay (Fig 11.4).

Outside the church

On the north side of the north wall, outside the church at the north-west corner of the central buttress, there was a medieval dump of unused Plain Mosaic tiles 50–75mm below the Dissolution ground surface. Some of the tiles from the dump were left in the south-east angle of the same buttress, while about 50 others were lifted and marked '4A'. Among the tiles was a seal with the inscription S' MACILIS FIL NICHOLAS D'ARNH.

Other buildings

The claustral walks

Plain-glazed tiles were found *in situ* in a chequered arrangement in the east cloister walk (Fig 27.27). Most examples had been taken up but a patch remained in a recess near the southern wall of the nave. Fragments of similar tiles were also found loose in the west claustral walk. The rubble lying on the tile bed suggested that the tiles had been carefully taken up before the walls were demolished.

Chapter house

Nothing remained of the floor in the chapter house. Tiles of unspecified types were found in the rubble.

Infirmiry lavatory

The floor in what may have been the infirmiry lavatory was found intact and made up of square tiles of seven different sizes ranging from c.75mm to 300mm and including some examples of design 3.3 (Fig 11.3). This building was thought to date to c.1450. The several sizes of square tiles suggests they were being re-used here.

The 'chapel in the woods'

Reference is made in the Meaux chronicle to a 'chapel in the woods', built for the patron and magnate Peter de Mauley in c.1238 (Bond 1867, ii, x). A ruined chapel was recorded in Roger Dodsworth's early 17th-century diary and was marked on the OS map for 1850, with the area around it labelled Chapel Close. Nothing now remains above ground but the outline of this building is clearly visible in the north-east corner of the abbey precinct. Excavations by Beaulah in 1969 established that the chapel had an east-west length of 50' (15m). Several unworn tiles were found but none was *in situ* and the floor of the chapel appeared to be of smooth mortar with no tile impressions.

Dating: The surviving copies of the Meaux chronicle, covering the period 1150–1396, were written by Thomas Burton, the 19th abbot, in the early 15th century. These were edited for publication in three volumes by E.A. Bond (1866–8). Sections relating to the fabric of the monastery were translated by G.K. Beaulah and survive in his notes. There were, according to the chronicle, five initial phases of building. The founder provided two buildings, one described as the magnum domum, and the second as being of two storeys with the monks' dormitory on the ground floor and a chapel above (Bond 1866–8, i, 82). These were replaced after a few years by timber buildings similarly arranged. There followed, between 1160 and 1182, the first attempt at a stone church. This was demolished and a second church begun, helped by gifts of three stone quarries, at Brantingham, Hessle and elsewhere (Bond 1866–8, i, 227). Shortly afterwards, between 1197 and 1210, this too was demolished and, under the auspices of abbot Alexander, a third and final stone church was begun (Bond 1866–8, i, 234). The foundation stone for the third church was laid in 1207 and the high altar consecrated in 1253 (as recorded in the chartulary rather than the chronicle; Bond 1866–8, xxxvii, n1). During the abbacy of William of Driffield (ninth abbot, 1249–1269), the floor of the church was tiled.² Plain Mosaic is the only series used in a large-scale tiling programme at this site and is the only type of tiles found *in situ* in various places around the church. On this basis the Plain Mosaic tiles at Meaux are dated to 1249–69.

2 Bond 1866-8, ii, 119: 'Tempore autem hujus abbatis Willelmi noni, factum est campanarium nostrum et plumbo coopertum, et magna campana vocata Benedictus, totaque ecclesia asserum testudine caelata et tegulis in fundo cooperta; factaque sunt magnum granarium apud pistrinum et plumbo coopertum, infirmitorium conversorum et stalla ipsorum in ecclesia. Deinde vero, anno Domini 1269, dictus dominus Willelmus de Dryffeld, abbas noster nonus, vir mirae sanctitatis, disciplinae custos, omniumque virtutum aemulator eximius, monasterium per xx. fere annos laudabiliter regens, beato fine quievit, et sepultus est in capitulo juxta praedecessores suos, sub tus tumbam erectam ante analogium.' Translated by G K Beaulah (n.d.): 'In the time of this abbot William, [?was made our bell tower covered with lead; and a great bell called Benedict; and the whole church was covered with a decorated ceiling of boards above, and with tiles on the floor; a great granary near the bake-house was built and roofed with lead and the laybrothers' infirmiry and their stalls were erected]. Then, in the year 1269, master William of Driffield, our ninth abbot, a man of wonderful piety, an upholder of discipline, and an outstanding example of every virtue, having ruled the abbey in praiseworthy manner for nearly 20 years quietly came to his blessed end and was buried in the chapter house [?near] his predecessors, under a tomb placed in front of the lecturn.'



Fig 27.27: Plain-glazed tiling at Meaux, north-east corner of the cloister. Several of the 'yellow' tiles appear to be streaked with brown where the slip has been brushed too thinly on to the quarry, a feature of Grade 2 Standard Plain-glazed tiles. G.K. Beaulah, n.d.

There is little dating evidence for the other tile types found at Meaux. One of the tiles of Group 17 (Fig 19.2) was found either next to, or, in another note, under a tombstone of 1450, between piers on the south side of the nave. The Hispano-Moresque tiles are dated c.1500–1538/9 on the basis of comparison with examples held in the Victoria and Albert Museum (Ray 2000, nos 751 and 846), with the date of the Dissolution of the abbey at Meaux possibly providing the *terminus ante quem*, although there are instances of post-Dissolution re-use of abbeys for burials.

62. MEAUX, E YORKS: NORTH GRANGE KILN SITE, TA099405 (grange of Meaux Abbey)

Tile groups, designs:

Plain Mosaic, design 1.13 (Figs 10.15, 10.16). Shape S.3.

Inferior Plain Mosaic, types unknown.

Publications: Eames and Beulah 1956; Eames 1961; Eames 1980, I, 29–30, 34–6.

Extant tiles: English Heritage: c.42 tiles in the Beulah collection (EH/88092442; 88092509; 88092511).

York Minster Library: a few Plain Mosaic tiles from Meaux in this collection appear to be wasters and may have come from North Grange.

Assessment: Excavations were carried out in 1932 by G.K. Beulah and W. Foot Walker and in 1957–8 by G.K. Beulah and E.S. Eames. Three superimposed kilns were discovered within the moated site. The upper two were separated from the demolition debris of the earlier kiln by an 8–10" (200–250mm) clay deposit. Roof tile predominated above this layer and floor tile below it. The concentrations of finds suggested that the earliest kiln had been used to fire floor tiles and the later two to fire roof tile. The demolition debris of the earliest kiln mainly consisted of ash, charcoal and pieces of the kiln structure, and was spread over a wide area about 4" (100mm) below present ground level. The excavation did not produce evidence for sheds or other structures, and these may still be preserved. Beulah's reconstruction drawing of the floor tile kiln, showing how mosaic pieces may have been placed for firing, was deduced from the finds (Eames 1961, fig 44).

The use of the earliest kiln for floor tile production was confirmed by an outline in dripped glaze measuring 3" × 1.25" (75 × 31mm) on a piece of the oven floor of this kiln.

This is the length and depth of the small squares of the Plain Mosaic series at Meaux and no tiles of other series of this size are known from the site. However, it is not now easy to identify many of the tiles actually found here. The floor tile finds from the site were not included in the published report and their relationship with other finds or structures is unknown. It is possible that most of the floor tiles were discovered during trial trenching by Beulah and Walker in 1932. Several tiles of design 1.13 in the Beulah collection and some S.3 squares, fused together during firing, came from the North Grange site. According to G.K. Beulah, tiles from the site included examples of both the best and inferior quality Plain Mosaic work. A mortar, also found in 1923, and now in the British Museum, was below the stoke-hole floor of the roof tile kilns.

The use of roof tile in the construction of the early kiln suggests that roof tile production had already begun here when the floor tiles were made. Other kilns may have existed at the North Grange site. Another possible kiln site was identified in the outer court by Beulah, although the precise location is uncertain. An unscaled sketch shows this as north-east of Abbey Cottage (now destroyed) and due east of a well. A 3" (75mm) layer of burnt earth was found 3'6" (1.05m) below present ground level. Among the finds from the soil above this were part of a kiln support with glaze on it and four pieces of unused Plain Mosaic floor tile.

Dating: The only independent dating evidence from the site was from pottery found above the level of the latest kiln, dated to the 14th or early 15th century.

63. MONK BRETTON PRIORY, S YORKS, SE/373065 (Cluniac until 1281, then Benedictine monks)

Tile groups, designs: **Transpennine**, designs 23.5, 23.17, 23.36 (Fig 22.1).

Publications: Walker 1926.

Extant tiles: Sheffield City Museum: two decorated and 21 plain tiles (1986.302–4).

Assessment: A few tiles were found during the excavations carried out in 1923–6. The two tiles described in the report may be the extant examples of designs 23.17 and 23.36. A tile of design 23.5 was illustrated but is not extant. There is no information about their findspots.

Dating: None.

64. MOUNT GRACE PRIORY, N YORKS, SE/450985 (Carthusian monks)

Tile groups, designs:

Transpennine, designs 23.2, 23.3, 23.12, 23.13, 23.15, 23.17, 23.18, 23.21, 23.24, 23.28, 23.30, 23.32, 23.35, 23.36, 23.40 (Fig 22.1).

Plain-glazed.

Publications: Coppack 1991; Hope 1905; Wilson and Hurst 1970.

Extant tiles: On site: five small areas re-set as shown in Fig 27.28).

English Heritage: 29 decorated and 56 plain or worn tiles (EH/8106368; 81064003; 81064028; 88092789; 88200905–6; 88210048; 88210233–4; 88210240–1).

Assessment: The plan of the site was uncovered by a series of excavations from 1896 to 1903 and an architectural description was published by Hope in 1905. He noted that a 'good deal' of the tile pavement remained under the turf at that time and that the footings of the monks' choir stalls could be 'traced on both sides towards the east through the gaps in the pavement' (1905, 286). He also recorded that the area around the high altar had been paved with 'large black and yellow tiles' (1905, 286).

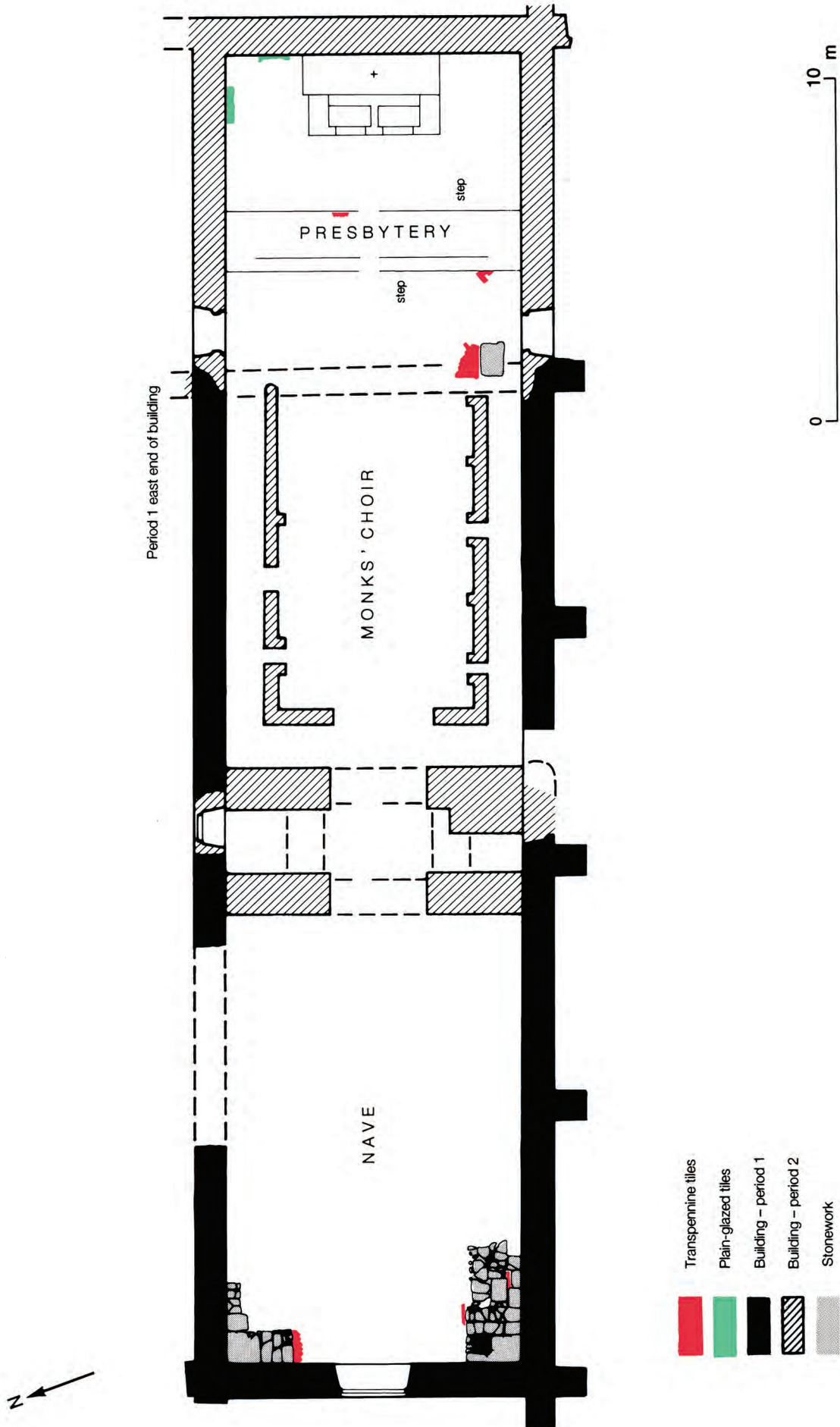


Fig 27.28: Mount Grace Priory church, showing the Transpennine tiles re-set in the extended church and the Plain-glazed tiles in the area of the high altar. The areas of stone flagging in the nave may be remnants of an earlier floor. Although few survive, the remaining Transpennine tiles are laid on the diagonal in a consistent manner throughout the church

The small surviving areas of Transpennine tiles in the church suggest that much has been lost since Hope's time, but the diagonal layout of the various patches is consistent throughout and suggests that they were re-set as found. The condition of the tiles has deteriorated badly. Most of the tiles which remained on site in 1988 were worn or broken but four decorated tiles (designs 23.13, 23.18 and 23.36) and 31 plain tiles could be positively identified. A tile of design 23.13 has now shattered and a snapshot taken in the early 1970s suggests that an adjacent tile had already suffered the same fate. The Plain-glazed tiles on the high altar platform, which are larger than the Transpennine tiles in the body of the church, retain some yellow and dark green glaze.

The remaining tiles therefore accord with Hope's record of the types extant in 1905, though much damaged and reduced in number. No tiles were found in the two monks' cells excavated in 1969 (Wilson and Hurst 1970). Tiles and fragments found during excavations in the area of the Prior's house in 1988–90 were not *in situ* and the majority were from post-medieval contexts.

Dating: Mount Grace was founded in 1398, which gives a *terminus post quem* for all the tiles at the site. The original church, built around 1400, was a simple rectangular structure with its east wall running across the later stone footings of the monks' choir stalls (Hope 1905, 283–7 and plan and see Fig 27.28). This wall was demolished and the presbytery extended in the 1420s or 1430s. As the Transpennine Group paving extended beyond the line of the earlier east wall, this floor must date after the second building phase, to *c.* 1425 or later. The stone flagging to the north and south at the west end of the church could be the remains of the floor in the first church. The Plain-glazed tiles at the east end of the new church might be associated with alterations subsequently made to the presbytery, which included the construction of a new altar (Hope 1905, 286). If so, the Plain-glazed tiles are of a later date than the Transpennine tiles, and the Transpennine tiles date from *c.* 1425 or later.

65. NEWBURGH PRIORY, NR COXWOLD, N YORKS, SE/544765 (Augustinian canons)

Tile groups, designs: **Plain Mosaic**, *c.* 75–80mm squares.

Publications: None.

Extant tiles: A tiled floor in a rectangular, panelled hall, which would have been used by the servants, is re-set on the north side of Newburgh house.

Assessment: A house largely of the 18th century now occupies the site of the Augustinian priory at Newburgh. The re-set pavement measures *c.* 10m by 4m and is made up of worn 75–80mm square Plain Mosaic tiles set diagonally to the room. The pavement is divided into three, lengthwise, by two lines of the same tiles set square with the room. The medieval provenance of the tiles is uncertain. It is not known whether they were found on the site of the priory and re-used at some time after the Dissolution, or whether they were brought in from elsewhere. Other antiquities now at Newburgh include pieces of Anglo-Saxon sculpture which are considered to be post-medieval imports (J. Lang, pers. comm.). Byland Abbey, which had huge numbers of square tiles of the Plain Mosaic series, is only about 3km away. Newburgh was, in addition, granted to Anthony Bellasis, or Bellysis, when the house was suppressed. The Bellasis family worked for Cromwell. Anthony was a lawyer, while his brother, Richard, was responsible for organising the destruction of the monasteries and the sale of the spoils in north-east England. Floor tiles would, therefore, have been readily

available from one source or another to the new owners of Newburgh Priory.

Dating: None.

66. NEWCASTLE UPON TYNE: CARMELITE FRIARY, NZ/248638

Tile groups, designs: **Plain-glazed**.

Publications: Harbottle 1968, 202, fig 12.

Extant tiles: Museum of Antiquities, Society of Antiquaries of Newcastle upon Tyne, University of Newcastle and Tyne and Wear Museum Services: one box (Whitefriars 1982.31 Box 153M).

Assessment: Plain-glazed tiles were found *in situ* in the north and east claustral walks.

Dating: The 125mm tiles in the cloister were thought to date from the 14th century. A single 215mm tile was found in a 15th-century context.

67. NEWCASTLE UPON TYNE: DOMINICAN FRIARY, NZ/244642

Tile groups, designs: **Plain-glazed**.

Publications: Harbottle and Fraser 1987.

Extant tiles: None.

Assessment: Excavations of the post-Dissolution levels of the claustral ranges of the Blackfriars site between 1957 and 1980 uncovered the tiled floors in use at the Suppression. The paving was retained when the monastic buildings were divided up for use as meeting houses for nine craft companies. On the premises of the Bakers and Brewers, the Saddlers, the Taylors, and possibly the Butchers, the medieval tiled floors continued in use into the 18th century. In the medieval period the tiles had been laid in the claustral walks and in at least some of the ground floor rooms of the claustral ranges.

Dating: Pre-Dissolution.

68. NEWCASTLE UPON TYNE: OLD TOWN, NZ/250639

Tile groups, designs: **Plain-glazed**.

Publications: Ellison and Harbottle 1983, 195–6; Harbottle 1966, 142; Harbottle and Ellison 1981, 171.

Extant tiles: Museum of Antiquities, Society of Antiquaries of Newcastle upon Tyne, University of Newcastle and Tyne and Wear Museum Services: tiles from excavations and watching briefs around the castle between 1960 and 1981 (The Bastion 1986.7.5, Box 124M; Castle Ditch/Blackgate 1986.6.103, Boxes 95M, 96M, 97M, 98M, 99M).

Assessment: Fragments of Plain-glazed floor tiles are often found in late medieval contexts in Newcastle. None of the tiles found during excavations in or around the castle was *in situ*.

Dating: Tiles were only found in the upper layers of the filling of the castle ditch. They were not deposited here before the late 14th/early 15th century (Harbottle and Ellison 1981, 171).

69. NEWMINSTER ABBEY, NR MORPETH, NORTHUMBERLAND, NZ/189858 (Cistercian monks)

Tile groups, designs shapes:

Probably **Plain Mosaic**, design 1.7 (Fig 10.15); shapes 3, 6, 16, 17, 18, 20, 47, 48, 59, 114, 283.

Group 8 (Other Decorated Mosaic): designs 8.1–8.4 (Fig 15.1) and other designs known only from Honeyman *et al.* 1929, pls 28–31 (Figs 15.2–15.4).

Unallocated, designs Un/1, Un/3 (Fig 25.4).

Plain-glazed.

Publications: Harbottle 1967, 115; Harbottle and Salway 1964, 154–6 and fig 26, nos 12–18; Honeyman *et al.* 1929; Wellbeloved 1881, III Ta.

Extant tiles: Fragments of floor tile, mainly Plain-glazed, remain visible in the topsoil on the site.

British Museum: 17 tiles, mostly Plain Mosaic (BMC/2068–2084).

Museum of Antiquities, Society of Antiquaries of Newcastle upon Tyne, University of Newcastle and Tyne and Wear Museum Services: four tiles of Group 8 (1928.135, labelled 752a–d).

Chantry Museum, Morpeth: two square 70–75mm tiles, possibly of Group 8, and one Plain-glazed fragment, all from the 1961 excavations (NM61/AA, NM61/AO, NM61/CW).

Assessment: Nineteenth-century excavations at Newminster were noted in an entry in the YPS handbook which mentioned a gift of ‘several small and early tiles’ from the site. These appear to have been given to YPS by the excavation committee in 1878. However, the tiles were not listed in Brook’s inventory compiled in the 1920s and 1930s, and are not now identifiable in the Yorkshire Museum collection.

Large-scale excavations were carried out at Newminster between c.1912 and 1928 at the behest of the then owner, Sir

George Renwick. The report on the intact pavement and loose tiles was published with some excellent photographs and a plan in 1929 (Honeyman *et al.* 1929; see Figs 15.2–15.4; 27.29). The provenance to Newminster of the tiles in the Museum of Antiquaries, Newcastle, is supported by that report, which notes that 17 examples were lent to the museum by Sir George Renwick following the excavations (Honeyman *et al.* 1929, 99). The report also supports the provenance of Plain Mosaic tiles to the site, with descriptions of examples found in ‘what appears to be the transept of the ruined abbey church’ (Honeyman *et al.* 1929, 99). The whole of the small extant collection of Plain Mosaic tiles is in the British Museum.

Further excavations were carried out at Newminster in 1938 but were not published. Few undisturbed floor levels were found when work began again in the 1960s but the excavators managed to reconstruct a plan of the church and main claustral buildings (Harbottle and Salway 1964, 94). One fragment of decorated tile (design 8.2), a few mosaic shapes and some Plain-glazed tiles were found but none was *in situ*. The few extant pieces are in the Chantry Museum, Morpeth.

The intact pavement uncovered in 1929 was tentatively identified as being in the abbots’ private chapel but there was

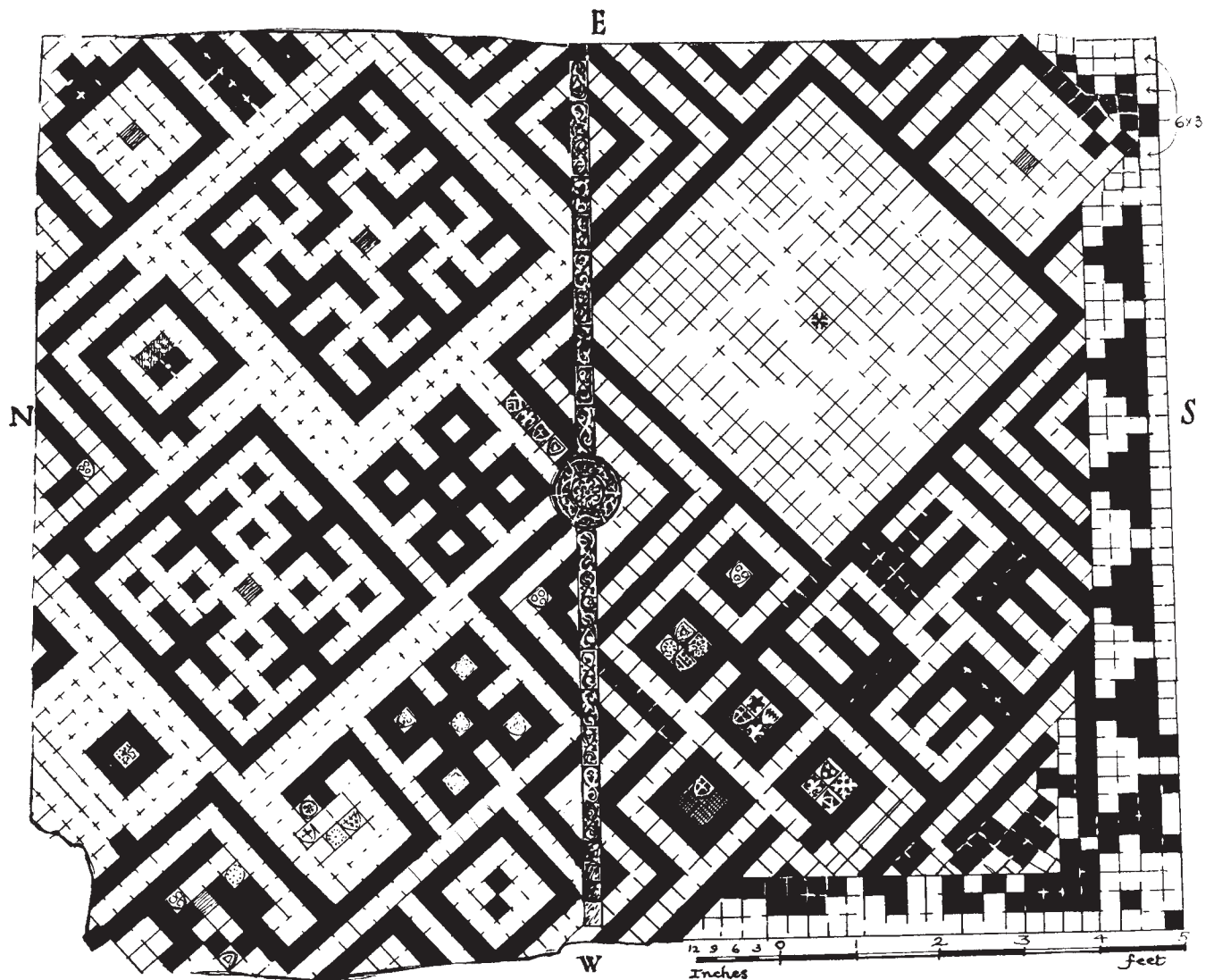


Fig 27.29: Newminster Abbey: plan of the tiled floor with north to the left. The central arrangement is shown in Fig 15.2. Examples of the small square decorated tiles with heraldic and other designs are in Figs 15.3 and 15.4. Honeyman *et al.* 1929. Reproduced courtesy of the Society of Antiquaries of Newcastle upon Tyne

no complete plan of the site and so its precise location is unclear. The building was small, nearly square in plan, and situated south-east of the church and north-east of what was thought to be the infirmary. There was a centrally placed door on the west side. The plan of the pavement (Fig 27.29) shows the floor as rectangular, 4.3m north to south and 3.4m east to west, but this does not include a small raised area (interpreted as an altar platform), probably of wood, which ran along the east side. The walls survived to a few courses and had been skimmed with white lime and decorated with dark red lines, some of which imitated mortar joints. This first decoration was subsequently buried under many coats of whitewash.

The floor was recorded as undisturbed except for the south-east and south-west corners. It appears to have had little in the way of an overall design beyond the small centre-piece and the central division, formed by a single line of rectangular scroll designs (design 8.1) running east-west (Figs 15.2 and 27.29). Either side of this line the floor was composed of c.75mm square tiles, many of which were worn, others coloured either light or dark or decorated with one of the heraldic designs (Fig 15.4). These tiles were laid with slight attention to their overall arrangement. Localised areas formed a coherent pattern, for example where sets of four small heraldic designs were given a surround of dark tiles, but they did not conform to any wider layout. It is as if the tiles had been piled up roughly according to size or type and their arrangement invented as they were picked up for use. A few undecorated rectangles were found on the south side. It seems likely that the pavement was made up of re-used tiles.

The excavators thought that Plain-glazed tiles of various sizes were used in the church at Newminster and examples were uncovered in the transepts. It is possible that the intact floor found in the chapel was made of tiles taken up in the church when that building was given a new floor of Plain-glazed tiles. The excavators suggested that there was extensive re-roofing and reconstruction in the church around the first quarter of the 15th century and it is possible that the chapel floor was laid following this reorganisation.

Dating: An approximate date for the Group 8 tiles has been suggested by the heraldic designs. Hunter Blair's study, in the 1929 report, identified several of the arms in the Glover's roll and St George's roll. These rolls are dated to c.1245 and c.1265 respectively.

70. OLD BYLAND, N YORKS: ALL SAINTS' CHURCH, SE/550860

Tile groups, designs, shapes: **Plain Mosaic**, designs 1.1 (positive and negative versions), 1.7; shapes 4, 11, 36, 104, 110, 114, 156, 176, 270/271, 276, 388, 100mm squares and triangles (Figs 10.14–10.15).

Publications: Eames 1980, 1, 73–4, 80–81; Page 1923; Platt 1969, 226.

Other records: Weatherill c.1930–50 (ref. 21, p.368).

Extant tiles: On site: Plain Mosaic paving in the chancel, between the altar rail and the altar. Much of the floor is made up of Mosaic 24 (the c.100mm trellis). Within this is a small circular arrangement, centrally placed in front of the altar.

Assessment: The Cistercian monks who eventually settled at Byland officially resided at Old Byland for four years, 1143–1147, on land they were given by Roger de Mowbray. One of the drawbacks of the location must have been the absence of a water source. This would have been apparent from the outset and it is possible that there was little incentive for the monks to put up permanent buildings here. However, some medieval ashlar, roof tile and fragments of

glazed floor tile were noted around the village by John Weatherill.

Old Byland has long been thought the likely site of a medieval tiling. This is based on a reference in a chronicle of Abbot Philip, thought to record the construction of a tiling above the River Rye, where a small cell had been built by 1197 (Eames 1980, 1, 34, 73, and note 43).³ It has been presumed that the reference was to Tylas House and Tylas Barn, which lie near the river, about 1.5km north-east of Old Byland. However, despite extensive fieldwork, nothing has been found in the area to support the idea of production here. The results of scientific fabric analysis of tiles from Byland Abbey, carried out as part of this study, support the idea that the Plain Mosaic tiles at Byland were made on land somewhere in the vicinity of the abbey. The location of the tiling at Old Byland has not yet been established.

The presence of Plain Mosaic tiles in the chancel of the parish church at Old Byland has further encouraged the supposition that the floor tiles were made here. These tiles might be misleading because the medieval monastic connections of Old Byland make it a likely site for post-Dissolution re-use of floor tiles from either Byland or Rievaulx. The possibility of re-use is supported by the layout of the tiles, particularly those in the circular arrangement which (incorrectly) include straight-sided triangles. It is notable, however, that the lozenge-shaped tiles (S.36) of design 1.1, which are present at Old Byland, are not known in the extant assemblages from Byland or Rievaulx. This design is only otherwise known from Gisborough Priory.

Dating: Unknown.

71. PONTEFRACT CASTLE, W YORKS, SE/461224

Tile groups, designs: **Plain-glazed.**

Publications: None.

Extant tiles: Several boxes, total unknown, with West Yorkshire Archaeology.

Assessment: Excavations were carried out between 1982 and 1986 but no further information is available.

Dating: None known.

72. PONTEFRACT PRIORY, W YORKS, SE/463226

(Cluniac monks)

Tile groups, designs:

Transpennine, designs 23.1, 23.4, 23.8, 23.15, 23.17, 23.19, 23.20, 23.23, 23.24, 23.27, 23.28, 23.30, 23.34, 23.36 and probably 23.21 and 23.32 (Fig 22.1).

Plain-glazed.

Publications: Bellamy 1965.

Other records: C.V. Bellamy archive, held by the City of Wakefield Metropolitan District Council, Museums and Art Galleries Section.

Extant tiles: City of Wakefield Metropolitan District Council, Museums and Art Galleries Section: at least 16 good quality decorated tiles, plus several plain examples, of the Transpennine Group. There are no extant Plain-glazed tiles from the site.

3 Dugdale 1846, vol 5, p.351: '...in territorio Bellalande super aquam quae vocatur Rye, et ibi construxerunt sibi parvam cellulam ubi eorum tegularia nunc est constructa ...'. The date of the end of Phillip's abbacy is given by Dugdale on p.354: 'Nos vero frater Philippus quondam abbas de Briostel, nunc autem abbas Bellelande et proximi dicti Rogeri successor, haec scripsimus in anno Domini MC. nonagesimo septimo ...'.

Assessment: The assemblage of Transpennine Group tiles in Pontefract Museum are from the excavations carried out in the priory by C. Vincent Bellamy in 1957–63 and 1965–1980. Work carried out before 1962 was published in 1965 with a brief note on the 1962–3 seasons, and an illustration of fourteen Transpennine tile designs (Bellamy 1965, fig 25). Although the examples in the museum are unmarked, several fragments are recognisable as sketched in Bellamy's notes. Two further designs of this series, 23.21 and 23.32, are represented in the Bellamy assemblage but not in the published report. These may have been found during the smaller scale excavations which Bellamy continued until the 1980s but which are unpublished.

The only patterned tiles found *in situ* at Pontefract were those of design 23.36 in the area of the crossing in the church (Bellamy 1965, 34 and 48). Decorated tiles were also found loose in a building interpreted as the abbot's house (Bellamy 1965, 20). Plain-glazed floor tiles of three different sizes were found *in situ* in various locations. They were laid diagonally to the walls in the north-east corner of the cloister and laid in alternate colours in the polygonal chapter house, in a room to the north of the chapter house, and in buildings around the lesser cloister, thought to be part of the infirmary. Some of those found in the infirmary, associated with alterations made in the later 15th or early 16th centuries, had been re-used (Bellamy 1965, 73–5 and 85).

Dating: The Transpennine tiles in the church were thought to relate to the 'middle' floor level and were said to be sealed by later walling, but the absolute dating for this phase is unclear (Bellamy 1965, 104). Of the Plain-glazed tiles, the floor in the room north of the chapter house was overlain with the make-up of a later floor, including quantities of 14th-century pottery, perhaps providing a *terminus ante quem* for the tiles (1965, 67). Some of those in buildings around the lesser cloister were thought to be associated with alterations dated to the later 15th or early 16th centuries (1965, 73–5 and 85).

73. PRUDHOE CASTLE, NORTHUMBERLAND, NZ/092634

Tile groups, designs: **Plain-glazed.**

Publications: None.

Extant tiles: English Heritage: six tiles or fragments, EH/88090570.

Assessment: The tiles were found during a series of excavations in the outer ward directed by Laurence Keen in 1972–3. They occurred in phase 6 and later contexts; none was *in situ*.

Dating: The earliest dated contexts with floor tiles were assigned to between *c.*1400 and *c.*1500.

74. RIEVAULX ABBEY, N YORKS, SE/577850 (Cistercian monks)

Tile groups, designs, shapes:

Plain Mosaic, designs 1.4, 1.7, [?1.16], [?1.18]. Shapes 3–4, 5, 7, 8, 12–13, 17, 22–4, 33–6, 40, 43, 46, 48–9, 51–6, 58, 60, 62–4, 71, 73–4, 98, 100–4, 107, 110, 113–14, 117, 119, 121–2, 129, 138–40, 144–5, 156–7, 159–60, 163–7, 169–70, 172, 175–6, 180, 188, 210–11, 214–16, 218–20, 233–4, 237, 244–5, 266, 268, 270–1, 276, 279–80, 290, 292–3, 296, 300–1, 303, 306, 308, 311–13, 316, 318, 324–5, 328, 329, 331–2, 334–5, 338–40, 342–3, 346, 358, 364, 368–9, 373, 378, 380, 388, 394, 402, 412, 420–1, 425, 429 (Figs 10.1–10.7, 10.14–10.15, 10.20, 27.33, 27.35).

Inlaid, designs 4.1–4.16 (Figs 12.1, 12.2).

Group 5, designs 5.1–5.7 (Figs 12.3, 12.4)

Usefleet, designs 6.1–6.7, 6.9–6.20, [?6.21], [?6.22] (Figs 13.1–13.6, 27.34).

Group 21, 105mm and *c.*80mm squares, with some examples divided variously into rectangles and triangles. Design 21.1 is uncertainly attributed to this group (Fig 21.2).

Transpennine, designs 23.4–23.5, 23.7, 23.8, 23.10, 23.14, 23.15, 23.17–19, 23.24, 23.27–36 (Figs 22.1, 22.4).

Huby/Percy, designs 24.2–24.3, 24.5–24.8, 24.17–24.20, 24.26, 24.30, 24.33, 24.36 (Figs 8.1, 23.1).

Plain-glazed, (Fig 20.3)

Unallocated, fragments in the British Museum collection which are not included further here are BMC/6154, BMD/1092 and BMC/6183, BMD/3076.

Publications: Anon 1821a; Baines 1924; Coppack 1986c; 1999; Eames 1980, I, 72–82, 95–6, 117, 214–15, 269–72; Eames and Beaulah 1956; Hope 1894; Lane 1939, 23; McDonnell 1963, 106; National Trust n.d.; Richardson (1843) reprinted the patch of tiling published by Westall *et al.*, labelling it 'Encaustic pavement in adjoining house'; Stopford 1999; Westall *et al.* 1820, with a plan of Rievaulx and insert of the tiling from Abbey Farm; Wilson and Hurst 1958, 193; 1961.

Other records: Hore 1911, Y128 (ref. 7, p.368); Maw 1863, drawings titled, 'Tile pavement in Duncombe Park removed 50 years ago from front of High Altar Rievaulx Abbey, Yorkshire' and 'Geometric tile pavement. Farm House at Rievaulx Abbey, Yorkshire' (ref. 11, p.368); Office of Works, AA 16260/100 (ref. 13, p.368).

Extant tiles: On site: re-set as shown in Figs 8.1, 10.7, 12.1, 12.4, 13.1–13.2, 13.6, 20.3, 27.30–27.31, 27.34–27.35.

A further pavement is laid in the Tuscan Temple on Rievaulx Terrace at Duncombe Park, now a National Trust property (see further below, entry 75, *Rievaulx Terrace, Duncombe Park*). Less well provenanced, but reputedly also from Rievaulx, are tiles re-set in the vicarage in Helmsley (see entry 39, *Helmsley: Canon's Garth*). A kiln site owned by Rievaulx Abbey at Wether Cote in Bilsdale is also detailed separately (see entry 91, *Wether Cote Kiln Site, Bilsdale*).

British Museum: 173 decorated tiles, large collection of Plain Mosaic (BMC/5422-6337).

English Heritage: 95 boxes of *c.*6500 Plain Mosaic tiles, 22 boxes of plain or worn tiles and 439 decorated tiles (88213803–88213808; 88213631–88213642; 88213646–88213647; 89000008–89000565; Beaulah collection: 88092551, 88092583, 88092634, 88092639, 88092653, 88092660).

Victoria and Albert Museum: 23 Plain Mosaic tiles/fragments donated by W. St John Hope (1541–1904).

Historic Scotland, Melrose Museum, Melrose Abbey, Melrose, Borders: 16 Plain Mosaic tiles in pristine condition, clearly showing the colours of the glaze and other aspects of manufacture (MEL 033-320; Fig 10.20).

Assessment: The provenance of the great bulk of the assemblage is secure since the tiles recovered during Ministry of Works clearance between 1919 and 1929 were either re-set, or put into store, at Rievaulx. Further scrutiny of the records suggests that the majority of the tiles in the loose collections came from the church. The lists of finds made by the Office of Works during clearance operations include five entries which describe individual tiles and their approximate find spots. These probably refer to good quality loose finds set aside for exhibition. Five other entries refer more generally to floor tiles but one of these (no. 87; Fig 27.32) seems

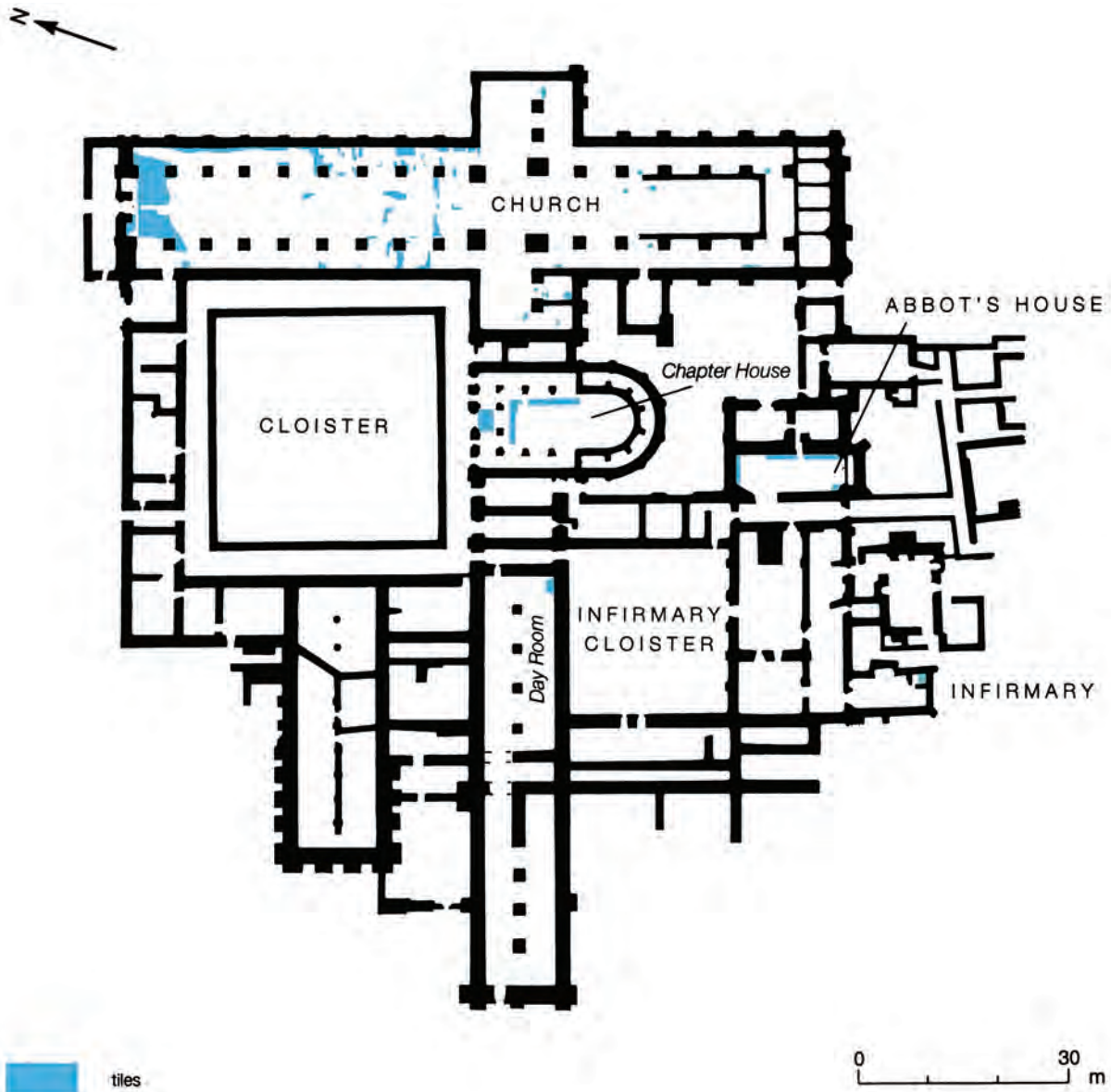


Fig 27.30: Rievaulx Abbey showing the locations of re-set tiles

to relate to the bulk of the material put into store (other than that from Rievaulx Terrace, see further below). This entry specifies that the floor tiles taken up were those found in the nave and transepts at approximately floor level but not *in situ*.

The tiles in the British Museum were acquired as part of the Rutland collection. The lists made by Office of Works officials (including no. 87) refer to the acquisitions made by the Marquess of Granby (later Duke of Rutland). Two entries were annotated in red ink recording that on 28 August 1920 a selection of the tiles went to the Marquess. A further 1cwt was selected on 15 January 1921, and the same amount on 18 March 1922. Correspondence between Granby and Sir Charles Peers, Chief Inspector for Ancient Monuments, shows that by 1923 there was friction between the Marquess and the Clerk of Works in charge of operations at Rievaulx. The Marquess felt he was entitled to the tiles since his friend and owner of the site, the late Lord Feversham, had agreed that if they both lived through the war Granby could excavate at Rievaulx. Further gifts were, however, refused by the Office of Works on the grounds that it was unfair to the young Lord Feversham and the Trustees.

The Office of Works list of finds from Rievaulx also includes an entry for 5cwt of floor tiles found at Rievaulx Terrace, 'in the gardens to the west of the Ionic Temple' (see further below, *Rievaulx Terrace*). The Office of Works note probably referred to surplus tiles discarded on the Terrace after the creation of the floor in the Doric Temple in *c.*1819. A drawing of this floor made by George Maw in 1863 records that the tiles had been removed 50 years before, from in front of the high altar of Rievaulx Abbey. The tiles in the Temple pavement are mainly of Plain Mosaic with a few Usefleet types and other examples. The patches of re-set tiles which remain in the east end of Rievaulx Abbey Church are of the Plain Mosaic and Usefleet Groups (see Figs 27.31, 27.34, 27.35). The provenance of the Terrace tiles to the east end of the church seems safe.

Another piece of paving, recorded by George Maw during his visit to Yorkshire in October 1863, was set in the floor of the farmhouse at Rievaulx. Drawings of this area of Plain Mosaic, which measured *c.*2.5m × 1.5m (8'2" by 4'10½"), had in fact already been published by Westall and Mackenzie in 1819, and Richardson in 1843. Maw's is the last record we

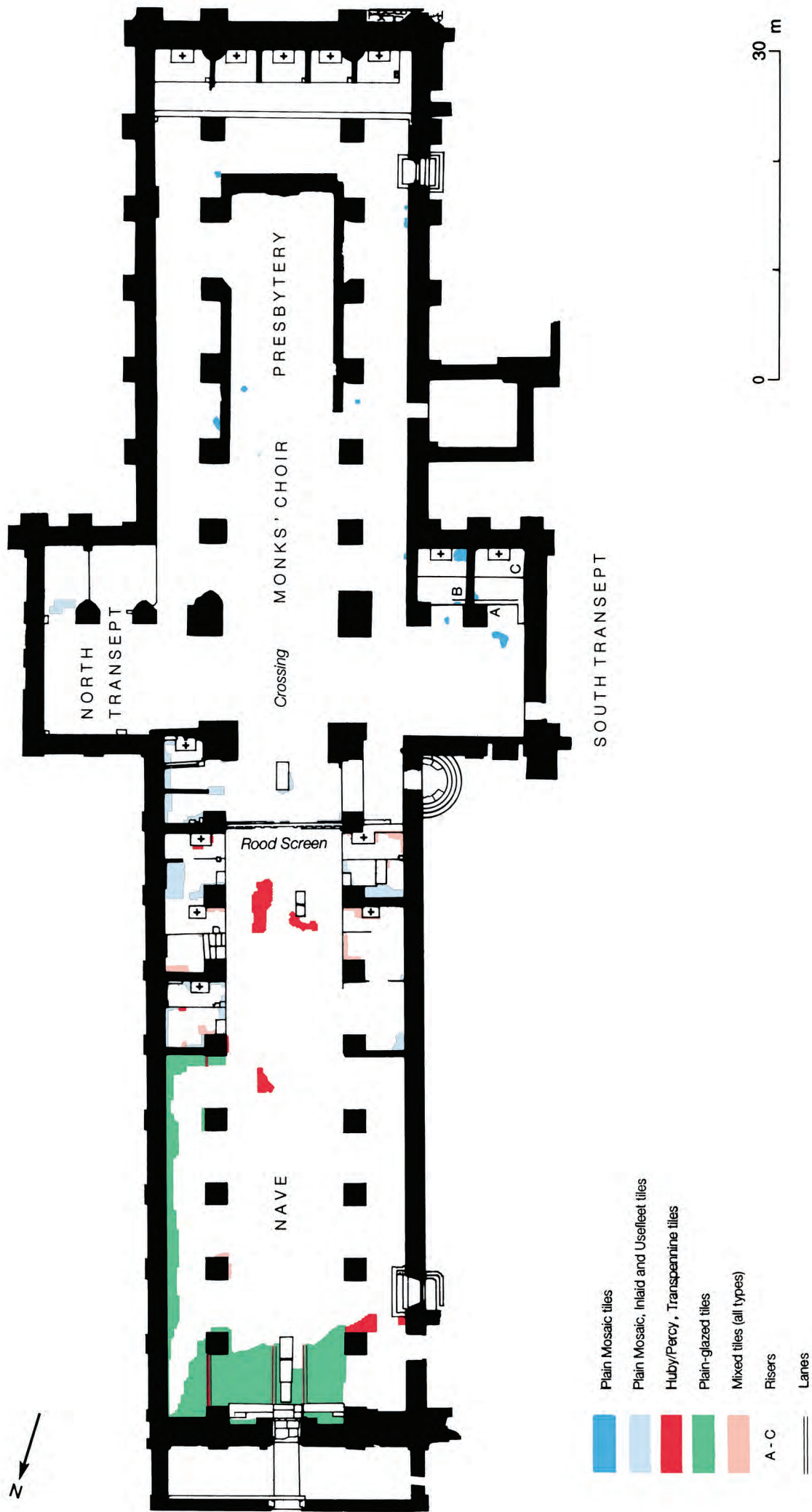


Fig 27.31: Rievaulx Abbey showing the locations of different groups of tiles re-set in the church

Rievaulx Abbey						
Ref. No.	Description of Article	Building	Description of position of finding	Date of discovery	No. & date of Report	Destination
85	Roofing tile (Red Clay) & fragments of pottery	Rere Dochet	at footings of North Wall 4 yds from East Wall.	2.11.20	No 16 Report - 5-11-20	Rievaulx Abbey - in Hall
86	Copper Disc (plain) 1" diameter. also small metal Cap.	South of Doret	at Entrance to main drains channel 3ft below Arch.	18.11.20	No 14 Report - 19-11-20	Rievaulx Abbey - in Hall
87	A considerable quantity of flooring tiles mostly plain	Nave & transepts	approx. at floor level but all thrown out of position & mixed with debris	1919.20	These were loose tiles only duplicate set taken away & remainder at Rievaulx	Rievaulx Abbey - food granary - selected area of floor - 28-8-20. Rievaulx
88	Old Horse shoe & several iron hold fasts also old knives.	Nave	outside North Wall in space 49 - 2ft above Clay level	31.7.20	No 10 Report - 13-8-20	Rievaulx Abbey - in Hall

Fig 27.32: Part of the Office of Works record of finds from Rievaulx Abbey made during clearance excavations 1919–1929

have of it (Fig 27.33). The farmhouse in question is thought to be Abbey Farm, shown on the 1920s deeds of Rievaulx, located to the south-west of the church overlying part of the infirmary/abbot's lodging buildings. It was demolished in the 1950s and the tiles were lost. Nothing is known about the medieval location of these tiles.

Outside the church, a c.1m² patch of Inlaid tiling was found during excavations in the 1950s in a cupboard in one of the rooms adjacent to the infirmary and are reset in this location (Fig 12.1). The room was interpreted as a kitchen on the basis of the finds, belonging to the last phase of building in the monastery's history (Wilson and Hurst 1957, 193). In the Day Room, the Plain Mosaic tiles rely on broken tiles to form their pattern, showing that they were re-used in this location. The Plain-glazed tiles re-set in the Abbot's House are of the same type as those in the westernmost bay of the church (Fig 20.3).

Dating: The date of construction of the enlarged east end of the church at Rievaulx provides a *terminus post quem* for the use of Plain Mosaic here. Hope suggested that most of the new presbytery was built around the old east end while it was still in use. The old east end extended two bays east of the tower (1894, 9–11). The integration of Plain Mosaic risers in the stonework of the chapel steps in the south transept (Fig 27.35) suggests that the pavement was installed as part of the fitting out of the new church and probably dated soon after its completion. A recent reassessment of this site puts this rebuilding in the second quarter of the 13th century (Fergusson and Harrison 1999, 151–74).

In the nave chapels, tiles of the Usefleet Group are overlain by stonework in at least two instances, and in a further case are used with what is probably 13th-century stone, cut to take Plain Mosaic risers (tiles of design 6.19 are set as

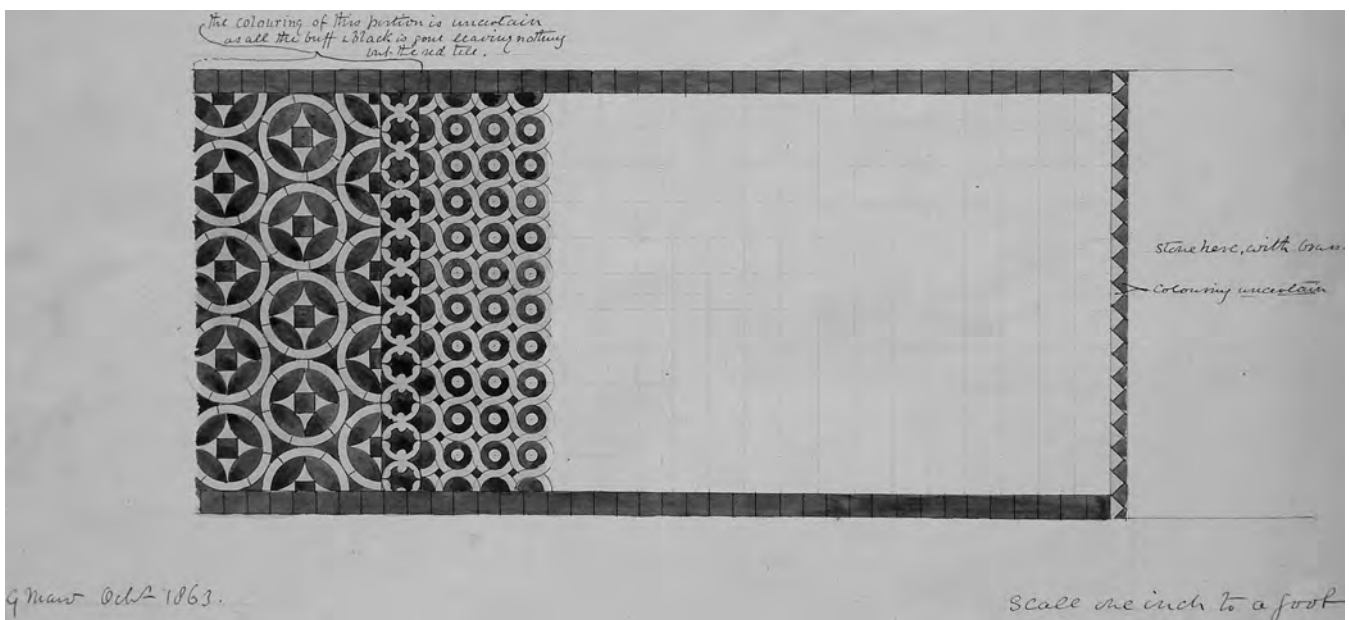


Fig 27.33: Plain Mosaic: paving once in the farmhouse at Rievaulx, drawn by G. Maw 1863



Fig 27.34: Rievaulx Abbey: Usefleet Group tiles in the north transept. Traces of decoration remaining on some of these worn tiles suggest a possible layout alternating design 6.12 and plain dark green or black examples

risers in the second chapel on the north side). These chapels include much re-used 13th century stonework (Stuart Harrison, pers. comm.) and have clearly been subject to a number of alterations, first with access along the nave walls, later with access from the nave. If any of the relationships between the stone and the tiles are medieval in origin (and it is noted in Chapter 26 that, in general, the relationship between stone and tiles cannot be considered reliable), a major phase of alteration to the chapels post-dated the Usefleet tiles.

In the western bays of the church, tiles of the Plain Mosaic, Inlaid and Transpennine Groups were re-used to divide up the Plain-glazed pavement, forming single lines of tiles running east-west down the church. The Plain-glazed paving must post-date these re-used tiles and pre-date the Dissolution of the abbey. As noted, the same Plain-glazed tiles were used in the Abbot's House. They must, therefore, also post-date the creation of the Abbot's House through a major reorganisation of the infirmary, which was carried out in the time of Abbot John Burton, 1489–1510 (Fergusson and Harrison 1999, 132–5). The Plain-glazed tiles can therefore be dated to c.1500.



Fig 27.35: Rievaulx Abbey: Plain Mosaic step risers in the south transept chapels, M.15 (Area B on Fig 27.31) and M.87 (Area C on Fig 27.31)

75. RIEVAULX TERRACE, DUNCOMBE PARK, N YORKS, SE/578844

Tile groups, designs:

Plain Mosaic, design 1.7 (Fig 10.15). Shapes not recorded.

Usefleet, designs 6.9, 6.15 (Fig 13.13).

Publications: National Trust n.d.; Stopford 1999.

Other records: Maw 1863, drawing titled 'Tile pavement in Duncombe Park removed 50 years ago from front of High Altar Rievaulx Abbey, Yorkshire' (ref. 11, p.368); Weatherill c.1930–50 (ref. 21, p.368).

Extant tiles: Re-set on site: a pavement in the Doric Temple, as shown in Fig 27.36.

Assessment: The Terrace was an 18th-century addition to the landscaped grounds of Duncombe Park, created by Thomas Duncombe, an ancestor of the Lords Feversham. It runs for c.1km along the steep-sided valley to the geographical east of the abbey, providing spectacular views of the monastic ruins below. A temple was built at either end, one Ionic and one Doric. The floor of the Doric ('Tuscan') Temple at the southern end is paved mainly with Plain Mosaic but also includes a Usefleet tile of design 6.15 and c.12 pieces of other tile groups. As noted in the entry for *Rievaulx Abbey* above, the tiled floor was drawn by George Maw in October 1863 (Fig 27.36). In the caption to his drawing, Maw noted that the tiles had been removed, 50 years before, from in front of the high altar of Rievaulx Abbey. The 5cwt of loose tiles found on the Terrace by the Office of Works in the 1920s is thought to be the surplus dumped after the Temple floor was constructed. At a much later date, John Weatherill attributed a loose tile of design 6.9, kept at the Terrace, to the choir of the abbey. All the tiles on Rievaulx Terrace are, therefore, well provenanced to the church of Rievaulx Abbey.

Dating: The Terrace was laid out by Thomas Duncombe in 1758 (Pevsner 1985, 307). George Maw's record of 1863

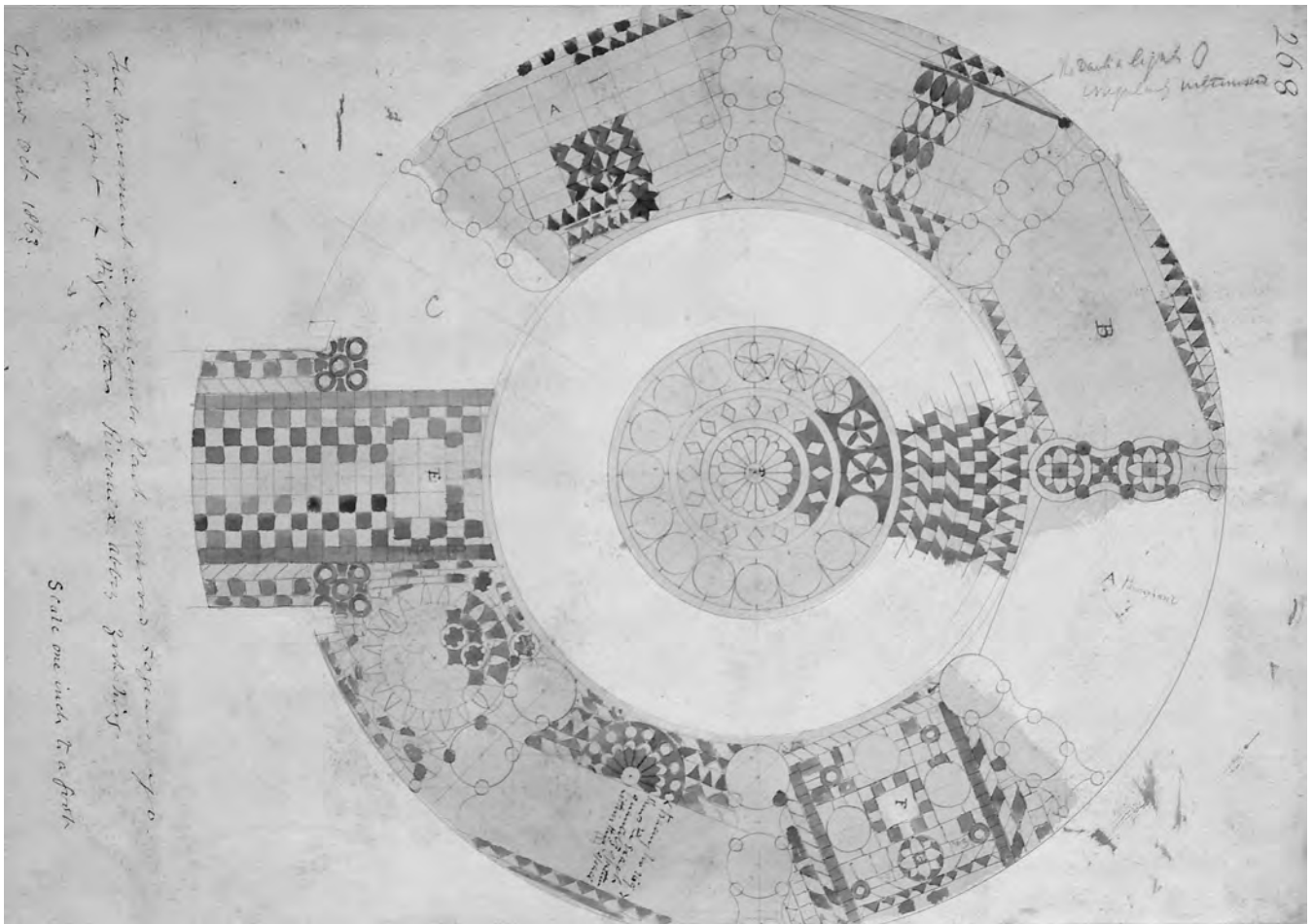


Fig 27.36: Rievaulx Terrace: plan of Plain Mosaic tiles from Rievaulx Abbey re-set in the Tuscan Temple in Duncombe Park, drawn by G. Maw 1863. The pavement ingeniously displayed a series of 'samplers' of what were usually rectangular Plain Mosaic arrangements fitted into the circular space. Although under cover, it is now almost completely worn

suggested that the tiles had been taken from the abbey church in c.1819. Extensive excavations by Charles Duncombe, west of the choir, were recorded in 1821 in the *Gentleman's Magazine*, and a note in an early guide book also stated that the pavement in the Temple was removed from the choir of the abbey in 1819 (National Trust, n.d.). The tiles were an earlier 19th century addition to the Temple.

76. ROSSINGTON MANOR, NR DONCASTER, S YORKS, SK/625985

Tile groups, designs:

Nottinghamshire, designs 15.1, Wh/35, Wh/44, Wh/54, Wh/70a. Possibly Wh/40 (Figs 18.1, 18.2).

Publications: Nichols 1845; 1865; Renaud 1892, 8, fn.; Wellbeloved 1852; 1881, Xtd.

Other records: Renaud 1887–8, vol 3, 310, 311, 312 (ref. 17, p.368); Brook c.1921–36, nos 171, 175, 177, 248, 252.

Extant tiles: Yorkshire Museum collection: Brook/171, 175 and 252, all design Wh/70a. It is possible that other tiles in the museum collection are from Rossington (there are extant examples of Wh/35, Wh/54 and design 15.1, as well as several additional examples of Wh/70a) but these cannot now be provenanced with any confidence. Some examples have what Brook thought were Cook collection labels stuck on them but they are not provenanced by Cook. Tiles of the Nottinghamshire Group are known from several other sites in York, including St Mary's Abbey.

Assessment: The Rossington tiles, particularly those with heraldic designs, attracted great attention among 19th-century antiquarians. Full-sized (and later at a reduced scale) drawings of some of the designs and details of the circumstances of the find, were published by John Gough Nichols (1845; 1865). Despite this early interest, and the unusually detailed record, there remains some doubt about the actual number and precise identity of the tiles found at Rossington. There is no drawn record of all the designs said to have been found there. That six designs were found (five heraldic, and one foliate) is set out in a letter dated 1864 by Charles Jackson, published in 1865 in the *Herald and Genealogist*. This letter explains that the tiles were discovered in 1836 by workmen who were searching for hardcore to mend roads amongst the ruins of an old moated mansion in the Park at Rossington. The house stood at the west end of the village in a field called Draw-Dykes, near the River Torne. The tiles were exhibited by Charles Jackson's uncle (Henry Bower of Doncaster) at the Society of Antiquaries in 1837, although not recorded in the minutes. They were given by him to the YPS museum in 1839. A gift of nine tiles from Rossington, of five designs, was recorded in the first edition of the YPS handbook. Designs on four of the tiles were listed as the arms of Mauley, Deincourt, Cantilupe and Fitzwilliam, the other five tiles having a foliate, scroll-work design.

By the time of the 1881 Society handbook, however, five coats of arms were said to be represented on tiles from

Rossington in the museum collection; Mauley, Deincourt, Cantilupe, Quincy and Fitzwilliam. Five heraldic designs accords with Jackson's letter of 1864. However, in the *Herald and Genealogist*, Jackson's letter was only accompanied by drawings of four heraldic designs. These were of Wh/35 (Mauley), design 15.1 (family not identified), Wh/54 (Deincourt) and Wh/44 (Fitzwilliam). Previously, in Nichols' *Specimens* (1845), only three heraldic designs had been published as held by the YPS (Wh/35, Wh/44 and Wh/54), and these were wrongly provenanced to St Mary's Abbey, York; an error that Nichols corrected in the text. The identity of design 15.1 as Cantilupe was recorded by Renaud in c.1887. Renaud drew this design and examples of Wh/35 and Wh/54 as in the Yorkshire collection, although he later also referred to an additional design, the arms of Ferrers, on a tile from Rossington Church (1892, fn 8).

Tiles of designs Wh/35, Wh/44, Wh/54, 15.1, and the foliate design Wh/70a are therefore reasonably well provenanced to Rossington. The attribution of a further tile with a design of the arms of Quincy (Wh/40) is only supported by later 19th-century editions of the Society handbook. This design (Wh/40) was, however, one of only four tiles that Brook felt able to attribute to Rossington (the other three are of the foliate design Wh/70a; Brook 171, 175, 252; the lack of interest taken by the antiquarians in the foliate design is notable). Brook identified the arms of Wh/40 as those of Fitzwilliam (not Quincy; Brook/177) – in contrast to Nichols, who had identified Wh/44 as Fitzwilliam. This difference of opinion may shed light on the problem. According to Renaud, Nichols' identification of Wh/44 as the arms of the Fitzwilliam family was correct, but his published drawing was incorrect. Nichols did not recognise the heraldic label, and instead showed diapering over the whole shield. The drawing, with the diapering rather than the label, could easily be confused with Wh/40, particularly where the heraldry is concerned. The heraldry of Wh/40 belongs to another line of the Ferrers family, who were identified as Quincy by some later authorities (Parker 1932, no. 8).

It is uncertain, then, whether or not designs of both Wh/40 and Wh/44 were actually found at Rossington. The first YPS handbook does not list Quincy. However, the nephew of the donor seemed to be attempting to set the record straight when he detailed that five heraldic designs, and six designs in all, had been found. It is possible that the difference between the two designs, particularly when seen on fragmentary or worn tiles, was not established until the work by Llewelyn Jewitt, Frank Renaud and others had gathered pace in the north midlands. Clarification may have come following the discovery of better examples of some of the same designs at the medieval kiln site of Repton, Derbyshire, in 1868. The provenance of both Wh/40 and Wh/44 to Rossington must remain a possibility.

Dating: Discussion of the heraldry of the most securely provenanced Rossington designs by Nichols and Renaud suggested a date in the earlier 14th century.

Wh/35 (or, on a bend sable, three eagles argent). The Mauley arms are not found in the rolls of Henry III or Edward I but are attributed to Robert Mauley in the roll of Edward II, suggesting 1307 as a *terminus post quem* for the design. The Mauleys were Lords of Doncaster and owners of the house where the tiles were found. Until the fire of 1829 there was an effigy of Robert Mauley in the south nave aisle of York Minster, and several members of the Mauley family, identified by their arms, were represented in the middle window in the south aisle of the Minster (both recorded by

Withy in 1640). The window is dated to the early 14th century on the basis of the mail and armour. In Bainton Church, near Driffild, there is an effigy attributed to Edmund Mauley, Robert's brother, killed at Bannockburn in 1314. The male line of the Mauley family ended in 1415. The date of design Wh/35 might therefore be between 1307 and 1415. The Rossington manor was licensed to Warenne in 1331, reverting to Peter de Mauley, the 5th Lord Mauley, in 1347 (Doubleday and Walden 1932, 8, 554–71). If the celebration of the family arms in a tiled floor was contemporary with other extant displays of their status, an earlier 14th century date might be thought more likely than a later one.

Wh/54 (azure, a fess dancette between ten billets or). These arms, which appear in rolls of Henry III onwards, and are described in the poem about the siege of Caerlaverock in 1300, are usually attributed to Deincourt. Parker suggests, however, that this design can be interpreted as the arms of either Deincourt or Bassilly (1932, 92).

Design 15.1 (gules, a fess vair between three Leopard's heads jessant-de-lys or). Interpreted by all authorities as Cantilupe of Ilkeston as recorded in the Caerlaverock roll of 1300.

77. SAWLEY ABBEY, LANCS, SD/776464

(or Salley, Sallay; Cistercian monks)

Tile groups, designs:

Plain Mosaic, shapes 2, 16, 36, 48, 54, 58, 60, 163, 264, 333, 337, 350, 355–6 361, 391, 403 and [?308], [?368]; c.110mm squares (Figs 10.8, 10.14).

Transpennine, designs 23.1, 23.13, 23.18, 23.24, 23.29, 23.33, 23.36, [23.41]. Probably also designs 23.9, 23.14, 23.23, 23.27, 23.32, and 23.2 or 23.3 (Fig 22.1).

Huby/Percy, design 24.33 (Fig 23.1).

Either **Transpennine or Huby/Percy**, design 23.28 or 24.35.

Unallocated, possibly Transpennine, design Un/12 (Fig 25.4).

Publications: Harland 1853; McNulty 1931–2; Raine 1891, IIITc; Richardson 1843; Walbran 1851, 287; 1852, 81–3; Wellbeloved 1881, IIITc. The plates intended for Walbran's 1852 paper were not published. The paper was republished by the Surtees Society in *Memorials II*, 159–177, but again without plates.

Other records: Brook c.1921–36, nos 165, 167, 168, probably nos 162 and 164; Renaud 1887–8, vol 3, 317 and 318 (ref. 17, p.368).

Extant tiles: On site: re-set as shown in Fig 27.37, with a Plain Mosaic trellis arrangement (M.24) in the northernmost chapel of the north transept and the southernmost chapel of the south transept. In a few places plain tiles of Transpennine type have been used instead of the Plain Mosaic squares in the trellis arrangements. Three small patches of plain or worn tiles, probably of Huby/Percy type, are re-set in the body of the north transept.

English Heritage: 150 Plain Mosaic tiles, four decorated and eleven plain tiles of the Transpennine Group; 17 plain tiles of Huby/Percy type (EH/88092570–7; 88092580; 88092582; 88213466–88213475; 88213466–88213476; 851903–851913).

City Museum, Lancaster: two Huby/Percy tiles of design 24.33 and five plain Huby/Percy and Transpennine tiles, donated by J.R. Charnley of Preston, c.1950, said to have come from Walbran's excavations at Sawley in c.1850.

Yorkshire Museum: the tile of design 23.39 (Brook/165) is securely provenanced but several other Transpennine Group examples in the collection probably also originated from Sawley (see discussion in Chapter 26).

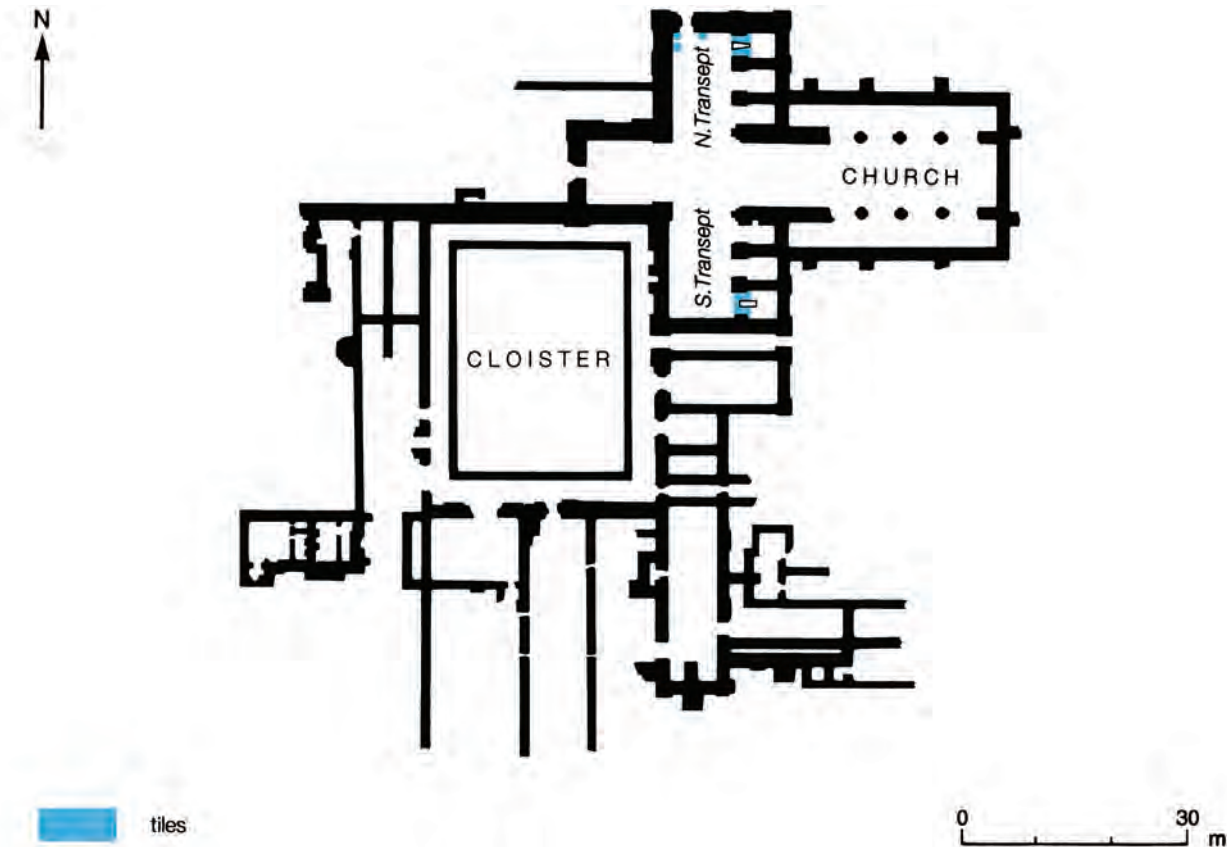


Fig 27.37: Sawley Abbey showing the locations of re-set tiles

Assessment: Walbran's descriptions of the tiles from his excavations at Sawley suggested that the Transpennine Group designs 23.36, 23.34, 23.39 and 23.33 had been found, as well as some tiles with a 'hunting scene' with dogs and stags (possibly tiles of the Transpennine Arrangement 1, of which design 23.1, recorded by Renaud as from this site, is a part). Walbran also recorded the presence of the extant Plain Mosaic trellis arrangement (M.24) and stated that Plain Mosaic roundels of M.65 type were found in the middle chapels of the transepts. The roundel in the south transept was noted as being 'in perfect condition' and similar to the one found at Meaux in 1760 (M.65; Fig 27.22). Walbran also found a few plain tiles in the north aisle of the new choir, built shortly before the Reformation (these may be the re-set Huby/Percy tiles).

The presence of two Plain Mosaic roundels at Sawley was confirmed by Richardson, who published a complete M.65 roundel and half of a variation (Fig 10.8). The caption reads 'An encaustic tile pavement in one of the chapels, one placed anglewise in square chapel and one square'. Walbran's text suggested that the anglewise variant was in the centre chapel of the north transept and was not found in good condition. Richardson also published representations of designs 23.13, 23.18, 23.36.

The M.65 roundel found in the centre chapel of the south transept at Sawley Abbey was also published by Harland in 1853, along with some two-colour designs from the body of the south transept and the crossing. These drawings are confusing as, to the modern eye, they look like representations of line impressed tiles. Some can be identified as showing designs 23.13, 23.24, 23.28 and design 23.36. Three other designs are probably 23.18, 23.23 and 23.27, but might be variations. These repeat the three designs

published by Richardson and some of those mentioned by Walbran. All the decorated tiles recorded by antiquarians at Sawley could belong to the Transpennine Group, although designs 23.36 and 23.38 could also be Huby/Percy tiles. Design Un/12 is known only from Harland's engraving and is likely to be only an approximate representation of the actual design. Harland also noted that there were tiles in the middle and north chapels of the north transept but does not comment on their type.

The current whereabouts of many of the tiles described in the antiquarian record is not known. There are now no Plain Mosaic tiles of the M.65 roundel at Sawley. A few worn examples of these shaped tiles are extant in the loose collections. The provenance of individual Transpennine Group tiles from Sawley and Fountains in the Yorkshire Museum has been uncertain from an early date (as discussed in Chapter 26) and there have been other opportunities for the assemblages from these sites to become mixed. As noted in entry 29 for Fountains Abbey, tiles found at Sawley were moved to Fountains in the 19th century. Examples from Sawley, either from Walbran's excavations or later clearances, were in the English Heritage store at Fountains until recent times.

Further examples of Plain Mosaic, Transpennine and Huby/Percy tiles were found in unstratified or post-medieval contexts during excavations in 1979 and 1984.

Dating: None. After foundation in 1147.

78. SCARBOROUGH CASTLE, N YORKS, TA/050891

Tile groups, designs:

Decorated Mosaic, shaped-tile designs 7.1, 7.3, 7.5, 7.13, 7.14, 7.29, 7.30; undecorated shape 440 (Figs 14.1a–b, 14.14).

Decorated Mosaic square tile designs 7.75, 7.84, R7.85, 7.86, 7.117, 7.123, 7.128, 7.133, R7.133, 7.138, 7.161, 7.162, 7.171 (Fig 14.1g-i).

Plain-glazed.

Publications: DoE 1980; Rowntree 1931.

Other records: Information from Dr Grace Simpson, F.G. Simpson's daughter, and design drawings by David Glendinning (1980).

Extant tiles: Scarborough Museums Service: 24 Decorated Mosaic and one Plain-glazed tile.

Assessment: The Decorated Mosaic tiles were found during excavations by F.G. Simpson at Scarborough Castle between 1919 and 1927. The excavations uncovered the remains of a series of three chapels built on the east side of the castle enclosure, near the cliff edge, on the site of a Roman signal station. It is thought that the first of the chapels was built around 1000 and made use of part of the ruined wall of the signal station (Rowntree 1931, 4 and 51-2). The second chapel, larger than the first and highly decorated, was built on the same site. The floor tiles were not found *in situ* but were thought to have been associated with this phase of use. It is thought this chapel was destroyed in the early 14th century, and replaced by a third chapel and a small priest's house.

The chapel at Scarborough Castle was under the control of the Cistercian mother house at Cîteaux from 1198, along with all the other religious appointments and establishments in the town (Talbot 1960). This royal gift was intended to provide financial support for the abbots at the General Chapter. Cîteaux lost the castle chapel as a source of revenue when it was seized by the king in 1312. Piers Gaveston was besieged here and eventually surrendered. The third chapel is thought to have been built shortly after this date. The Decorated Mosaic tiles from the second chapel could, therefore, have either been the work of the Cistercian proctor or of a royal administrator.

Dating: On the basis of the excavation, the Decorated Mosaic tiles at this site could date between 1140 and the early 14th century.

79. SCARBOROUGH, N YORKS: NORTH CLIFF, TA/043892

Tile groups, designs:

Uncertain provenance: **Group 3**, design 3.1 (Fig 11.2).

Publications: None.

Extant tiles: Yorkshire Museum: one tile (2000.4262).

Assessment: The example of design 3.1 in the Yorkshire Museum and two fragments of roof tile and a waster (three pieces of roof tile fused together) all have old labels saying they were found in a 'manufactory for pottery on the North Cliff Scarborough. Autumn 1855'. There is no mention of these finds in contemporary editions of the YPS handbooks or in Brook's inventory.

Dating: None.

80. SCARBOROUGH, N YORKS: NORTHSTEAD MANOR HOUSE, PEASEHOLM, TA/036896

Tile groups, designs: Unknown.

Publications: Sheppard 1913.

Extant tiles: None.

Assessment: Part of a tiled floor was found in one of a complex of buildings and enclosure walls excavated in 1910-11 in the fields surrounding the mound at Peaseholm, at the north end of Scarborough. The area was being turned into an ornamental lake. Other medieval finds included a coin of Edward I (1272-1307), limestone roof slates, 13th- and 14th-century pottery and 14th-century stained glass.

The floor tiles were described as 125mm square and about 25mm thick. There was no mention of decoration; presumably they were either Plain-glazed or worn. Their present whereabouts is unknown.

Dating: None.

81. SCARBOROUGH, N YORKS: PARADISE ESTATE, TA/048891

Tile groups, designs:

Usefleet, design 6.1 or 6.2 (Fig 13.3).

Other of unknown type, possibly **Plain-glazed**.

Publications: Varley 1972.

Other records: Pearson 1988, 5 and 7; 1989.

Extant tiles: Scarborough Museums Service: three fragments.

Assessment: Varley's note recorded the discovery of six skeletons inside and outside St Mary's Church, Scarborough, in 1970, with '13th-century tiles' among the small finds. The present whereabouts or types of these tiles is not known. The three extant Usefleet fragments were found in trenches to the north of Paradise Street, east of St Mary's parish church, during evaluation work on the Paradise Estate by Scarborough Archaeological and Historical Society in 1988. This area was interpreted as medieval gardens, with the 'Paradise' name thought possibly to suggest monastic ownership.

In another evaluation trench, an area of tiled floor was found *in situ* in what had been a substantial stone building on the corner of Paradise Street and Church Stairs Steps, about 30m from the parish church. A plan of the area in the interim report shows these tiles as *c.* 130mm square and they are described as glazed. Their size suggested that they were not like the extant Usefleet fragments from near St Mary's Church and the absence of decoration suggested that they might be Plain-glazed. They are presumed to have been reburied.

Dating: None.

82. SELBY, N YORKS, SE/614324

Tile groups, designs: **Plain Mosaic**, shape 7.

Publications: None.

Extant tiles: MAP Archaeological Consultancy Ltd, Malton: one tile (GSS97.3005).

Assessment: A single tile was found during excavations on the Abbey Walk site (16 Gowthorpe) in 1997. Post-excavation work is ongoing.

Dating: None.

83. SHAP ABBEY, CUMBRIA, NY/548153

(Premonstratensian canons)

Tile groups, designs: **Group 32**, designs 32.1-32.4 (Fig 25.1).

Publications: None.

Extant tiles: English Heritage: about 50 tiles and fragments thought to come from Shap Abbey.

Assessment: Excavations by Hope were carried out here in 1885-6 but no tiles were mentioned in the report (Hope 1889, 286-314). Hope noted that there had been earlier excavations, when the whole church was cleared of rubbish. Further work was done by the Office of Works in 1956-7 (Wilson and Hurst 1957, 153-4; 1958, 193) and it is most likely that the tiles now in English Heritage storage were found at that time.

Dating: None.

84. STOCKTON CASTLE, STOCKTON-ON-TEES, TEESSIDE, NZ/446186

Tile groups, designs: **Plain-glazed**.

Publications: Vyrer 1988, 182.

Extant tiles: Dorman Museum, Middlesbrough Museum Services: two fragments, thought to come from Stockton Castle.

Assessment: The floor tile fragments were found in destruction deposits on the site of the Bishop of Durham's manor house during excavations by F.A. Aberg/Leeds University in 1966. Fifty-seven fragments were deposited with Stockton Museum following excavation but their precise whereabouts is uncertain following local government reorganisations in 1968, 1974 and 1996.

Dating: The contexts with floor tile could have been medieval or post-medieval.

85. THORNHOLME PRIORY, N LINCS, SE/968125 (Augustinian canons)

Tile groups, designs: **Plain-glazed.**

Publications: Coppack forthcoming.

Other records: Fowler c.1868–1872 (ref. 5, p.368).

Extant tiles: English Heritage: one fragment (EH/88092656).

Assessment: A note in the Fowler archive records tiles found during an excavation at Thornholme Priory in 1868. Two patches of square Plain-glazed tiles were uncovered, along with some stone flagging and architectural fragments. In one patch the tiles were 7" (175mm) across and in the other they measured 9" (225mm). They were unworn with a clear yellow, dark brown or greenish glaze and all *in situ* examples were lying with joints parallel to the walls, rather than on the diagonal. The lower surfaces of the tiles had no keys. This careful description is all that is known of these excavations. On another scrap of paper there is a list of pertinent questions, which includes 'Where are the excavations?' Further excavations, in the 1970s, uncovered tiles in the north transept which are thought to have been re-buried.

Dating: None.

86. THORNTON ABBEY, N LINCS, TA/115190 (Augustinian canons)

Tile groups, designs, shapes:

Plain Mosaic, shapes 7, 15–16, 19, 27–8, 37, 46–9, 55, 65, 107, 133, 171, 207, 377, 393, 406, 411 (Fig 10.14).

Decorated Mosaic, undecorated shapes (completely worn, no decoration visible) 443–5, 450, 452 (Fig 14.14).

Decorated Mosaic, square tile designs 7.75, 7.92, 7.98, 7.114, 7.122, 7.146, 7.152, 7.156, 7.157, 7.159, 7.162, 7.165 and possibly 7.103 (Figs 14.1g, 14.1i, 27.40).

Huby/Percy, designs 24.32, 24.34, 24.36 (Fig 23.1)

Group 29, designs 29.1, 29.3, 29.4 (Figs 24.5, 24.6).

Plain-glazed (Fig 20.2).

Other, rhombic-shaped tiles, see below.

Publications: Beulah 1982; Boyle 1897; Byron 1854; Eames 1980, 1, 36; Hobson 1903, 13, A79; Lowe 1852–3, 159; Major 1946; Parker 1845, 357–64.

Extant tiles: On site: re-set as shown in Figs 27.38–27.39. In the crossing of the church, patches of worn tiles of several different series are set among gravestones and flagstones. They include three abraded tiles of Huby/Percy type, one of which is the only extant example of design 24.32. In the north transept of the church, worn tiles of 115mm square (possibly Decorated Mosaic) are interspersed between the 15th-century grave slabs. There are no tiles in the nave. Three patches of highly fired Decorated Mosaic square tiles are re-set in the refectory undercroft (Fig 27.40 shows one of these) and an area of c.1m² of unusual rhombic-shaped tiles about a brick-built partition across this building. The rhombic tiles are now badly decayed, but included 11 recognisable designs when they were published by G.K. Beulah (1982, 23–7). This group of tiles is unknown north of the Humber but has links with St Albans (see Eames 1980, 2, 130–1). They are not discussed further in this study. In the east walk of the cloister there is another block of tiles, all of design

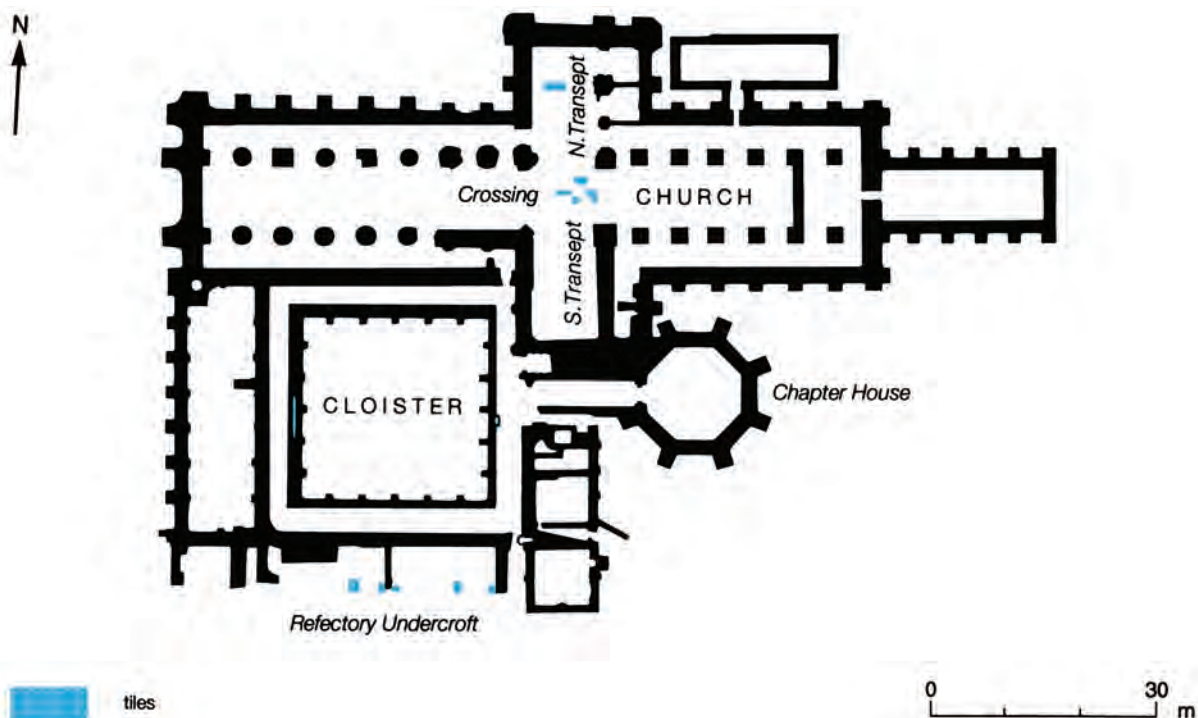


Fig 27.38: Thornton Abbey showing the locations of re-set tiles

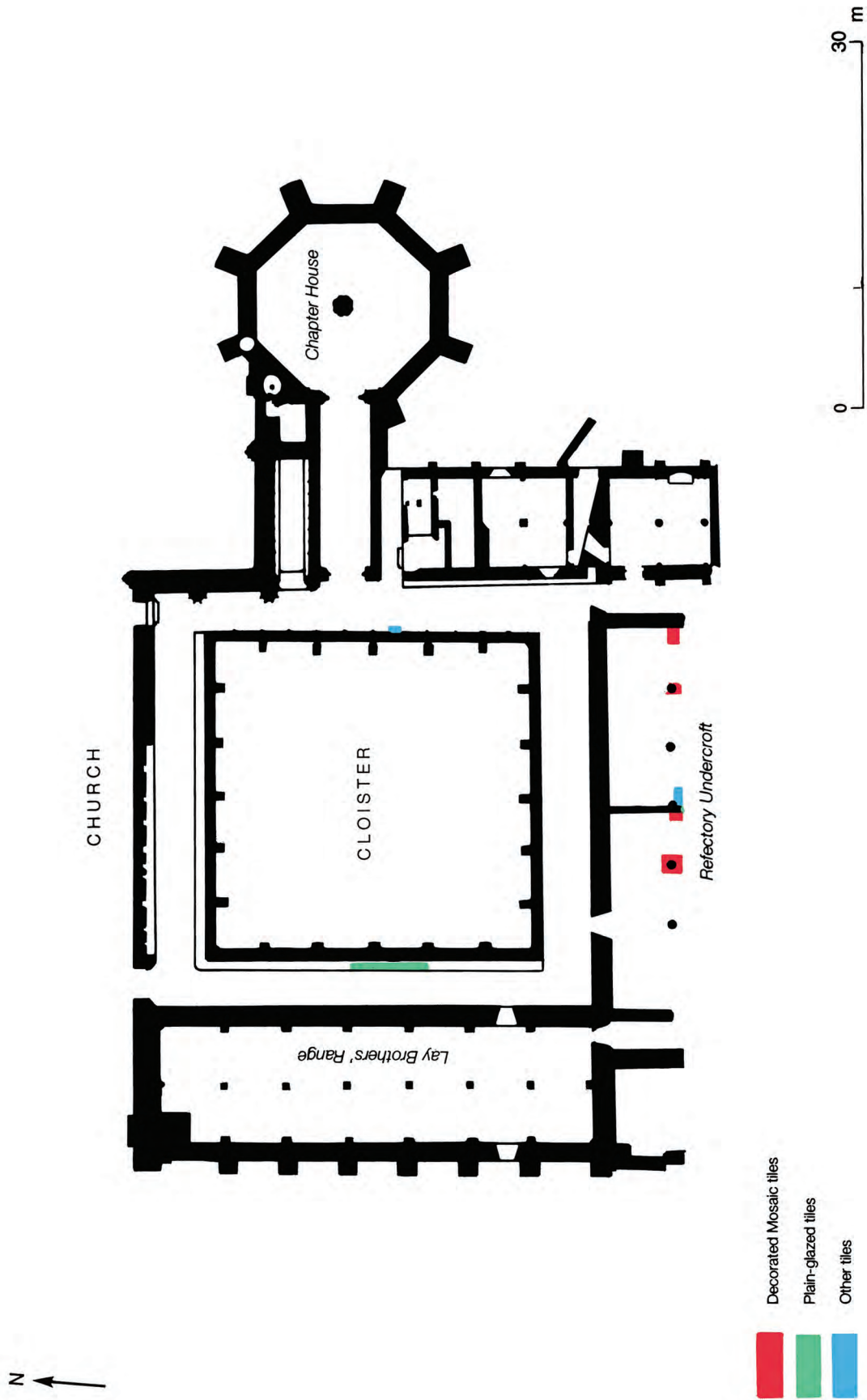


Fig 27.39: Thornton Abbey showing the tiles re-set around the cloister



Fig 27.40: Overfired and worn Decorated Mosaic Group tiles re-set in the refectory at Thornton Abbey, including several rare designs (7.96, R7.128, 7.135, R7.146, 7.147)

29.1, some worn, some in good condition (Fig 24.6). Standard Plain-glazed tiles, in the west claustral walk, remain in fairly good condition, with their chequered arrangement clearly visible (Fig 20.2). These tiles are bordered by stone and probably formed the floor of a series of carrels. To the north and south, and all along the north walk, they are replaced by brick.

Displayed in the 14th-century gatehouse: eleven square Decorated Mosaic tiles; four examples of design 29.1; one decorated rhombic-shaped tile and seven small panels of Plain Mosaic. There are also eight worn, shaped, tiles set with some replicas. The segmentally-shaped examples may be of the Decorated Mosaic Group. (EH/81011894–81011915).

English Heritage: approximately 200 worn tiles, 100 Plain Mosaic and 11 decorated tiles (EH/81011309; 88213465; 864464–864467; 88092538).

British Museum: 15 Plain Mosaic tiles (BMC/11187–11201).

North Lincolnshire Museums Service, Scunthorpe: 13 Plain Mosaic tiles in the Fowler Collection.

Assessment: Excavations began at Thornton in the 1830s at the behest of the owner, Charles, Earl of Yarborough. In 1852 a considerable number of shaped tiles were said by Lowe to have been found ‘very lately’, and it might be presumed that it was some of these tiles that were documented as given to the Archaeological Institute in 1853 and to the British Museum in 1854. The links between the Fowler family and Thornton Abbey, noted in Chapter 26, support the

provenance of the Plain Mosaic tiles in the Fowler collection held by North Lincolnshire Museums Service. These may have come from the Earl’s excavations or could have been earlier finds. In 1938 the abbey was handed over to the Office of Works. The English Heritage collection was stored in the gatehouse until recent times.

The evidence for the use of shaped tiles of the Decorated Mosaic Group at Thornton depends on the completely worn examples in the exhibition, and a single example in the store. Square tiles of the Decorated Mosaic Group and tiles of the Plain Mosaic Group are comparatively well represented. There are no extant examples of design 7.103 from the site but a note made by G.K. Beulah attributes this design to Thornton. The Decorated Mosaic and Huby/Percy tiles re-set on site include designs which are not represented in any loose collections.

Plain Mosaic tiles in the Fowler collection are labelled as from the chapter house. The Plain Mosaic tiles in the British Museum were recorded by Hobson as from ‘south of the nave’. In Boyle’s history, some tiles ‘formed into geometrical shapes and patterns’ were dug up ‘near the chapter house’. It is questionable, however, whether much significance should be attached to the location of Plain Mosaic finds at this site. None of the 28 pieces was said to have been found *in situ*. Much of this wealthy Augustinian abbey was rebuilt in the late 13th and early 14th century. Building work also continued through much of the later medieval period, with extensive rebuilding and refurbishment carried out in the church

during the abbacies of William Medley (1443–73) and John Louth (1492–1517). The many building campaigns and high number of burials in the church mean that alterations and re-use of tiles is more likely here than at other sites. The varied assemblage of tiles from Thornton also shows that this site had access to more floor tile types than most, including types not found further north (such as the rhombic-shaped tiles; Beulah 1982). Tiles used in the earlier building campaigns must have been taken up and re-used, either re-laid as a pavement in the new buildings or used as builders' make-up, or hard-core. It would not be surprising if Plain Mosaic tiles were to be found scattered all over the site.

Dating: Publication of a few extracts from an early 16th century chronicle among the Tanner manuscripts in the Bodleian Library gives some details and dates for building phases at Thornton, although the manuscript is said to be inaccurately written and the accounts imperfect (Parker 1845, 364). Substantial rebuilding of the eastern arm of the church is said to have begun in *c.*1264. Other details include:

- 1282 the foundations of the chapter house were laid, work in church continuing
- 1295 building treasury
- 1308 pavement laid down in the chapter house
- 1313 payment for two cartloads of Leed's earth for colouring the tiles of the church
- 1322 building cloister
- 1325 roofing cloister
- 1327 payment for work on new refectory
- 1331 glazing refectory windows
- 1337 payment for marble for cloister
- 1332 the foundations of the aisled nave went in
- 1393 Lady Chapel built

- 1393 payment of 60s for the making of tiles for the church pavement; paid 100s for 2M tiles for the church pavement.

It is difficult to relate the references in the chronicle to the floor tile collection. The first use of Plain Mosaic is likely to have been in the 13th-century monastery, unless a significantly later date was argued for the use of these tiles at Thornton than elsewhere. There is nothing in the assemblage to support such an argument. If the pavement laid in the chapter house in 1308 was a tiled floor, it is much more likely to refer to either the Decorated Mosaic tiles or the rhombic-shaped tiles. It is possible, however, that it referred to the re-use of Plain Mosaic tiles in the chapter house. The purchase of Leed's earth (white clay, presumably for use as inlay or slip) for decorating the tiles in the church in 1313 indicates that the tiles were being manufactured on site. Again this could refer to either the Decorated Mosaic or rhombic-shaped tiles at Thornton.

It is possible that the Decorated Mosaic tiles now re-set in the refectory undercroft had once been part of a tiled floor in the refectory above. If so, they must have been laid there after 1327. However, if either of the references above did refer to the Decorated Mosaic tiles, it would suggest that the examples re-set in the south range of the cloister were re-used in this location at a later date. The documented date for completion of the cloister gives 1325 as a *terminus post quem* for the Plain-glazed tiles in the carrels of the west claustral walk.

The cost of tiles bought for the church in 1393 appears high at first sight and was thought by G.K. Beulah to refer to decorated tiles; perhaps those of Group 29. However, the size of the tiles purchased is not known and 100s for 2,000 large Plain-glazed tiles is comparable with what was paid

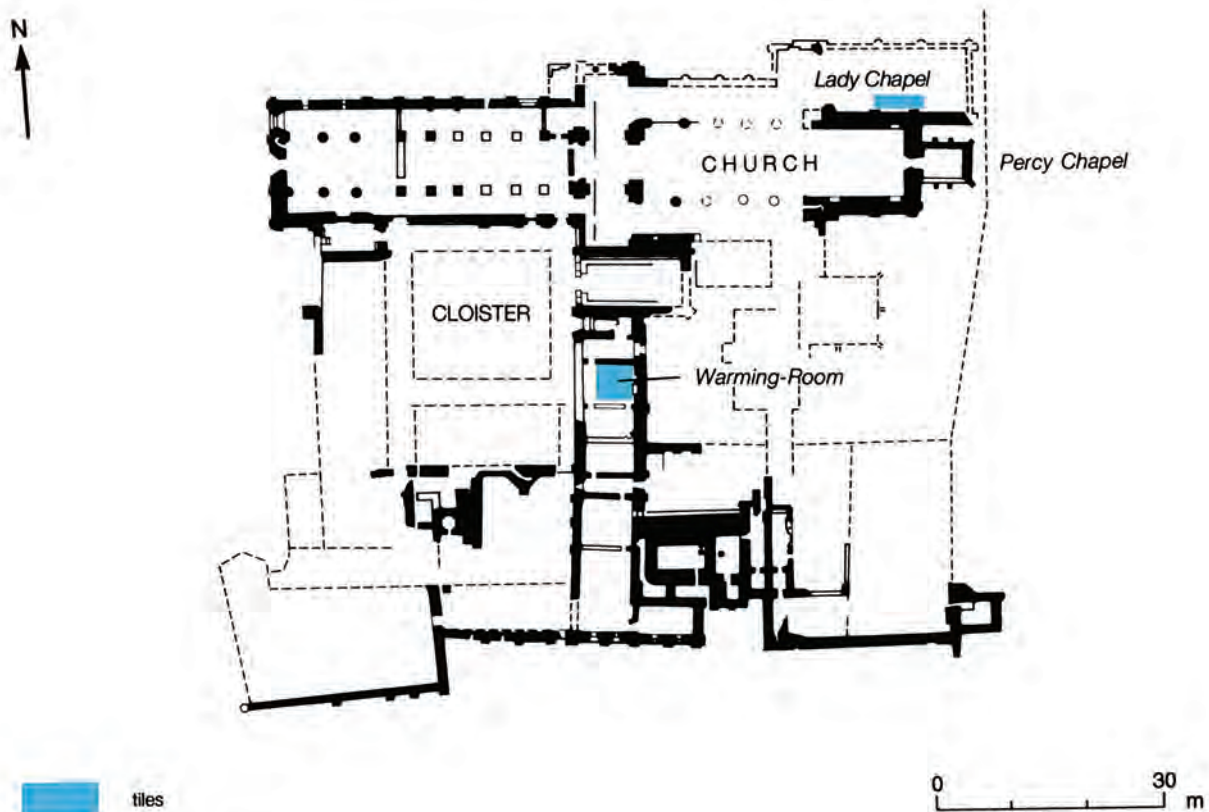


Fig 27.41: Tynemouth Priory showing the locations of re-set tiles

elsewhere (see Chapter 5). The payment of 60s for making tiles for the church pavement in 1393 could relate to the tiles of Group 29 or to Plain-glazed tiles, though the extant Plain-glazed examples were thought to be imported (see Chapter 20)

87. TYNEMOUTH PRIORY, TYNE AND WEAR, NZ/374695 (Benedictine monks)

Tile groups, designs:

Group 19, designs 19.1–19.5 (Fig 19.4).

Plain-glazed.

Publications: Adamson 1902; Chiel 1924; Craster and Hadcock 1937, 225; Hadcock 1936, 129.

Extant tiles: On site: re-set as shown in Fig 27.41. Those in the Warming House are Plain-glazed, while those on the site of the Lady Chapel are worn tiles, probably of the same type as the decorated fragments of Group 19 in the loose collection.

English Heritage: five fragments of four designs, plus one plain yellow fragment (1363.2; AML no. 85000083).

Shingley Art Gallery, Gateshead: three decorated fragments (TWCMS X612).

Assessment: Donations of tiles, type unknown, were made to the Newcastle Antiquaries in March of 1830 and February 1853, providing the earliest evidence for floor tile finds at this site (republished by Craster and Hadcock in 1937, 225). In 1924 the discovery of decorated floor tiles in the Lady Chapel was reported in the local newspaper, presumably during Office of Works excavations. The Chiel noted that ‘immediately to the north side of the chancel they have come across a tiled floor in a remarkably good state of preservation’. However, from the reporter’s subsequent description it seems that the centre of the pavement was worn [red tiles] with unworn [coloured and patterned] tiles along the borders. The re-set tiles are now completely worn. ‘Diamond-tiled flooring’ seen in the old parish church (the nave of the priory church) may have described Plain-glazed tiling but there are now no extant examples.

Plain-glazed tiles were re-set in the Warming Room by the Office of Works. The tiles do not extend right up to the walls of the Warming Room on any side, perhaps because there had been wooden benching around the walls. Records from the 1950s, held by English Heritage, suggested that tiles of unknown type may have been made in the area of the ‘large barracks’.

The tiles now in the Percy Chapel, which was added to the east end of the priory church in the mid 15th century, are of 19th-century date. The chapel was much restored by John Dobson at that time, after being used as a powder magazine for 40 years during the Napoleonic Wars. It is not known whether medieval tiles were ever found there.

Dating: The Chiel reported that the excavators thought the tiles in the Lady Chapel were of the 16th century but no reason was given. Construction of the Lady Chapel began in c.1326 (Hadcock 1936, 135), giving a *terminus post quem* for the use of the tiles there.

88. WARKWORTH CASTLE, NORTHUMBERLAND, NU/247057

Tile groups, designs: **Plain-glazed.**

Publications: Harbottle 1967, 115; Wood 1965, 236, fig 71.

Extant tiles: On site: an area of about 2 × 3.5m of Plain-glazed tiles, re-set on the altar platform in the (now roofless) chapel of the Keep (Fig 27.42).

Alnwick Castle Museum: six Plain-glazed fragments from excavations in 1966.

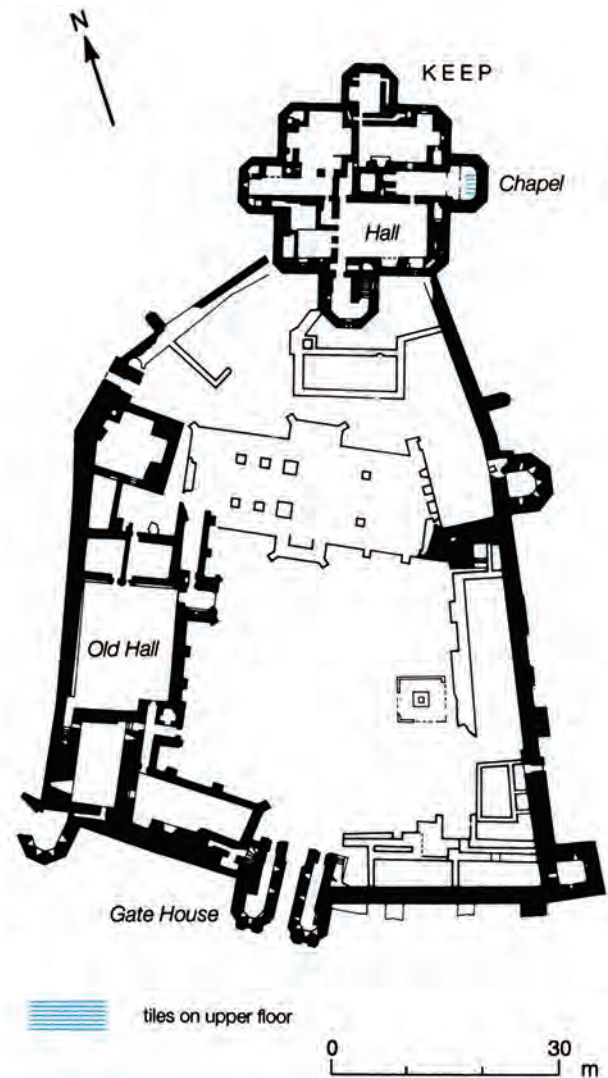


Fig 27.42: Warkworth Castle showing the location of re-set tiles

Assessment: The Plain-glazed tiles re-set in the chapel are laid haphazardly, with no attention paid to their colour. The fragments found in 1966 were in medieval layers of accumulated rubbish immediately inside the southern wall of the Outer Ward, east of the gate tower guard room. The dimensions of these tiles suggested that they were not of the same type as those in the chapel.

Dating: A *terminus post quem* for the tiles from the 1966 excavations is provided by the construction of the first curtain wall in the 13th century. One fragment was sealed in an undated layer, overlain by dumped material that included an almost complete tile measuring 250 × 40mm deep, four small fragments and a coin of c.1455. This might suggest that the tiles were discarded in the second half of the 15th century. All subsequent layers contained modern pottery.

Hislop (1991, 79–92) argued that the Keep as it now stands was paid for by Henry, first earl of Northumberland and third baron Percy, 1368–1407. Architectural detail suggested a date from the 1390s onwards. The tiles could have been laid in the chapel at any point after construction. There are few references to building work between 1416 and 1461 but extensive improvements were carried out in the Keep during the life of the fifth earl in the later 15th/early 16th century, including repair work on the chapel windows. It is possible that the tiled floor formed part of this work.

89. WATTON PRIORY, NR DRIFFIELD, E YORKS, TA/024498 (Gilbertine double house)

Tile groups, designs:

Possibly **Decorated Mosaic**, shaped tile designs 7.5–7, 7.20, 7.26, 7.29, 7.30 (Fig 14.1a–b).

Decorated Mosaic, square or rectangular tile designs 7.41, 7.42, 7.44, 7.48, 7.50, 7.53, 7.55, 7.67–69, 7.70–72, 7.75, 7.77, 7.88–91, 7.93–97, 7.99–101, 7.103, 7.106–110, 7.113, 7.118, 7.123, 7.125, 7.127, 7.128, 7.131, 7.135, 7.136, 7.139–141, 7.143–145, 7.149–155, 7.158, R7.158, 7.160, 7.163, 7.169, 7.170, R7.172 (Figs 14.1c, 14.1d, 14.1f, 14.1g, 14.1i, 14.15).

Plain-glazed.

Publications: Hope 1901a; Milner-White 1963; Oswald 1935; Sheppard 1907; Stevenson 1907–8; Wellbeloved 1881, IIc.

Other records: Beaulah 1928.

Extant tiles: British Museum: one Decorated Mosaic tile (BMC/2108, BMD/2350).

English Heritage: nine Decorated Mosaic tiles in the Beaulah collection (88092614, 88092616, 88092619, 88092624–33).

Victoria and Albert Museum: three Decorated Mosaic tiles bought from Hope in 1904 (1435-1904; 1436-1904; 1437-1904).

York Minster: a small panel of tiles re-set in the Minster crypt, labelled as from Watton, contains Decorated Mosaic square and rectangular tiles of types known from Watton. However, they are mixed with Plain Mosaic tiles, which are probably from Meaux Abbey (Milner-White 1963; see entry 99, *York Minster*).

Yorkshire Museum: 23 tiles donated by R. Pexton (1924.364; 1924.337; 1924.357; 1928.668). Several other square Decorated Mosaic tiles in the collection are thought to be from Watton.

Hull and East Riding Museum: 21 tiles in three boxes, reputedly from Watton (includes 143.1979.1; 143.1979.3; 143.1979.10; 143.1979.12; 143.1979.13).

Sewerby Hall Museum and Art Gallery, near Bridlington: five square tiles, four slip-decorated and one plain, reputedly from Watton.

Assessment: Hope's excavations at Watton Priory began in 1893 but seem to have continued for some time, since the tiles bought by the Victoria and Albert Museum from Hope were excavated in 1899. Despite this, the excavations appear to have been rushed and incomplete, with Hope probably only following the line of the walls in some areas. The site was laid out in two claustal arrangements, with nuns and canons living in adjacent communities. The cloisters were linked by a single gallery which had a 'turning window' through which all business between the two communities was conducted. Hope noted that a dais at the east end of the chapter house in the nuns' cloister was paved with tiles, but it is clear that the fill of this building was not removed at this time (1901a, 14). He did not apparently find any tiles in the church, which was on the south side of the nuns' cloister, and stated that the altar platform was paved with chalk blocks, as were the remains of the floor west of the presbytery steps (Hope 1901a, 10). Chalk was the main building material of the entire priory. The chapel used by the canons, on the south side of the south aisle of the church, had an altar platform of yellow and black tiles arranged chequerwise.

Hope's excavations may have been the source of an example of design 7.118 from Watton, recorded by Stevenson as in the Hull and East Riding Museum by 1909. However, two tiles of unknown type from the site, listed by Wellbeloved as

purchased in 1878 for the Yorkshire Museum collection, suggest that there had been earlier diggings.

In the 20th century, excavations were carried out at Watton by Reginald Pexton, sometimes with the help of his neighbour, G.K. Beaulah, and a number of tiles were discovered. Very little is known about these investigations. A photograph accompanying an article on Watton Priory, published in *Country Life* in 1935 (see Fig 14.15) shows twenty Decorated Mosaic square tiles, and six square and rectangular letter tiles. The tiles were attributed to the nuns' chapter house. Presumably they were part of the pavement found by Hope, later taken up by Pexton.

G.K. Beaulah photographed ten tiles from Watton in Pexton's collection in about 1925 and made a catalogue of the tile designs Pexton had found. The Beaulah collection includes a panel of nine square Decorated Mosaic tiles from Watton. These were labelled as 'found in the Presbytery of the Nuns' church' and a note records that the tiles were set into the horizontal plane of the four steps leading up to the high altar dais. The steps were chalk blocks which had been hollowed out *c.*75mm from the front, with the tiles set in mortar in the hollows. There were no tiles in the vertical face of the steps. Hope had not mentioned these tiles, noting only that the nuns' church was both built of and paved with chalk blocks (Hope 1901a, 10).

The only tiles thought to come from Watton that are on public display are two examples in Sewerby Museum (three others are in the museum's store) and the tiles re-set in a panel in the crypt of York Minster. The provenance of the tiles in York Minster is supported by the record of a gift of Watton and Meaux tiles, presented to the Dean and Chapter of York Minster by Reginald Pexton, in 1963 (see entry 99, below). The designation of the altars in the crypt has changed since the description of the tiles in the Friends of York Minster Thirty-fifth Annual Report (Milner-White 1963, 10–11). There are, however, two panels of tiles re-set between the altars in the east end of the crypt. One, labelled Meaux, is made up of Plain Mosaic tiles surrounded by plain tiles. The other, labelled Watton, is made up of a mixture of Plain Mosaic tiles and Decorated Mosaic squares and rectangles, again surrounded by plain tiles. The arrangement of these tiles was invented by the then clerk of works, Mr Green, and does not reflect their medieval provenance or layout. G.K. Beaulah was certain that Plain Mosaic was never found at Watton, and Decorated Mosaic was never found at Meaux. This being so, the panel attributed to Watton is in fact a mixture of tiles from both sites.

Other tiles from the Pexton collection are in the Yorkshire Museum and, probably, the Hull and East Riding Museum. However Beaulah's sketches, photograph, and the plate in *Country Life*, reproduced in Fig 14.15, are the only surviving records of some of the tiles found. In particular, Beaulah's drawings include the only record of shaped Decorated Mosaic tiles from Watton, and some of these drawings appear to be later additions to his catalogue. The presence of Decorated Mosaic shaped tiles at Watton is therefore uncertain. Other designs drawn by Beaulah but not in the extant collection are many of the Decorated Mosaic letters of the alphabet. However, there are examples of these types in the photographic record. The small number of extant tiles are scattered between several collections and not all are securely provenanced. Comparison of extant examples with G.K. Beaulah's drawings suggested that his sketches did not always follow the tile designs exactly. Where no extant examples of the designs exist, his drawings have been reproduced using the conventions assigned to antiquarian records.

Dating: The nuns' chapter house was built in the 13th century and enlarged in the 14th century (Hope 1901a, 15), providing a *terminus post quem* for the use of the tiles here. The church was rebuilt after a fire in 1167. A tomb inserted alongside the presbytery steps in the 14th century could have been the occasion for the addition of the tiled steps.

90. WEST RAVENDALE PRIORY, N E LINCS, TF/226997 (Premonstratensian cell)

Tile groups, designs: Unknown.

Publications: Venables 1878.

Extant tiles: None.

Assessment: Dressed masonry, a tiled floor and plastered walls discovered in the 19th century were identified as the remains of a chapel of a Premonstratensian cell founded in 1202. The Sites and Monuments Record notes that a floor tile with geometric decoration was found at this site.

91. WETHER COTE KILN SITE, BILSDALE, N YORKS, SE/562931 (grange of Rievaulx Abbey)

Tile groups, designs, shapes:

Plain Mosaic, design 1.16; shapes 3, 34 (Fig 10.15).

Inlaid/Usefleet, design 4.12 (Fig 12.1).

Usefleet, designs 6.1, either 6.9 or 6.10 (Fig 13.3).

Publications: Proudman 1989; Stopford 2000.

Other records: Weatherill c.1930–50, two drawings (ref. 21, p.368).

Extant tiles: On site: abraded floor and roof tile is visible in the field walls at Wether Cote.

Ryedale Folk Museum, Hutton-le-Hole: seven floor tiles and a mortar are among the finds from the site.

Assessment: John Weatherill drew two tiles found in the Chapel Garth, Wether Cote, which are now lost (a half tile of design 23.34 and a tile inscribed AVE MARIA which could be either design 6.9 or 6.10). Further finds were turned up by the tenant farmer of Wether Cote and were published, with a short discussion of the site, by Dennis Proudman who was undertaking a survey of potash kiln sites in the area. Proudman noted that the fields north of Wether Cote farm were named Kilfield or Kiln Fields and suggested that this could have been the site of a medieval tile works. More recent fieldwork, including geophysical survey and a count of ceramic fragments in the field walls, has confirmed the likelihood that kilns making floor and roof tiles were located here, while scientific fabric analysis showed that floor tiles made at Wether Cote were used at Rievaulx Abbey. Wether Cote lies within a parcel of land that was granted to Rievaulx Abbey early in the life of the monastery, and confirmed by Roger de Mowbray in c.1145 (Atkinson 1887, lxii; Weatherill 1955, 338; McDonnell 1963, 111). Immediately to the east of the Kilfields is a linear stone quarry used as a source of building stone for the abbey.

Dating: The tiles must post-date the monastic foundation at Rievaulx in c.1132.

92. WHALLEY ABBEY, LANCS, SD/730360 (Cistercian monks)

Tile groups, designs, shapes:

Group 21, 105mm and c.80mm squares, divided variously into rectangles and triangles.

Group 22, individual design numbers were not given for the fragments of a possible tomb cover (Fig 21.3).

Transpennine, designs 23.4, 23.5, [?23.6], 23.8, 23.12, 23.13, 23.17, 23.20–23, 23.25, 23.30–32, 23.34, 23.35, 23.37, 23.38 (Figs 22.1–22.3, 22.5).

Group 26, designs 26.1–26.5 (Fig 24.2).

Plain-glazed.

Unallocated, designs Un/13, Un/14, Un/15 (Fig 25.4).

Publications: Beaulah 1935.

Other records: Keen c.1980 (ref. 9, p.368); Norton c.1980 (ref. 12); Ogle 1952 (ref. 16); Thorn c.1980 (ref. 19).

Extant tiles: On site: as shown in Fig 27.43. Ownership of the site is divided, with much of the eastern part, and the house to the south east of the abbey church, in the care of the Blackburn diocese. The western area appears to be under the jurisdiction of the adjacent Catholic church. Within the eastern portion of the site there remains a patch of c.190mm Plain-glazed tiling in the church, against a pier base south of the crossing. The remains of a pavement of Transpennine Group tiles has been reburied in the octagonal chapter house (Fig 22.5). A c.2.5m² patch of mixed worn and plain tiles of various sizes, in poor condition, is re-set in a building thought to have been part of the abbot's house. In the western part of the site, there are twenty-two unworn tiles and fragments stuck into two panels of rough white plaster on the west wall inside the cellarium. They include seven examples of design 23.37, one of design 23.5, three of design Un/14, five of design 26.1, one each of designs 26.3, Un/15 and 23.22, and three plain tiles.

Displayed in the Visitor Centre, Whalley Abbey: six Transpennine Group tiles set in a frame, thought to be examples from the chapter house (Fig 22.3).

British Museum: one tile of design 23.37 (BMC/3109).

English Heritage: seventeen tiles of various types in the Beaulah collection 88092526; 88092581; 88092586; 88092588–9; 88092636–8; 88092642–4; 88092649–52; 88092658–9.

Lancaster Unit: six tiles (designs Un/14, 23.37 and plain) found during watching briefs in the vicinity of Whalley Abbey.

Assessment: G.K. Beulah's study of the Whalley tile assemblage was carried out while excavations were going on at the site between 1930 and 1934. There are no other records of these excavations. Two areas of a coherent pavement of Transpennine Group tiles were found *in situ* in the chapter house (Fig 22.5; now reburied). A tiled floor was also discovered *in situ* in the choir, made up of c.60 examples of design 23.37 and plain tiles. The precise arrangement of these tiles is unknown. Other areas of flooring found *in situ* were c.190mm plain tiles in the north transept, and seven or eight tiles of design Un/14 in the south aisle of the nave. It is possible that the locations of these tiles got transposed somewhere along the way since now Plain-glazed tiles are re-set south of the crossing in the south nave aisle. At the time of G.K. Beulah's visit there were also several hundred tiles stacked against a wall in the garden, with the best examples kept in a shed. These are now lost. Designs recorded by Beulah that no longer survive include the sgraffiato tiles of Group 22 and designs 23.6, 26.4 and 26.5. One small fragment of each of designs Un/13 and 26.2 are extant.

Plans and drawings of the chapter house pavement layout, and the designs included in it, were made by Jim Thorn and Laurence Keen prior to the re-burying of the pavement in 1984 (Fig 22.5). There is no full photographic record of the tiles. Photographs of the chapter house floor in English Heritage's archive are dated 1974 and 1983 but individual tiles and designs are not visible. More detailed snapshots of one or two areas were taken by interested specialists (those taken by G.K. Beulah are shown in Fig 22.2). Some poor quality re-pointing work appears to have been carried out before the tiles were buried. Designs recorded as part of the chapter house floor but not otherwise extant from Whalley

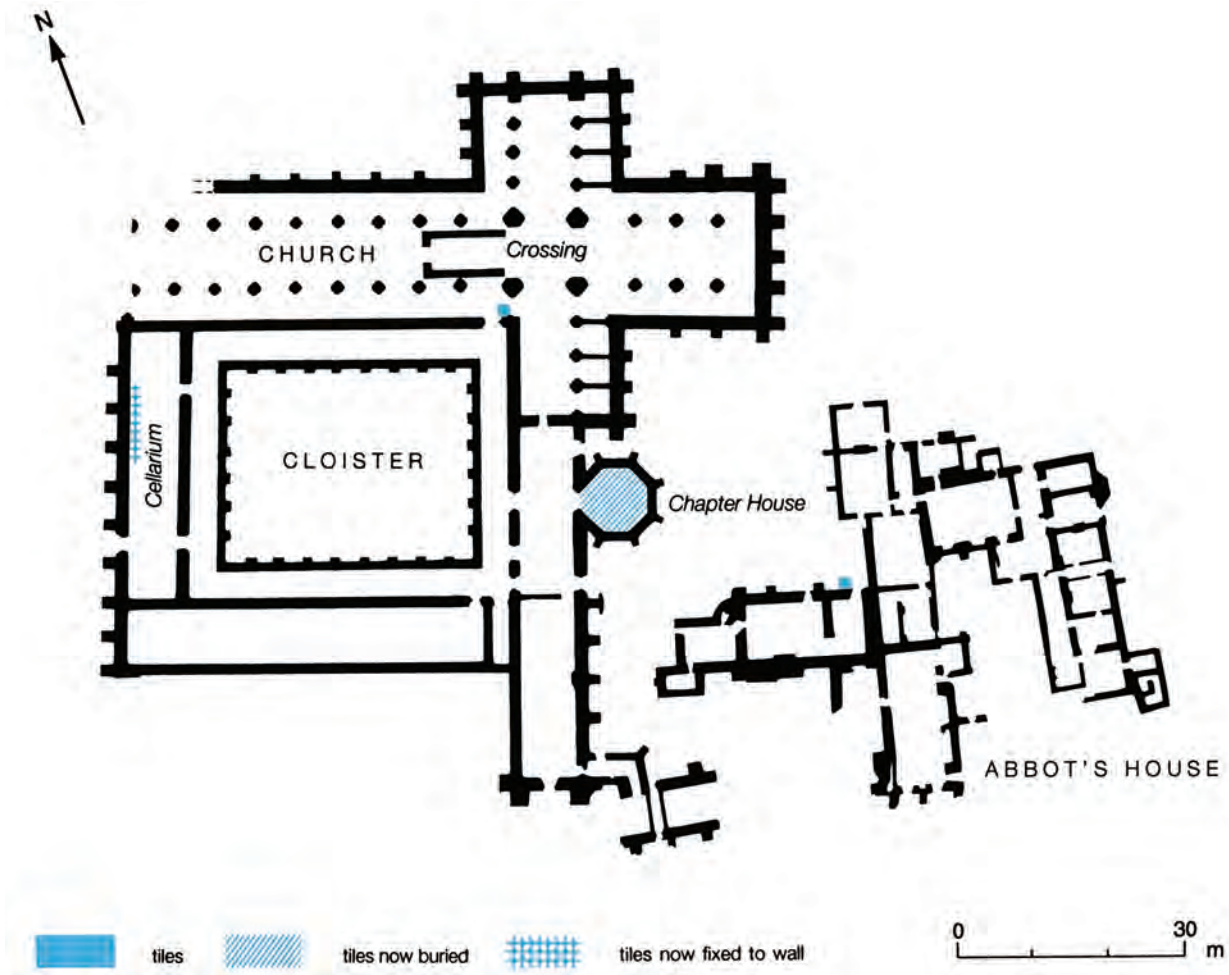


Fig 27.43: Whalley Abbey showing the locations of re-set tiles

are nos 23.12, 23.17, 23.20–23.21, 23.23, 23.30–23.32, 23.34–23.35 and 23.38. The locations of the tiled areas under the turf are clearly visible in dry weather. This is the only extant example of the layout of a Transpennine Group pavement.

The tiles stuck in plaster on the walls of what is thought to be the early to mid 15th-century cellarium were placed there in the late 1970s, when the building was in use as a youth club. It is now closed for safety reasons and the tiles have only been seen in torchlight and from a distance. It is possible that the tiles were dug up from inside the west range (Jason Wood, pers. comm.). Designs on the cellarium walls that are otherwise unrepresented from Whalley include nos 12.3, 25.11, 26.1 and Un/15.

The tiles that remain at Whalley and those recorded by G.K. Beulah and published in 1935, are well provenanced to this site. Much of the material has, however, been lost and the situation of many of the extant tiles is perilous.

Dating: A late medieval date is suggested for all the tiles at Whalley. The Cistercian monks eventually moved here from Stanlaw in 1296, having had some difficulty obtaining the necessary consents. Costly disputes continued after their removal and building work on the new site proceeded very slowly (Whitaker 1872, I, 90–100; Pevsner 1969, 259–60). Although the foundation stone of the conventual church was laid in 1308, building work did not begin until 1330. The church is documented as unfinished in 1345 and 1362.

The first mass was said in 1380. Both documentary and architectural sources place the construction of the remaining claustral buildings in the 15th century. Building work had resumed in the choir in 1434 and work was finally completed in 1435. The tiled pavements are unlikely to have been laid on this site before the later 14th century.

93. WHITBY ABBEY, N YORKS, NZ/904115 (Benedictine monks)

Tile groups, designs:

Inlaid, designs 4.2, 4.12 (Fig 12.2).

Usefleet, designs 6.1, 6.10, 6.15 (Fig 13.3).

Plain-glazed.

Publications: None.

Other records: Office of Works list of finds.

Extant tiles: English Heritage: 15 decorated and 26 Plain-glazed tiles (EH/8143144–81430150; 81430223–4; 88092830).

Assessment: The tiles were described as ‘brick’ in the clearance finds’ lists. They were not apparently found *in situ* but they did all come from within the church, from the north transept, north side of the crossing or the north side of the nave. The much greater level of destruction to the south side of the church since the Dissolution is visible from the standing ruin. Plain tiles were found outside the north wall of the nave 0.82m (2’9”) below the turf.

Dating: None.

**94. WINESTEAD MANOR, NR PATRINGTON,
E YORKS, TA/298238**

Tile groups, designs:

Probably **Huby/Percy**, design 24.40 (Fig 23.2).

Publications: None

Extant tiles: Re-set: three large fragments around the fire-place of a modern house built on the site of the old school, Ottringham.

Private collections: fourteen tiles/fragments.

Assessment: Tiles with an armorial design were discovered in ploughsoil in the 1960s, immediately to the north of the site of a moated manor house. The church of St Germain, Winestead, is on the east side of the moated site. The location of the finds suggested that the tiles had been used in the house rather than in the church.

Dating: Winestead was the seat of the Hildyard family. The tile design (24.40; Fig 23.2) shows the arms of Tunstall and Boynton, probably Sir Brian Tunstall and his wife, Isabel Boynton, with the cockerel of the Hildyard crest (assumed in 1461). Sir Brian was slain at Flodden in 1513. However, the shape of the shield suggests a slightly later date for the tiles, perhaps c.1530 (Neubecker 1977, 76–7). Close political and religious connections between the Hildyard and Tunstall families at this period may have been the reason for wishing to emphasise the earlier link by marriage (Miller 1932; see further Chapter 23). It is thought that a new house was built at Winestead by Sir Christopher Hildyard in c.1530, and it is possible that the tiles were made at that time.

**95. WINTERINGHAM, NR SCUNTHORPE,
N Lincs: CHURCH OF ALL SAINTS,
SE/925225**

Tile groups, designs: **Plain-glazed.**

Publications: None.

Extant tiles: North Lincolnshire Museums Service, Scunthorpe: two fragments.

Assessment: Tiles found in post-medieval contexts during excavations by Kevin Leahy in c.1970s.

Dating: None.

**96. WINTERTON, N Lincs: CHURCH OF ALL
SAINTS, SE/927186**

Tile groups, designs: **Nottinghamshire**, designs 15.4, Wh/33, Wh/75, Wh/120, Wh/121, Wh/144 (Figs 18.1, 18.2).

Publications: None.

Other records: Fowler c.1868–1872 (ref. 5, p.368).

Extant tiles: Scunthorpe Museum and Art Gallery: Fowler collection 50, 51, 58, 61 and no number.

Assessment: All but one of the extant types were shown in a painting, possibly by Joseph Fowler, with some notes on the circumstances of the discovery of the tiles. Several examples were found during excavations in the chancel of the church in 1869 and that another was ‘found under the old oak pews in the nave of Winterton church 1872’.

Dating: None.

**97. WINTHORPE HALL, LOCKINGTON,
E YORKS, SE/998465**

Tile groups, designs: **Decorated Mosaic**, square tile designs 7.87, R7.87, 7.89, 7.91, 7.96, 7.97, 7.103, 7.106, 7.109, 7.126, 7.128, 7.131, 7.135, R7.135, 7.136, 7.139, 7.141, 7.143, 7.144, 7.152, 7.158, 7.169 (Fig 14.1i).

Publications: None.

Other records: Lloyd 1956 (ref. 10, p.368). Other information from G.K. Beulah.

Extant tiles: English Heritage: two tiles of designs 7.135 and 7.152, Beulah collection (EH/88092621–2).

Hull and East Riding Museum: Lloyd collection (KINCM.2000.188).

Assessment: The two sources of information do not agree absolutely, with the same designs recorded by both M.M.C. Lloyd and G.K. Beulah but with some reversed colours. It is clear, however, that the tiles were found in c.1956 during excavations by Lloyd on the site of Winthorpe Hall, Lockington. The number of designs recorded suggested that a large quantity of tiles were found and that they had been used in a floor at this site. The excavator later died with the assemblage in his possession and it was eventually passed to Hull and East Riding Museum. However, few details of the excavation have survived. This is a great loss as information about the location of tiled pavements on secular sites is extremely scarce in northern England.

Dating: None.

98. WRESSLE CASTLE, E YORKS, SE/707316

Tile groups, designs: **Plain-glazed.**

Publications: None.

Extant tiles: Private collection: two tiles.

Assessment: The tiles were found loose on the site and are well provenanced but their original location is not known.

Dating: The castle was of one period, built in the 1390s (Hislop 1998, 181, n66), providing a *terminus post quem* for the tiles.

99. YORK MINSTER, N YORKS, SE/603524

(secular canons)

Tile groups, designs:

Plain Mosaic, designs 1.7, 1.13, 1.15; shapes 34/5, 156, 166, 266, ?11, ?12, ?264 (Fig 10.15).

Nottinghamshire, designs 15.2, 15.3, Wh/74, Wh/83, Wh/101, Wh/105, Wh/120, Wh/133 (Figs 18.1, 18.2, 27.45, 27.46).

Huby/Percy, designs 24.33, 24.39 (Fig 23.2).

Plain-glazed, (Fig 20.1).

Unallocated: designs Un/18–Un/20 (Fig 25.4).

Publications: Browne 1847; Fowler 1801; Milner-White 1963; Poole and Huggall 1850; Raine 1859, 36; Wellbeloved 1881, IITb.

Other records: Betts 1985, 415–44; Brook 1913; c.1921–36, nos 38, 183 and 184; O’Connor 1979.

Extant tiles: On site, as shown in Fig 27.44. A pavement of Plain-glazed tiles with some modern patching survives in the ‘Consistory Court’, a vestry on the south side of the Minster (Fig 20.1). In the crypt there are two sizes of Plain-glazed tiles, thought to be original to the Minster, and some re-set panels of Decorated Mosaic and Plain Mosaic tiles that came from Watton Priory and Meaux Abbey.

Yorkshire Museum: two Nottinghamshire Group tiles (Brook/38 and 183).

Minster World: nine Nottinghamshire Group tiles on display in St William’s College, York (Fig 27.46).

York Minster: 22 tiles are held in store (YMXB44/17, YMXB8/77, YMNN3553, YM72XK48/2, 72XJ87/10, YM72XJB/29, YMXK45/5, EN/124, YM69OL/11, 69OCE/202, YM72XJ78/6, YM72XL52/5, YMXJ87/11, YMXK35/4, YMXL72/3, 69SD/41–3, YM69SD/38).

Assessment: The tiles in York Minster store were found during the extensive excavations carried out in and around the Minster between 1967 and 1973. They included the only examples of Plain Mosaic and Huby/Percy tiles provenanced to this site, and a fragment of the Nottinghamshire

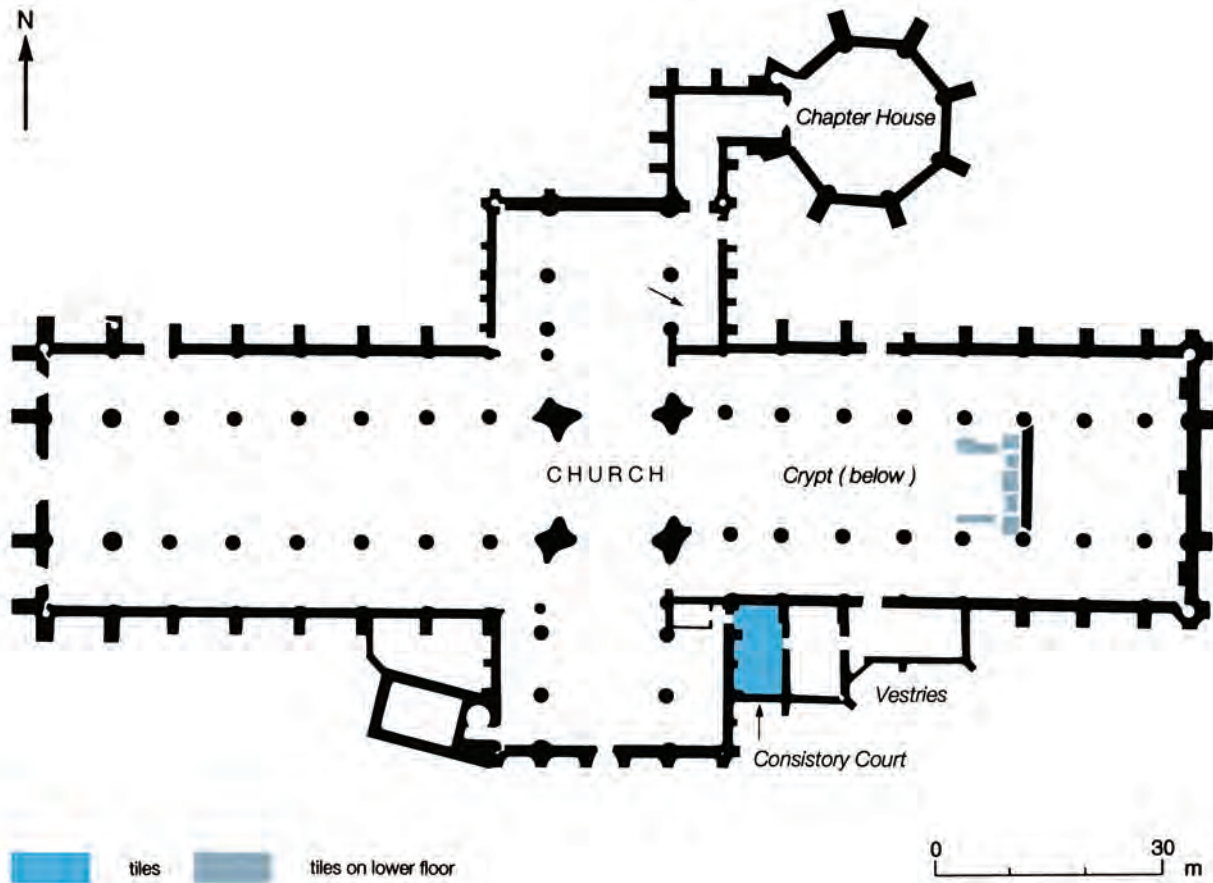


Fig 27.44: York Minster showing the locations of re-set tiles

Group design (Wh/83). The Nottinghamshire design is also provenanced to the Minster through Fowler's engraving of tiles in St Nicholas' Chapel and an extant example is in the Minster World display (Figs 27.45, 27.46). Information regarding the contexts of the excavated tiles was not readily available but one of the Plain Mosaic examples was labelled as found at a depth of 6' (1.8m) in the south choir aisle (Pier L/13).

The crypt

The complete fabric roll for 1415 suggested that in this year the floor of the crypt was paved with Flemish tiles (Raine 1858, 36). Some details of the purchase of two sizes of tiles were given: 600 (d.c) large Flanders (Flaundre) tiles were bought for the crypts (les cruddes) from William Newland for 33s 4d; and 600 smaller tiles were also bought for 8s 4d. Carriage to the Minster cost 8d.

Browne, writing in 1847, described the crypt floor as divided into three parts. The area along the east wall was paved with stone (except for where the altars stood). Next to this was a chequered floor of 7" (175mm) square tiles glazed alternately yellow and purple. Square tiles measuring 11" (275mm), arranged in a similar way, made up the third part of the floor (Browne 1847, 210–11).

In the crypt today there are the two panels of tiles from Meaux and Watton set between the three altars at the east end. They were donated by Reginald Pexton (Milner-White 1963 and see the entries for *Meaux* and *Watton*). The panels are of Plain Mosaic and Decorated Mosaic tiles with plain floor tiles set around them. The plain tiles appear to be a mixture of 13th-century and later types, measuring 110mm square. Tiles of this size were not mentioned by Browne in

his otherwise detailed description of tiles in the crypt in 1847, and tiles of this type and size were not present among the loose collection from the Minster. They probably formed part of the Pexton bequest and came from Meaux or Watton.

Plain-glazed floor tiles of the 175mm size mentioned by Browne are found on the dais in front of each of the three altars. Worn tiles with a few traces of slip and glaze, of the 275mm size recorded by Browne, remain in two areas in the centre of the crypt. The provenance of these two sizes of Plain-glazed tiles to the medieval Minster is thought to be secure.

Consistory Court

A vestry called the Consistory Court, the westernmost of three vestries on the south side of the Minster, has a largely complete Plain-glazed tiled floor laid in a chequered arrangement on the same axis as the walls (Figs 20.1 and 27.44). The southern end of the floor was hidden from view by heavy furniture and the south-east corner had been repaired using tiles of a much later date. However, there were no other signs of disturbance and no alterations were noted in the Minster records. The floor was therefore thought to be in its original location.

St Nicholas' Chapel

In 1801, Fowler published an engraving with ten tile designs from a chapel dedicated to St Nicholas in York Minster (Fig 27.45). It is uncertain where exactly St Nicholas' Chapel was in the Minster. The central chapel of the east aisle of the north transept has been suggested as one possibility (O'Connor 1980) although Brook was convinced that it was located in the choir and that parts of the shrine were found

*Principal Patterns of the NORMAN TILES from
the FLOOR of St NICHOLAS Chapel YORK MINSTER.*

W. Fowler del. et fecit.

Print July 23rd 1881 by W. Fowler Harten.

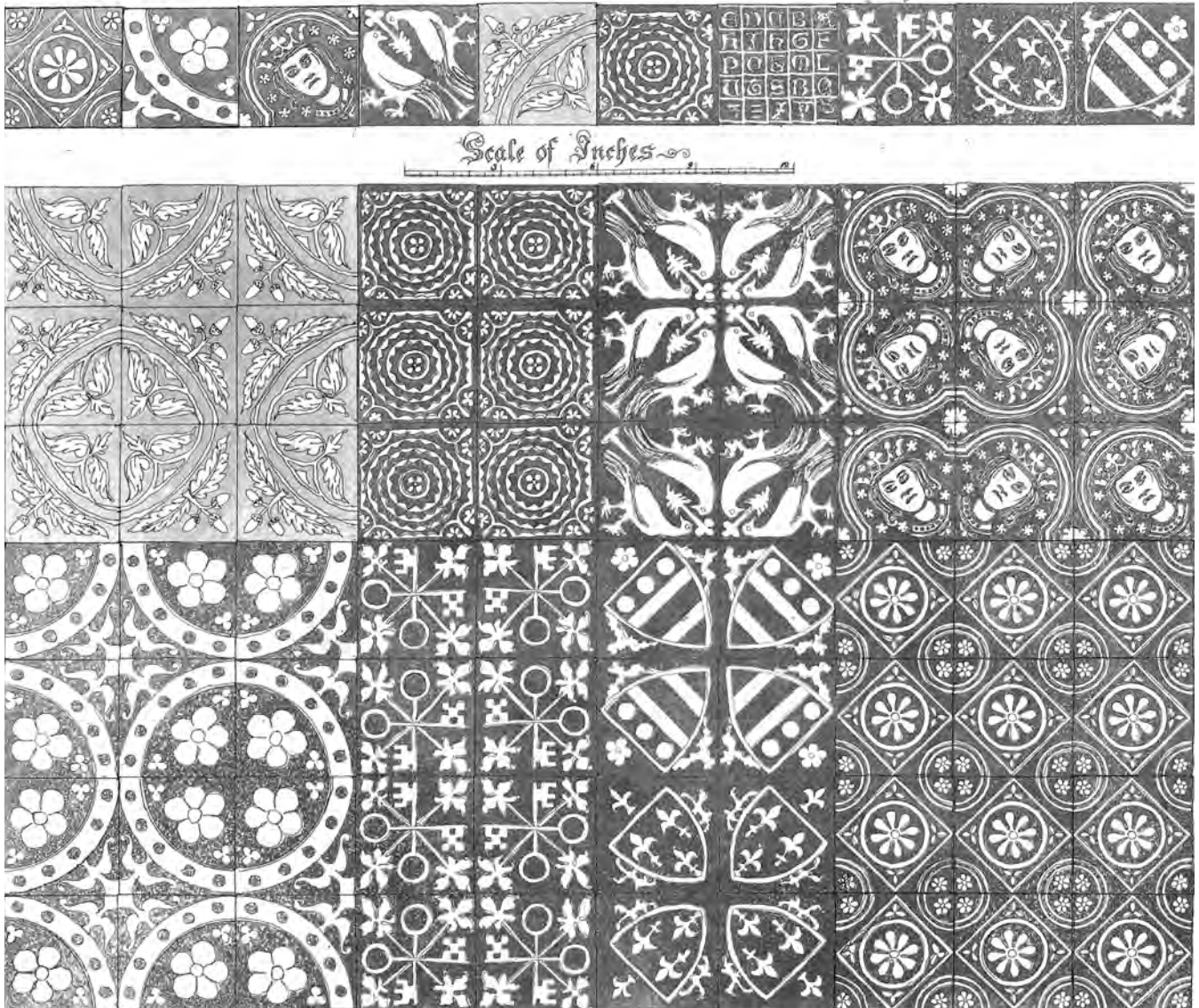


Fig 27.45: William Fowler's record of tiles (1801), mainly of the Nottinghamshire Group, in St Nicholas' Chapel, York Minster

by him when rearranging the worked stone in the newly built Yorkshire Museum (1913). In 1881, Wellbeloved recorded that two tiles of unspecified designs from the pavement that used to lie before the altar to St Nicholas were in the YPS collection. According to this note, a small part of the pavement was preserved in the vestry of the Minster, but 'most of the tiles found their way into Lincolnshire'. The panel of tiles now exhibited in the Minster World exhibition is probably the remnant from the vestry (Fig 27.46). By Brook's time, in the first half of the 20th century, three tiles of two designs in the Yorkshire Museum collection were attributed to the altar pace of St Nicholas' Chapel (Wh/74 and Wh/105). Today the two extant examples of Wh/74 and the re-set Minster World panel make up the extant collection.

Of the ten designs illustrated by Fowler, four were Nottinghamshire Group designs that are represented in the

extant collection. Two others were Nottinghamshire Group designs but not extant from the Minster (Wh/105 and Wh/133). Two further designs were also thought to be of the Nottinghamshire Group but were apparently unknown in the north midlands (not listed in Whitcomb 1956 or Parker 1932). These designs are 15.2 and 15.3 in Fig 18.1c. A tile of design 15.2 in the Yorkshire Museum was unprovenanced according to Brook and was attributed to St Mary's Abbey by Renaud (Renaud 1887, 309 (ref. 17, p.368); Brook/225). It is possible, therefore, that this was not the example that Fowler drew. Also in the Yorkshire Museum is a worn unprovenanced tile broadly similar to Fowler's drawing of design 15.3. The tile of 15.2 was used for the design drawing in Fig 18.1c but the drawing of 15.3 is based on Fowler's records. The final two designs drawn by Fowler, Un/18 and Un/19, are not assigned to a tile group. There are no extant



Fig 27.46: Nottinghamshire tiles from York Minster: remains of the paving recorded by W. Fowler in 1801 (Fig 27.45)

examples of design Un/18, but there are several unprovenanced examples of design Un/19 in the Yorkshire Museum. The physical characteristics of the Un/19 tiles are unlike those of the Nottinghamshire Group. Fowler's illustration was therefore mainly of Nottinghamshire tiles but with some examples of other types. The St Nicholas' Chapel pavement may, therefore, have been either patched or re-set before 1801.

Dating: The reconstruction of the transepts and choir of the Minster are thought to have been completed by *c.*1250 (Gee 1979, 127–36). If the Plain Mosaic tiles were associated with this work they might date to *c.*1250.

The construction of the vestries on the south side of the Minster was associated with the rebuilding of the east end in the 1390s or later, and the new vestries are documented as having come into use in 1394 (Harvey 1977, 160). The

Plain-glazed pavement in the Consistory Court must date after construction was completed. Dendrochronological analysis of the doors and cupboards in the vestry that is sometimes known as the Zouche chapel has given dates in the first decade of the 15th century (Fletcher and Morgan 1981, 45–9). Fitting out the vestries in the early 15th century suggests *c.*1400 as a likely date for the Consistory Court floor.

The two sizes of Plain-glazed or worn tiles remaining in the crypt are dated to 1415 if the documented purchase of tiles for use in the crypt does, as suggested above, refer to this paving.

No evidence has been found to support the suggestion that a tiled floor in St Nicholas' Chapel might relate to the burial of Archbishop Greenfield in 1315 (O'Connor 1980).

100. YORK: ALL SAINTS' CHURCH, NORTH STREET, SE/601517

Tile groups, designs:

Either **Transpennine**, design 23.36 or **Huby/Percy**, design 24.33 (Figs 22.1, 23.1).

Group 27, designs 27.1–27.3 (Fig 24.3).

Publications: RCHME 1972, 10; Rowe 1879; Shaw 1908.

Other records: Rowe 1881, vol 11, nos 40, 81, 175/BL52, 94, 190 (ref. 18, p.368).

Extant tiles: None.

Assessment: Restoration work was carried out in 1867. The work involved the rebuilding of the south wall of the church. Some line-impressed tiles of design 23.36/24.33 were found, coloured dark brown, yellow and green. The tiles were given to the YPS but are not now identifiable in the collection. The drawing published by Shaw is unscaled. Consequently it is impossible to say whether the tiles were of the Transpennine or Huby/Percy Group.

Three other tile designs were recorded by George Rowe as found at the church in the same year, presumably during the same phase of reconstruction. Although there is nothing to corroborate Rowe's drawings, because none of his designs from this site are represented in the extant collections, recent stray tile finds in York suggest that some unusual material was in use in the city (see entry for *York: other*, 115 below). Rowe's manuscript collection is of full sized, coloured tracings, giving the impression that they were drawn from actual tiles. Other designs drawn by Rowe, from material in the Yorkshire Museum and elsewhere, are reasonably accurately portrayed.

Dating: None.

101. YORK: ARCHBISHOP'S PALACE, SE/604527

Tile groups, designs: **Huby/Percy**, design 24.22 (Fig 23.1).

Publications: Eames 1980, 1, 272.

Extant tiles: British Museum: BMC/478.

Assessment: The single tile of design 24.22 in the British Museum was found at York on the 'site of the Archbishop's Palace' but the precise location and circumstances of the find are not known. The Archbishop's Palace lay to the north of the Minster. The site was built on in c.1620, 1830 and 1940, with only the Palace chapel now surviving as the Minster Library (RCHME 1981, 129).

102. YORK: BARLEY HALL, SE/604522 (Coffee Yard)

Tile groups, designs: **Plain-glazed**.

Publications: Stockwell 1987, 13, fig 2.

Extant tiles: York Archaeological Trust: c.12 tiles (1987.1).

Assessment: Excavations uncovered the mortar bedding of a tiled floor in a house between Stonegate and Grape Lane. The mortar bedding retained the clear impressions of a tiled

floor which extended through the hall and service area of the building (Figs 5.4–5.5). The tiles were laid at a 45° angle in the hall, with a single dividing line of tiles running across the floor in both directions. In the service area the tiles were laid at right-angles to the walls. One Plain-glazed tile was found *in situ* with a few fragments in other contexts, giving the only indication of the type of tile in use here. The hearth, off centre in the hall, had had a brick surround but all but one of the bricks had also been taken up. The hearth was at the same level as the tiled floor and was in contemporary use. While it is possible that the hearth could have been inserted into the floor, there was no evidence to support this. The excellent survival of the tile impressions in the mortar bedding suggested that the mortar layer was sealed soon after the tiles were removed. An example of design 15.5, probably of the Nottinghamshire Group, was found in a post-medieval context at this site (1987.1 II 20 2062 /270); for other stray finds in York, see entry 115, *York: other*.

Dating: A test pit, excavated in 1985, uncovered an earlier hearth, below the bedding of the tiled floor. The tiled floor must post-date the use of this hearth, which was last used in 1440 (±20 years). The later hearth, which was at least partly contemporary with the tiled floor, had an archaeomagnetic date of c.1536 (i.e. it was last used in c.1536). The house was replaced at this point, with the tiles taken up for re-use. The tiled floor must therefore date between c.1440 and c.1536 (B. Lott, pers. comm.).

103. YORK: BEDERN CHAPEL, SE/606523

(Vicars' Choral)

Tile groups, designs:

Inlaid, designs 4.2, 4.7 (Fig 12.2).

Plain-glazed.

Publications: Stockwell 1980, 11.

Extant tiles: Yorkshire Museum: two boxes Plain-glazed; 11 tiles Inlaid Group (1963.6; 1977–8.13; 1980.20).

Assessment: During excavations by York Archaeological Trust in the 1970s, Inlaid and Plain-glazed tiles were found in the east end of the chapel, having last been relaid in Victorian times. Plain-glazed tiles (of 'Non-Standard' type, see Chapter 20) were also found in 28 medieval contexts, suggesting that the tiles had been used in a medieval floor here. At least six very worn examples of design 4.7 of the Inlaid Group were found in medieval contexts in the chapel, perhaps suggesting that they, too, had been used here in an earlier pavement (1980.20.II 9003). A further Inlaid example was found at this site in the 1960s. Other tiles from the site of the chapel, or found in excavations within the property boundary of the Vicars' Choral but outside the chapel (marked with an *), are listed in Table 27.2.

Table 27.2: Tiles from Bedern, excavated by York Archaeological Trust

<i>YAT context no.</i>	<i>Design no.</i>	<i>Nos</i>	<i>Group</i>	<i>Date of deposits</i>
1977.13 5237	Unidentified (not drawn)	1	Unallocated	Late 14th–early 16th century*
77.13 5114	design Un/22	1	Unallocated	Post-medieval*
1978.13 7349	design 4.2	1	Inlaid	Late 14th–early 15th century*
1978.13.X 7353	plain	1	Inlaid	Mid–late 14th century*
75.13 999 & 1980.14 IV	n/a	2	Plain Mosaic shapes	Unstratified*
1980.20 II 9004 /11\	design 15.2	2	Nottinghamshire	Late 14th–early 16th century
1980.20 II 9000 /117\				
1980.20 II 9004 /14\	design 16.9	1	Group 16	Late 14th–early 16th century
1980.20 II 9004 /13\	design 16.10	1	Group 16	Late 14th–early 16th century
1980.20 II 9004 /15\	unidentifiable	1	Group 16	Late 14th–early 16th century

For other stray finds in York, see entry 115 for *York: other*.
Dating: The first chapel on the Bedern site was built in the second half of the 13th century. The second chapel was rebuilt in the 1340s (RCHME 1981, 58). Plain-glazed tiles were found in contexts dating between the 14th and early 16th century. The medieval deposits with Inlaid tiles were of 14th or 15th century date.

104. YORK: BOOTHAM, SE/595527

Tile groups, designs: **Plain-glazed.**

Publications: None

Other records: G.K. Beaulah note.

Extant tiles: English Heritage, Beaulah collection: EH/88092529; 88092534.

Assessment: The Beaulah collection included stray finds from St Peter's school playing fields, Bootham, where Beaulah was a school boy. The finds comprised an unused fragment of Plain-glazed floor tile and possible industrial ceramic (a block of fired clay, like a brick but with one corner cut away to leave a curved surface). They were initially thought to be related to floor tile manufacture. However, the floor tile was not a waster and the brick showed no sign of burning. A kiln, making tiles of some kind in the Clifton area (adjacent to Bootham), is mentioned in a 15th-century document (Betts 1985, 344).

Dating: Medieval.

105. YORK: CLEMENTHORPE PRIORY, SE/604513

(Benedictine nuns)

Tile groups, designs: **Plain-glazed.**

Publications: MacGregor *et al.* 1976.

Other records: Note in York Archaeological Trust records relating to Barley Hall.

Extant tiles: Yorkshire Museum: 1976.3 and 1977.3.

Assessment: Excavations on the site of the Benedictine nunnery at Clementhorpe in 1976–7 were mainly concerned with 19th-century finds of a Roman mosaic floor (Clark 1953, 165–6). Floor tile impressions were found on a medieval mortar bed thought to be in the nunnery church. No tiles were *in situ* but finds from this site, which were Plain-glazed, were subsequently used as reference material for the manufacture of the replica pavement for Barley Hall by John Hudson, a potter specialising in this field (see *York: Barley Hall*, 102 above).

Dating: None.

106. YORK: HOLY TRINITY CHURCH, GOODDRAMGATE, SE/604522

Tile groups, designs:

Plain-glazed.

Unallocated, designs Un/26, Un/27 (Fig 25.4).

Publications: None.

Other records: Stopford 1998.

Extant tiles: Yorkshire Museum: one tile and two fragments (YORYM 1998.3.4012)

Assessment: A patch of *c.*20 worn and abraded tiles were set in the floor under a wooden altar platform at the east end of the south aisle. The condition of the tiles made precise identification impossible and they have since been removed. Recent excavations in the church, carried out by N. Pearson, On-Site Archaeology, York, recovered a small number of tiles of several different types, including some possible post-medieval examples not included in this study.

Dating: None.

107. YORK: HOLY TRINITY PRIORY, MICKLEGATE, SE/598516 (Benedictine monks)

Tile groups, designs:

Huby/Percy, design 24.18 (Fig 23.1).

Plain-glazed.

Possibly **Nottinghamshire**, designs Wh/85, Wh/108.

Publications: RCHME 1972, 16; Wellbeloved 1881, 131, IITd.

Other records: Brook 1894–1917; Brook *c.*1921–36, nos 21, 58, 77, 174; Cook *c.*1844–71, pls 20, 58 and 60–2 (ref. 2, p.368).

Extant tiles: Yorkshire Museum: Brook/174 (design 24.18).

Assessment: Holy Trinity parish church occupies the site of an alien Benedictine priory, the church of which was eventually ruined when the tower collapsed in a storm of 1551. Medieval floor tiles were found during excavations carried out by Brook in 1899 in and around the priory church. In his notebooks Brook drew an example of design 24.18, found in the nave, which was donated to the YPS collection in 1915 (1894–1917, vol 2, 3). Brook recorded the tile in his subsequent catalogue of floor tiles in the YPS collection but there it was said to come from the site of the choir of the priory church (*c.*1921–36, no. 174). The catalogue also noted that plain green and brown glazed tiles were found in the excavations. These are not extant but a plan in one of Brook's excavation notebooks, not clearly labelled, might show an area of this type of paving (1894–1917, vol 1, 6). Brook does not give the dimensions of the plain tiles and they could have been either Plain-glazed types or plain examples of the Huby/Percy Group. Two plain tiles were recorded by Cook as found at a depth of 6' (1.8m) in Trinity Gardens in 1856. Cook's drawings were usually full sized (i.e. at 1:1 scale) and his drawings show the tiles as 125mm across. This is smaller than tiles of the Huby/Percy Group and would suggest that the tiles were of a separate Plain-glazed type. It seems likely that both Huby/Percy and Plain-glazed tiles were in use at Holy Trinity.

In his catalogue of the YPS collection, Brook's discussion of the Warrene arms does not provenance this Nottinghamshire series design to this site (Brook/21) but elsewhere Brook listed a Nottinghamshire tile of Wh/85 in the Cook collection as found at Holy Trinity, Micklegate, in 1891 (Brook/58). However, the earlier catalogue compiled by Cook listed this and another Nottinghamshire tile, of Wh/108, as 'Found in Micklegate 1871' (Cook 1844–71, 58, 60). The attribution to Holy Trinity must be doubtful.

Dating: None.

108. YORK: LORD MAYOR'S WALK, SE/604524

Tile groups, designs:

Huby/Percy, design 24.30 (Fig 23.1).

Possibly **Transpennine**: plain.

Publications: Wilson and Moorhouse 1971.

Extant tiles: Yorkshire Museum: three tiles (1971.306).

Assessment: Four tiles of two sizes were found in the cellar of 28 Lord Mayor's Walk in 1970. John Cherry, then of the British Museum, identified the design as similar to the badge of Sir Thomas Stanley, Lord Stanley, earl of Derby KG 1483–1504, as shown on the stall plates of the Knights of the Garter (Hope 1901b, pl 86).

Dating: Design 24.30 shows the *triskelion*, or three conjoined legs, which is the device of the Isle of Man, and bird's feet which are a badge of the Stanleys, earls of Derby. This design, which is also found on tiles of design 23.29 at Rievaulx, must date after 1400 when the earls of Derby were granted the Isle of Man.

109. YORK: THE RAILWAY STATION, SE/595515

Tile groups, designs:

Nottinghamshire, possibly designs 15.1, Wh/33, Wh/40, Wh/46, Wh/47, Wh/49, Wh/54, Wh/70 (Figs 18.1, 182).

Doubtful provenance: **Group 9**, design 9.1.

Publications: Raine 1891, IVT.

Other records: Betts 1985; Willmot *c.*1950–60 (ref. 22, p.368).

Extant tiles: Yorkshire Museum: Brook/76; 1923.195.

Assessment: The 1891 edition of the YPS handbook describes 20 tiles, hung in three sets in frames on the museum wall, as from the ‘Railway Excavation’ of 1874. This referred to the construction of the new station, outside the City Walls, which opened in 1877 and remains in use today. The tiles were recorded as found with many others in the floor of an ‘old house’ in what was then Bishop’s Fields. The author of the handbook thought they had been made at the Repton kiln, in Derbyshire, and been removed from St Mary’s Abbey. The only designs which might be identified from the descriptions in the handbook were armorial tiles with arms of Deincourt, Quincy and Cantilupe. All of these arms are represented in the Nottinghamshire series and have been discussed above in relation to Rossington Manor. In 1956, Whitcomb also attributed Wh/70 (the non-heraldic design found at Rossington Manor) to the site of the railway station at York (1956, 153). Willmot attributed Wh/46, Wh/47 and Wh/49 to this site (*c.*1950–60, T257, 258, 259; Betts 1985, 417, fig 73). The detail given in the handbook, and the relative closeness in its date to that of the excavation (17 years), might support the provenance of these tiles. It is not known whether there was any evidence to support the idea that they had been taken from St Mary’s Abbey, beyond the fact that tiles of this type had been found there. The tiles are not now identifiable in the museum collection.

One other Nottinghamshire Group tile in the Yorkshire Museum (an extant example of Wh/33) is much more tentatively associated with the construction of the railway. It is one of two tiles bought in 1923, the other one being design 24.15 of the Huby/Percy Group (1923.195). One tile was said to have been found near the railway station, the other from North Street, but there was nothing to suggest which was which. Design 24.15 is, however, separately provenanced to North Street by Brook (see entry 110, *York: Rowntree’s cocoa works, North Street* below). It is possible that the tile of Wh/33 did come from the railway station.

A shaped tile of design 9.1 (see Chapter 15), marked ‘City Wall, near railway station, York’, is unprovenanced according to Brook (Brook/76). The tile may have been marked in the 1950s.

It is surprising that there are no tiles provenanced to the site of the old railway station, which was built in *c.*1839–45 inside the city walls, south-west of the Ouse, in the area of Tanners’ Moat, Tanner Row and Toft Green (RCHME 1972, III, 53–5). Part of this area was occupied by a Dominican Friary where finds of floor tiles might be expected. However, almost no information about the medieval remains has survived (Palmer 1881, 396–419; RCHME 1972, III, 53).

Dating: None

110. YORK: ROWNTREE’S COCOA WORKS, NORTH STREET (TANNERS’ MOAT), SE/600518

Tile groups, designs:

Transpennine, design 23.2 (Fig 22.1).

Huby/Percy, designs 24.2, 24.3, 24.16, 24.21, 24.22, 24.25, 24.28, 24.29 (Fig 23.1).

Publications: Raine 1891, IVT.

Other records: Betts 1985, 417–18, nos 32, 33, 25, 28, 22, 30, 26, 31, 23, 29; Brook *c.*1921–36.

Extant tiles: Yorkshire Museum: Brook/203, 204, 205, 206, 207, 208, 227, 228, 229, 231.

Assessment: Several tiles were found in 1888 in Tanners’ Moat Yard, when workmen dug a hole to build the chimney of Rowntree’s factory at its old site in North Street. The circumstances of the find were noted in the 1891 edition of the YPS handbook where the tiles were described as wasters. They were also recorded by Brook, who described the North Street site as a tilery. Tiles labelled ‘Tanners’ Moat’ are extant in the Yorkshire Museum collection. The extant tiles are clearly unused, with no sign of wear and no mortar attached to the sides or bases, but they are not overfired or damaged in a way that would confirm they were wasters. The slip is badly smeared, making the designs indistinct, but this is a common fault in the manufacture of 15th-century tiles in Yorkshire and did not usually prevent them from being used. Although the various records differ as to precisely which tiles were found at this site, the general provenance to North Street seems sound.

Dating: None.

111. YORK: ST ANDREW’S PRIORY, FISHERGATE, SE/605514 (Gilbertine canons)

Tile groups, designs: **Plain-glazed**

Publications: Stopford 1996.

Extant tiles: York Archaeological Trust: 204 tiles or fragments (1984–86.9).

Assessment: The assemblage was found during excavation of the priory site by York Archaeological Trust between 1984 and 1986. All the tiles were from contexts associated with the Gilbertine priory but no examples were found *in situ*.

Dating: The distribution of the tiles was confined to the excavated area of the mid 14th century church and chapter house. This church was built over the nave of the 13th-century church. There were no tile finds from the east end of the 13th-century church, which was also excavated. This distribution suggested that the floor belonged to the second church and chapter house. If so, the tiles dated after the construction of the second church in the mid 14th century. Contextual evidence was, however, thought by the excavator to suggest an earlier date, placing the floor in the mid 13th century (Kemp and Graves 1996).

112. YORK: ST MARY’S ABBEY, SE/598523 (Benedictine monks)

Tile groups, designs:

Probably **Inlaid**, design 4.2 (Fig 12.2).

Usefleet, designs 6.2, 6.9 (Fig 13.3).

Nottinghamshire, designs 15.1, Wh/35, Wh/40, Wh/57, Wh/80, Wh/85, Wh/99, Wh/133. Possibly also designs 15.2, Wh/24, Wh/30, Wh/38, Wh/44, Wh/46, Wh/70a, Wh/70d, Wh/86, Wh/100, Wh/109, Wh/110 (Figs 18.1, 18.2).

Probably **Plain-glazed**.

Provenance uncertain: **Unallocated**, design Un/17 (Fig 25.4); **Group 20**, design N/32

Publications: Brierley 1901; Gutch 1918, 439; Howarth 1899, 230; Raine 1891, IITb; RCHME 1975; Tate 1913; Wellbeloved 1829, 10 and pl LI; 1881, VIITb, VIIT, IXT and XT; *York Courant* 1827.

Other records: Betts 1985; Brook 1913; *c.*1921–36; 1934; Hohler *c.*1940–1; Renaud 1887–8, vol 3, 323 (ref. 17, p.368); Yorkshire Museum 1950s list (ref. 23, p.368).

Extant tiles: English Heritage, Beulah collection: EH/88092647.

Yorkshire Museum: Brook/6, 9, 12, 15, 28, 29, 42, 44, 45, 46, 50, 53, 54, 55, 56, 57, 60, 71, 72, 216, 237 and 18 fragments marked as from excavations in the 1950s (2000.4265–2000.4276; 2000.4278; 2000.4279; 2000.4281–2000.4284).

Assessment: The Yorkshire Museum, which houses the YPS collection, is located on the site of St Mary's Abbey and a large proportion of the tiles in the collection has been provenanced to St Mary's at one time or another. Unsupported attributions of tiles in the Yorkshire Museum collection to St Mary's Abbey are therefore suspect.

The site has been subject to considerable disturbance. It was quarried for building material in the centuries following the Suppression, and, like Kirkstall, was further disturbed during landscaping to form a public park (see for example Norton 1993b). Antiquarian records suggest that the site had been cleared of tiles at an early date. In 1900, the YPS Annual Report noted that excavations in the northern half of the east end of the church had found no trace of paving or mortar bedding, and that only one or two fragments of tiles had been found (Brierley 1901, 38). In 1913, a bedding layer for tiles was found under the turf in the east end of the church. No tiles remained, although some possibly similar examples were found embedded in the wall. These red tiles measured 9" across by 2" deep (225 × 50mm) and were therefore larger than any of the decorated tile types known from the site (Tate 1913). The only tiles actually recorded as being found *in situ* were some examples of unknown type, in the west end of the south range, near the entrance to the refectory undercroft (Wellbeloved 1829, 10, pl LL). Presumably any decoration would have been noted. However, there are no extant examples of Plain-glazed tiles from the site.

All the decorated tiles recovered from the site were stray finds. In 1827–9 some examples were found amongst rubbish at the east end of the warming house, but their designs were not recorded (*York Courant* September 4th, 1827). Tiles of the Usefleet series provenanced to St Mary's included an example of 6.2 picked up from the surface of the site by G.K. Beulah. A tile of design 6.9 was found in *c.*1835, south of the presbytery, when digging the foundations for the Blind School in the King's Manor (Sheffield City Museum, Bateman collection J93.749).

Of the Nottinghamshire assemblage, the alphabet tile(s) and other decorated fragments were said to have been found near the west side of the cloister but the impression given was that they were not *in situ* (Wellbeloved 1829, 10, pl LL). Later attributions associated the alphabet design more firmly with the claustral walks but there is nothing to support Brook's allocation of it to the east claustral walk, unless this was a further example found in the excavations which he carried out in 1912–13 (Wellbeloved 1852, no. 8; Brook *c.*1921–36, no. 42). As in several other cases, it is uncertain precisely which or how many of the documented examples of this design were found at St Mary's and which, if any, accord with the extant examples in the Yorkshire Museum. The alphabet tile described in the 19th-century editions of the YPS handbook apparently had all but the second line reading from right to left. This was reiterated in 1918 by Gutch, who suggested that two fragments had been found. The tile provenanced by Brook has all lines reading from right to left (Wh/133). More than one version of this design is known in the midlands (Wh/132, Wh/133 and Wh/134) but none accord with the YPS description. If the first example found at St Mary's was another variant, it now appears to be lost.

Brook's catalogue of tiles in the museum collection records that an example of Wh/85 and fragments of Wh/99 were found in his excavations in the choir in 1912 (*c.*1921–36, 12, 57). The actual finds from the 1912–13 excavations were not included in the catalogue, but some details of tiles and other objects were sketchily recorded by Brook from the museum cases in which they were displayed in 1934. It was not possible to equate these records, which are in the York City Archives, with particular tiles and there was no contextual information. However, a drawing of design 4.2 of the Inlaid Group suggested that one or more tiles of this type were found on the site. Brook's awareness of the problems of provenancing the YPS tile collection did not, unfortunately, influence his recording of his own excavations.

The excavations carried out by Wilmott in 1952–6 included the south aisle of the church, north walk of the cloister and north end of the west range. There are no published records. A note in the Yorkshire Museum file lists designs apparently found in 1952–3 (Nottinghamshire designs Wh/35, Wh/44, Wh/70a, Wh/80, Wh/99, Wh/100). A few Plain-glazed examples and thirteen decorated tiles in the collection were also marked in black ink as from the 1953–4 phases of these excavations (Nottinghamshire designs Wh/35, Wh/40, Wh/57, Wh/99; Unallocated design Un/17, see further below). An unstratified tile of Wh/70d was found in excavations by York Archaeological Trust in 1988 (1988.18.2).

Although it is impossible to be absolutely certain of the provenance of tiles in the extant collection, it appears likely that many of the Nottinghamshire Group fragments in the Yorkshire Museum did, in fact, come from St Mary's. Three tiles of the Nottinghamshire series are illustrated in the RCHME entry for St Mary's Abbey (RCHME 1975, figs 1 and 27). The provenance of one of these, the anthropomorphic musicians (Wh/109), is supported by Brook (Brook/60); the zodiac tile (Wh/127) is only 'said to have been found' at St Mary's by Brook (Brook/74) and two examples of the bell, sword and key design (Wh/86) were unprovenanced according to Brook (Brook/70 and 71). The zodiac tile was listed in the YPS handbook by 1881 but was unprovenanced. The musicians, and the bell, sword and key design were attributed to St Mary's in the 1891 edition of the YPS handbook, and the musicians were attributed to York Minster by Renaud (1892, fig 12). Also in the 1891 handbook were Wh/24, Wh/38, Wh/46 and design 15.2. Wh/110 and design 15.2 were attributed to St Mary's Abbey by Renaud in 1887–8. Brook's sketch in the York City Archives suggested that some of the unprovenanced tiles of design 4.2 (Inlaid Group) in the Yorkshire Museum may also have come from this site. However, one of these, attributed to St Mary's York in some sources, is actually labelled Byland. A cardboard box of unmarked fragments, mainly of Usefleet types, may well be other examples from excavations at St Mary's Abbey, York.

There are two surprising attributions in the extant assemblage which might be questioned. One is Brook's assertion that the complete, pristine example of Group 20 in the Yorkshire Museum was found here (design N/32, Brook/9). Several examples of this group are known from Cowick Manor, East Yorkshire (Fig 21.1). Without any supporting evidence, Brook's attribution must be doubtful. The second is the fragment of design Un/17 which is otherwise only known as a product of the 14th-century Penn tiling in southern England. However, the York example (2000.4284) is marked as if from the 1950s excavations (SMA55 T4XW) and it seems unlikely that this could have happened in error. The provenance of this tile to St Mary's Abbey must

therefore be considered possible, although the design is unknown elsewhere in the north. There are some circumstances that might allow a mistaken provenance. Design Un/17 is included in the Rowe collection of drawings in the British Library, attributed to Marsworth, Buckinghamshire (British Library Additional Ms 416,70, Rowe collection 11, 144, ref. 18, p.368). As noted in Chapter 26, Rowe drew many designs in the Yorkshire Museum collection but he also drew material from sites all over the country. These activities might allow the possibility of a mix up. However, typologically, the fragment in the Yorkshire Museum is similar to material of the Transpennine Group and, as noted in Chapter 8, designs were copied over long distances at that time.

Dating: Tate was the only excavator who mentioned the date of the tiles at St Mary's. He thought that the tile impressions found in the east end of the church in 1913 belonged to the early church. The mortar bedding was said to be 2' (0.6m) below that of the 13th-century transepts.

113. YORK: ST MARY'S CHURCH, BISHOPHILL SENIOR, SE/600515

Tile groups, designs: **Plain-glazed.**

Publications: Ramm 1976, 57.

Extant tiles: Yorkshire Museum: five tiles and one fragment (1978.63; BHS 48, 49, 52, 53, 54, 64).

Assessment: The extant tiles were from an assemblage of ten tiles found in excavations on the site by RCHME in 1964. Nine tiles were from grave-fill but one was *in situ* over the footings of the east end of the Saxon church, which was extended in the 13th century. The excavator felt that they had probably been used as a plain border to a patterned floor but no decorated tiles of similar manufacture have been identified.

Dating: After the 13th-century eastward extension.

114. YORK: ST MARY'S HOSPITAL, HORSEFAIR, SE/602528 (Union Terrace)

Tile groups, designs: **Plain-glazed.**

Publications: Richards *et al.* 1989.

Extant tiles: Yorkshire Museum: 1972.18.

Assessment: Buildings interpreted as part of the Carmelite Friary were converted to a medieval hall layout in the early 14th century. These structural changes were thought to correspond with conversion of the site to St Mary's Hospital. Floor tile impressions were preserved in the bedding plaster of the latest floor at the west end of the hall. The impressions were set diagonally to the walls and measured c.120mm across, in line with the extant tiles.

Dating: The structural alterations which preceded the tiled floor were dated to the early 14th century. This phase of use continued to the mid 15th century. The floor tiles were part of the latest floor in this phase.

115. YORK: OTHER

Tile groups, designs:

Plain Mosaic, design 1.15 (Fig 10.15).

Nottinghamshire, designs 15.2, 15.5, 15.6, Wh/74, Wh/108, Wh/144 (Figs 18.1, 18.2).

Huby/Percy, design 24.33 (Fig 23.1).

Unallocated, designs Un/21, Un/23, Un/24, Un/25 (Fig 25.4).

Publications: Howarth 1899, 230–1; Hunter-Mann 1990.

Other records: Betts 1985; Brook c.1921–36, nos 34, 58, 222 or 223; Cook 1844–71, pls 11, 12 and 13, 22–45, pl 18, 58, pl 19, 60 (ref. 2, p.368); Rowe 1881, vol 11, 162 (ref. 18).

Extant tiles: York Archaeological Trust: finds from various excavations in York (see Table 27.3).

Yorkshire Museum: Brook/228, 76, 211, 239, 245.

Sheffield Museum: J93.753, J93.755.

Meltons Too, 25 Walmgate, York.

Assessment: The tiles listed in Table 27.3 are stray finds recovered by York Archaeological Trust from various sites in York. There is no reason to suppose that they formed part of a floor on the sites where they were found but, on the other hand, they are all likely to have been used somewhere in the city in the medieval period. Two other stray finds from York were listed by Brook and remain extant in the Yorkshire Museum collection (Brook/239, 245; design Wh/108).

Table 27.3: Tiles found in excavations in York but not *in situ* or related to a floor

<i>YAT context no.</i>	<i>Design no.</i>	<i>No. of tiles/frags</i>	<i>Group</i>	<i>Site name</i>	<i>Date of deposits</i>
1974.5 572 /1646\	1.15	1	Plain Mosaic	St Helen's, Aldwark	pre c.1550
1977.7 V /2445\	Un/24	1	unallocated	Coppergate	Unstratified
1982.22 1384 /128\	Wh/74	1	Nottinghamshire	Coppergate, Castlegate, Piccadilly	Watching brief
1982.22 1384 /131\	Wh/144	1	Nottinghamshire	Coppergate, Castlegate, Piccadilly	Watching brief
1987.1 II 20 2062 /270\	15.5	1	probably Nottinghamshire	Coffee Yard	Post-medieval
1987.21 3012 /254\	Not illustrated	1	?Pre-conquest decorated tile	22 Piccadilly	14th century (spot date)
1987.21 2146 /710\	Not illustrated	1	?Pre-conquest decorated tile	22 Piccadilly	?11th century (spot date)
1988.24 u/s /1223\	24.33	1	Huby/Percy	Wellington Row	Unstratified
1990.8 1009	15.6	1	probably Nottinghamshire	Clifford Street: Franciscan Friary site	Unstratified
1993.5007 6337	Un/23	1	unallocated	Rawcliffe	c.13th–16th century
1995.89 1003	1.15	1	Plain Mosaic	Spenn Lane	Early modern
WB TR 9 1904	Un/25	1	unallocated	Walmgate	14th–15th century

These Nottinghamshire Group tiles were found on the site of an old house when Parliament Street was constructed. Other tiles provenanced by Brook, but now missing, were from the site of the Bird in the Hand hotel, which stood at the junction of St Leonard's Place and Bootham until the road was widened and space made for the Art Gallery (Brook/246, 249). Brook's drawings of these tiles look like design 7.98 of the Decorated Mosaic series although Whitcomb attributed Wh/30 to this site (1956, 135). A further stray find, dredged out of the River Ouse in 1878, was recorded in the Yorkshire Museum collection by both Rowe and Brook but is not now extant (Rowe/162; Brook/211; design Un/21).

Several tiles in the Yorkshire Museum and Sheffield City Museum collections were recorded as found during excavations between 1847 and 1853 in the City of York by James Cook (Figs 26.2–26.4; see Chapter 26). The provenance of these tiles was considered doubtful by Brook and other antiquarians and the tiles are largely of types not otherwise known from the city or, in several cases, from the region. Although some unusual material has been found in recent excavations in York, the provenance of tiles in the Cook collection remains doubtful.

Dating: The tiles excavated by York Archaeological Trust are thought to have been made before the dates given in Table 27.3.

Sites located outside the study area

The following entries list sites outside the study area that had tiles probably made in the study area. Only those tiles relevant to the study area are given, not their full assemblages.

116. DORNOCH CATHEDRAL, SUTHERLAND, SCOTLAND

Tile groups, designs: **Decorated Mosaic**, design 7.158 (Fig 14.1i).

Publications: Richardson 1929, 305, fig 21; Norton 1994, 146, fig 6.6 and fn 40.

Extant tiles: National Museums of Scotland, Edinburgh: LR 87.

Assessment: The tile was said by the donor to be from Dornoch Cathedral.

Dating: None.

117. NEWBATTLE ABBEY, DALKEITH, MIDLOTHIAN (or Newbottle; Cistercian monks)

Tile groups, designs, shapes:

Plain Mosaic, designs 1.13–15, 1.17. Shapes 3–4, 11, 34–5, 43, 46–8, 54, 55, 56, 58, 60, 88–9, 101, 103–5, 110, 114, 124, 129, 156, 159, 163, 166–7, 267, 280, 300, 325, 357–8, 371, 382, 393, 396, 404, 427, 429–30, 434–5, c.100mm squares (Figs 10.1–10.3, 10.6, 10.14, 10.15, 27.47–27.52).

Publications: Carrick 1908; Richardson 1929; Robertson 1952–3.

Other records: Historic Scotland 1953.

Extant tiles: National Museums of Scotland, Edinburgh: 34 Plain Mosaic tiles (HX 1081–1115).

Historic Scotland: c.150 Plain Mosaic tiles displayed at Melrose Museum, Melrose Abbey, Melrose, Borders (MEL 001–009, 011–032, 763–867, 889–899).

Newbattle Abbey (Newbattle Abbey College, Dalkeith, Midlothian EH22 3LL): a few loose tiles remain at the site.

Assessment: The loose assemblages at both Edinburgh and Melrose have been subject to restoration or conservation work. However, the display at Melrose gives a good idea of how the tiles were used in a floor, and both collections contain excellent examples of the unusual reversed inlay technique.

The provenance of Plain Mosaic tiles to Newbattle is not in doubt. Excavations at Lord Lothian's mansion began in 1878, continuing in 1892–4, with a few details recorded and published by J.C. Carrick. The excavations were intended to uncover the plan of the church and further open up the 'crypts' upon which the mansion had been built (thought by Carrick to be the east range of the cloister). On the instructions of the Marquess, one of the restored rooms was floored with wood cut into shapes like the tiles that had been found on the site of the church. The work was done by John Ramsay, Clerk of Works of the Newbattle estate, using different coloured woods from trees grown in the park (yew, oak, maple, plane and laburnum). This extraordinary replica floor remains intact in the college chapel (Figs 27.50, 27.52).

The wooden tile shapes in the chapel floor are accurate representations of material in the extant assemblage from Newbattle, and are known from sites in Yorkshire, but some of the arrangements in the wooden floor are unknown elsewhere.

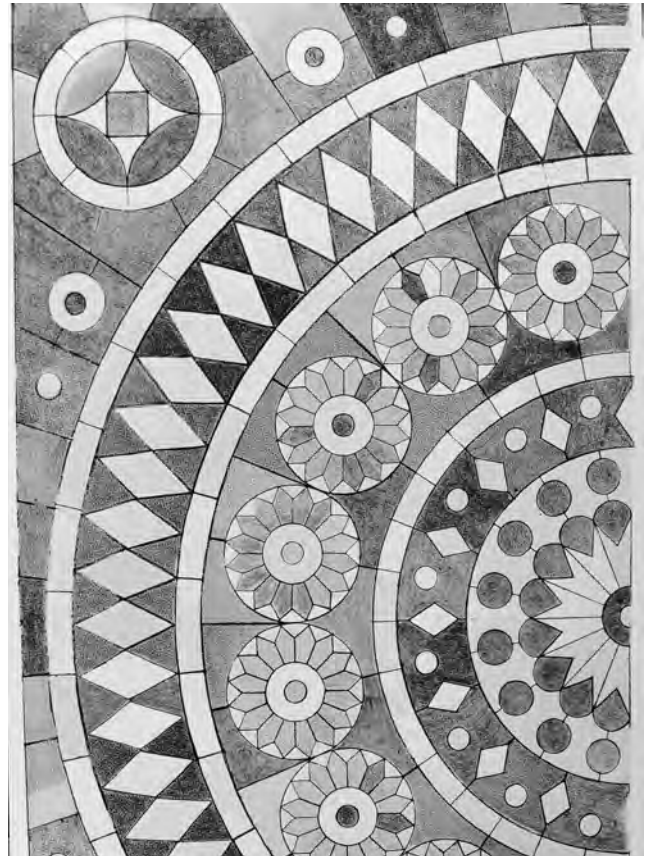


Fig 27.47: Reconstructions of Plain Mosaic roundels from Newbattle Abbey by J.S. Richardson 1929 (Wheel No. 1, left, Wheel No. 2, right) probably partly based (incorrectly) on the wooden floor of c.1895 (shown in Figs 27.50 and 27.52)

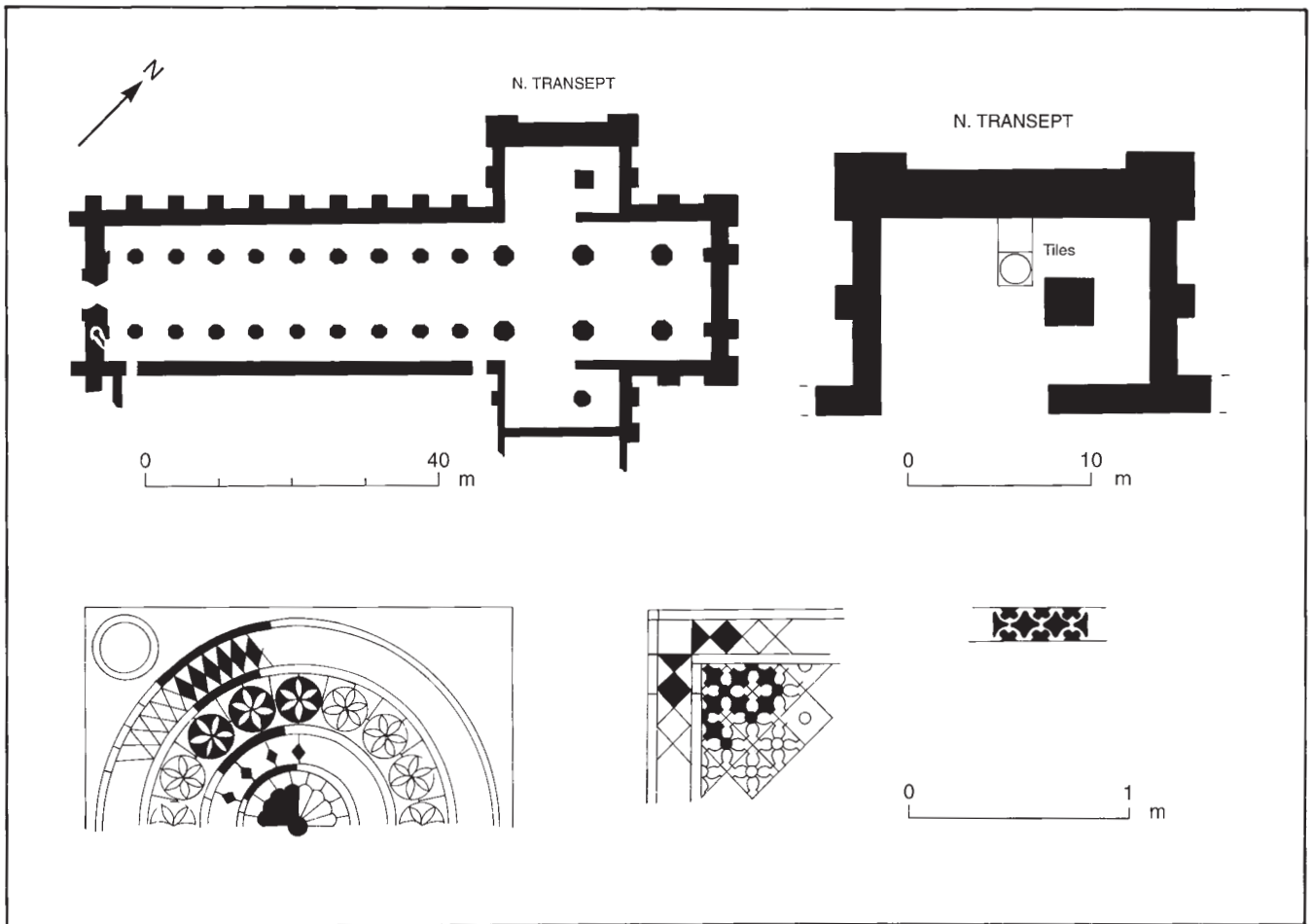


Fig 27.48: Plain Mosaic found in the north transept of Newbattle Abbey church, 1952–3: part of an M.65 roundel and mosaics 4, 15 and 88



Fig 27.49: Plain Mosaic found in the north transept of Newbattle Abbey, 1952–3. © Historic Scotland



Fig 27.50: Newbattle College, part of an imitation Plain Mosaic floor in the chapel. Made from wood grown in the park, c.1895. Compare with Richardson's 1929 reconstructions, Fig 27.47



Fig 27.51: Excavations at Newbattle Abbey, 1952–3: discovery of part of a Plain Mosaic roundel (M.65). © Historic Scotland

At the east end, on either side of the altar, there are panels of replica tiles made of resin of design 1.13. Medieval examples of design 1.13 from Newbattle are extant in the collection of the National Museums of Scotland. The reconstructions of Plain Mosaic arrangements from Newbattle, published by J.S. Richardson in 1929 (Fig 27.47), were probably also influenced by the chapel floor (discussed further in Chapter 10, pp.103–4).

In the 1950s, further paving was uncovered in the north transept of the church, including part of a Plain Mosaic M.65 roundel (see Figs 27.48–27.49, 27.51; Robertson 1952–3). The excavation records show parts of all bands of an M.65 roundel in exactly the same arrangement as those re-set at Byland (Fig 10.6; with the colours the same way round as the example in north-east corner of the presbytery at Byland) and other arrangements known at sites in Yorkshire. It seems likely that the wooden arrangements at Newbattle are a mixture of what was known and what was surmised from the shapes of tiles turned up in the 19th-century excavations (see further, Chapter 10).

118. REEDHAM, NORFOLK: ST JOHN THE BAPTIST'S CHURCH

Tile groups, designs: **Decorated Mosaic**, designs 7.128, 7.136, 7.155, R7.172.

Publications: Rogerson *et al.* 1981–3.



Fig 27.52: Newbattle College, part of an imitation Plain Mosaic floor in the chapel. Made from wood grown in the park, c.1895. Compare with Richardson's 1929 reconstructions, Fig 27.47

Other records: Rose 1988.

Extant tiles: Norwich Castle Museum: 26 tiles (L1983.2).

Assessment: Twenty tiles were found at Reedham Church (20km south-west of Norwich) during restoration work following a fire in 1981. They included six square tiles of the Decorated Mosaic Group. Six further tiles of this type were found during repair work carried out in 1984. The first batch of tiles were found in the south chapel below a 'late' floor and under a bedding layer of sand, c.50mm down, at about the level of the present nave floor. The workmen felt that they had been placed there long ago. The Decorated Mosaic tiles at Reedham are complete outliers to the rest of the Decorated Mosaic distribution pattern, and one suspicion was that they were the remains of an antiquarian collection, perhaps the hobby of a 19th-century clergyman. However, several aspects of the assemblage argued against this. Among the 12 Decorated Mosaic tiles, eight examples were of a single design (design R7.172), and several of these were worn. This is unlikely in an antiquarian collection – most collectors would have kept the best examples and

swapped the rest. In addition, the bases of the 1988 finds had a thick layer of coarse, crumbly mortar, which looked medieval. This would have been removed from collected tiles. A note with the 1988 tiles said that they were discovered under and around the Berney tomb in the south chapel. The Berney tomb is one of two ornate terracotta tomb chests against the south wall of the church. Henry Berney died in 1584. As far as is known the tombs and this area of the church had not previously been disturbed. Finally, similarities in design but differences in manufacture suggested that 14th-century tilers working at a kiln site at Bawsey, near King' Lynn, Norfolk, had knowledge of some of the northern Decorated Mosaic square tile designs (see Chapter 3). The presence of some Decorated Mosaic tiles in Norfolk would explain how this occurred. It seems likely that the Decorated Mosaic tiles at Reedham were in use in a medieval floor at this site.

Dating: The south chapel of Reedham Church was built c.1300, providing a *terminus post quem* for the use of the tiles in this location.

Appendix 1 The analysis of medieval mosaic and other floor tiles from Yorkshire by inductively coupled plasma atomic emission spectrometry

by M. J. Hughes

Introduction

The aim of this research was to investigate the production and distribution of mosaic and other floor tiles in Yorkshire and to determine whether Yorkshire production centres supplied tiles to localities in Northumberland and Scotland. A further aim was to examine the relationship between the production of both mosaic and decorated floor tiles at some Yorkshire monastic sites. The tiles had been divided stylistically into three Production Groups (PGs) according to the type of tile: Plain Mosaic (PG15); a series of square Inlaid tiles (PG12) analysed to compare mosaic and inlaid tiles produced at the same site; and slip decorated tiles known as 'Usefleet' (PG14) after an inscription which appeared on some of them. This investigation is a provenance study (Hughes 1991a; Lambert 1997) using the chemical analysis of the clay of the tiles as a chemical 'fingerprint' to recognise the original clay deposit from which the tiles were made. The method depends upon differences in the composition of clays found in different places, analysed by a suitable analytical technique; usually the differences increase the further apart the clay deposits are.

A range of provenance projects on medieval decorated floor tiles in the English Midlands have been carried out by the Department of Scientific Research at the British Museum using neutron activation analysis (NAA), which successfully identified places of production of tiles found on consumer sites as well as differentiating between different periods of tile production at a single site. Initial work on medieval floor tiles from Nottinghamshire, Leicestershire and Derbyshire (Leese *et al.* 1986) has been followed by studies on the tiles of Bordesley Abbey, Worcestershire (Leese *et al.* 1989; Stopford *et al.* 1991). Similar programmes of neutron activation analysis have been carried out on other medieval and post-medieval pottery: Aspinall (1977) has described its application to Yorkshire medieval pottery, in the main, and Inscker and Tate (1991) and Caldwell and Dean (1992) to Scottish medieval pottery including Throsk-type pottery. A number of studies have dealt with imported Italian Renaissance ceramics (Hughes 1991b) and Hispano-Moresque and other Spanish pottery (Hughes and Vince 1986; Hughes 1991c; Gaimster *et al.* 1991) and Continental and English stove tiles (Gaimster *et al.* 1990). In the London area, it has also been applied to Surrey whitewares (Cowell 1988) and to post-medieval redwares and blackwares (Nenk and Hughes 1992; 1999).

Recently the decreasing availability of neutron activation analysis, and the special handling facilities need-

ed for radioactive materials arising from it, have prompted the search for alternative analytical techniques. Inductively coupled plasma atomic emission spectrometry (ICP-AES) is increasingly used in its application to ceramics. A significant feature of ICP-AES is that it is a widely available analytical technique, much used in geological laboratories (Potts 1987; Thompson and Walsh 1989) which, when carefully applied, gives reliable simultaneous results for a large number of chemical elements. These range from the major elements (aluminium, calcium, magnesium, potassium, sodium, iron, titanium, and phosphorus), to minor or trace elements (for example manganese, chromium, cobalt, strontium) and even a selection of the rare earth elements (which are normally measured by neutron activation analysis). The British Museum's extensive neutron activation database of analyses of decorated floor tiles from the Midlands would not be relevant to this investigation, and the lack of any other analytical data on Yorkshire tiles made it necessary to establish a database of tiles of known origin, which could then be used to answer questions of origin of other tiles, and ICP-AES was chosen for this.

Inductively coupled plasma atomic emission spectrometry (ICP-AES)

It was also of interest to see how well ICP-AES differentiated between tiles from different sites in comparison with neutron activation analysis, which had figured in the provenance studies listed above. The relative merits of these two techniques have been discussed by Hughes *et al.* (1991) but to date there have been only preliminary studies (Porat *et al.* 1991) to compare their relative success. An unpublished comparison by the British Museum between neutron activation analysis and ICP-AES on the same fifty samples of pottery showed a practically identical statistical outcome (as shown by principal components analysis) and gave the same interpretation and groupings of samples from different sites (Hughes unpublished). Early applications of ICP-AES to pottery included Roman Colchester terra sigillata (Hart *et al.* 1987), and the Alice Holt Forest potteries (Hart and Adams 1983). The technique successfully differentiated between pottery from different production centres. Recent applications of ICP-AES have included medieval tiles (Vince 1998) and pottery (Hughes 1999) from Cleeve Abbey in Somerset; South Hertfordshire-type greyware ceramics (Hughes forthcoming a); and medieval pottery from South Yorkshire and North Derbyshire (Hughes forthcoming b).

Table A.1: Summary of average composition of the tiles from each site resulting from analysis by inductively coupled plasma atomic emission spectrometry

	Al_2O_3	Fe_2O_3	MgO	CaO	Na_2O	K_2O	TiO_2	P_2O_5	MnO	Co	Cr	Li	Ni	Sc	Sr	V	Y	Zn	Zr	La	Ce
Byland (21)	m	15.6	4.11	1.04	1.41	0.48	1.14	0.109	0.030	23.8	102	42	50	14.1	87	116	19.3	87	132	36.6	69.6
	s.d.	3.1	1.36	0.31	0.93	0.14	0.47	0.39	0.045	7.1	27	13	43	3.8	15	34	6.0	28	57	12.7	27.9
Fountains (12)	m	17.7	5.12	2.35	1.76	0.28	1.74	0.122	0.071	17.6	92	86	65	14.1	100	76	14.6	58	74	34.7	76.9
	s.d.	2.4	0.84	0.95	1.20	0.05	0.32	0.12	0.032	4.7	15	18	6	2.1	16	14	2.1	18	8	4.5	10.3
Gisborough (15)	m	17.9	7.26	1.59	0.81	0.63	2.11	0.83	0.145	28.0	111	83	63	14.4	106	104	18.2	99	78	39.8	85.5
	s.d.	1.2	0.63	0.12	0.33	0.34	0.22	0.06	0.046	9.4	22	11	17	1.1	8	15	1.8	7	9	5.8	8.1
Helmsley (6)	m	15.6	4.38	0.79	2.19	0.50	1.34	0.089	0.035	25.7	100	41	24	15.3	135	135	15.0	61	90	45.5	86.8
	s.d.	0.4	0.14	0.08	0.61	0.05	0.09	0.04	0.013	2.1	11	2	8	0.4	25	5	1.9	3	13	2.7	10.3
Meaux (11)	m	18.1	5.72	1.59	3.69	0.65	2.39	0.81	0.230	31.8	100	90	31	14.4	148	114	18.9	85	119	35.3	79.2
	s.d.	1.1	0.55	0.23	1.45	0.39	0.16	0.05	0.034	3.3	27	4	25	0.9	24	15	1.9	8	27	4.0	10.5
Newbattle (10)	m	18.6	6.68	1.43	0.91	0.77	1.98	0.212	0.096	35.0	114	60	79	14.9	127	102	18.5	135	123	33.6	74.7
	s.d.	1.1	0.48	0.09	0.42	0.07	0.17	0.05	0.064	6.6	14	5	19	1.2	18	9	2.3	112	26	4.3	14.3
Newminster (11)	m	18.9	6.10	1.41	0.88	0.36	1.93	0.86	0.149	20.5	105	75	67	14.5	121	92	18.8	89	92	42.0	90.5
	s.d.	1.5	0.55	0.20	0.50	0.05	0.24	0.05	0.078	7.2	10	9	29	1.0	19	20	2.3	13	21	3.8	12.5
Rievaulx (18)	m	15.5	5.18	1.00	0.76	0.69	2.14	1.19	0.146	22.6	92	41	53	14.1	103	128	15.0	81	85	37.3	78.5
	s.d.	1.8	1.56	0.33	0.55	0.33	0.27	0.32	0.134	15.6	14	10	23	2.0	43	23	2.1	21	20	5.6	11.1
Sawley (9)	m	17.8	5.39	1.76	7.46	1.29	1.99	0.76	0.193	19.2	97	92	74	13.8	221	93	19.0	120	66	46.7	170.0
	s.d.	1.5	0.36	0.21	1.81	0.69	0.21	0.04	0.094	6.8	5	16	22	1.1	28	15	1.5	7	9	9.6	157.7
Thornton (10)	m	17.8	5.99	2.08	2.62	0.45	1.98	0.83	0.104	0.668	14.0	83	74	14.4	126	107	17.9	78	86	36.2	84.9
	s.d.	1.8	0.39	1.04	1.57	0.15	0.23	0.05	0.042	4.9	11	9	11	1.5	34	29	3.0	23	13	5.6	8.1
Wether Cote (7)	m	16.8	4.70	0.77	0.30	0.36	2.21	1.37	0.181	39.4	105	44	6	15.8	75	134	15.4	80	129	37.2	69.2
	s.d.	2.4	0.61	0.14	0.07	0.03	0.39	0.18	0.018	6.3	16	7	1	2.5	6	20	3.6	7	35	7.3	18.4
Whitby (6)	m	15.3	4.97	1.22	1.68	0.55	2.20	1.00	0.149	0.063	28.2	90	37	13.5	146	110	16.5	89	80	35.3	62.4
	s.d.	2.3	0.33	0.33	1.16	0.17	0.76	0.30	0.056	9.4	16	15	28	3.0	87	24	2.4	11	23	7.0	12.2
York (17)	m	16.6	5.27	1.85	2.44	0.34	1.90	0.75	0.182	0.101	22.2	101	63	13.9	112	83	17.5	76	64	40.5	88.4
	s.d.	2.9	0.54	0.67	1.71	0.20	0.31	0.07	0.120	10.3	17	32	23	2.1	29	12	2.1	26	14	6.1	36.4

Element symbols: Al_2O_3 :aluminium; Fe_2O_3 : iron; MgO: magnesium; CaO: calcium; Na_2O : sodium; K_2O : potassium; TiO_2 : titanium; P_2O_5 : phosphorus; MnO: manganese; Co: cobalt; Cr: chromium; Li: lithium; Ni: nickel; Sc: scandium; Sr: strontium; V: vanadium; Y: yttrium; Zn: zinc; Zr: zirconium; La: lanthanum; Ce: cerium
The elements from Al_2O_3 to MnO inclusive are quoted in weight per cent, and the rest in parts per million.
m: average (mean) of the analysis results for that site (the number in brackets is the number of sherds analysed) ; s.d.: one standard deviation about the mean.

In outline, the ceramic to be analysed is dissolved with acids and the solution sprayed into a high temperature flame (known as a plasma) of argon gas. In the plasma, the solution is immediately converted to a dry mist and heated by the plasma so that the elements of the sample emit light in the ultra violet and visible regions of the spectrum. Each element emits light of characteristic wavelength, and a spectrometer collects this light and splits it into the individual wavelengths corresponding to each element.

A powdered sample of the body fabric of each tile was obtained by drilling into the back or a broken edge with a synthetic sapphire drill to minimise contamination. A subsample of 0.100g was weighed into small individual covered Teflon (PTFE) beakers, treated with a mixture of hydrofluoric and perchloric acids and heated on a hotplate to dissolve the ceramic (high purity grades of acid were used throughout). After evaporating off the hydrofluoric acid, the residue was dissolved with nitric acid, made to volume with distilled water and the solution analysed in batches on an automated ICP-AES system. This was a model 3600 Jarrell-Ash ICP spectrometer at the Natural History Museum, Dept of Mineralogy, London; for calibration a set of six multi-element standard solutions were made from single-element commercial standard solutions (1mg/ml). Instrument stability was checked by running a 'drift' multi-element standard solution every 10 samples. There was negligible drift over a 4-hour period, after which the instrument was in any case recalibrated. It was possible to measure at least 21 elements in each sample using this procedure. To ensure accuracy in the results obtained, a standard clay was included in each batch of samples so that its results could be checked against its known analysis, and this proved entirely satisfactory. The clay used was the US National Institute of Standards and Technology (NIST) standard reference material SRM 679 Brick Clay.

The analysis results are given in summary for each site in Table A.1, and include chemical elements present in the clay at major (percent) and minor and trace (parts per million) concentrations. An important point is that ICP-AES allows, as in this case, the measurement of all the major elements of the clay (except silicon) as well as a representative cross-section of the trace elements, including lanthanum and cerium which form part of the rare earth sequence of the Periodic Table; these two elements are also important in provenance studies using neutron activation analysis. Both neutron activation and ICP-AES can measure the same nine elements in pottery: lanthanum, cerium, iron, cobalt, calcium, sodium, potassium, chromium and scandium. However, when ICP-AES and NAA results are combined (as in this example) the statistical conclusions on this reduced-elements set are less secure than when the full set of 20+ elements (from either ICP-AES or NAA) can be used for multivariate statistics.

Because of a contamination problem during dissolution, affecting a small number of samples for lanthanum, cerium, sodium and potassium, re-analysis was carried out on freshly-dissolved powder. The pairs of results for non-affected elements showed very good agreement, and showed there was no systematic inter-batch variation.

Statistical investigation of the ICP-AES analysis results

Because the analyses include a large number of elements, interpretation has to be made through multivariate statistical methods that examine all the elemental results simultaneously. Successful methods of examining the data, widely used in archaeological science, are the techniques of principal components, discriminant and cluster analysis, and descriptions of their application to archaeology are given elsewhere (for example, Orton (1980), Shennan (1997) and Baxter (1994)). For this set of samples, principal components and discriminant analysis proved very suitable for interpretation. As is customary, the analyses were first transformed to logarithms to eliminate problems with different magnitudes of element concentrations; the statistical tests were carried out with a computer package.

To obtain an initial overall view of the data, mountain plots (Leese *et al.* 1989) were drawn showing the concentrations of elements in groups of tiles from the same site, using logs and subtracting a constant (different for each element) from each value. It was clear from this that tiles from different sites do have different patterns of element concentrations, since the 'shapes' of the plots were different between sites but showed closely similar patterns within each site.

The mountain plot patterns of the tiles from Meaux and Newbattle seemed close except for the element calcium (Ca). The Meaux tiles have several per cent calcium in their clay whereas the Newbattle tiles contain less than one per cent. Calcium is usually present in raw clays as calcium carbonate as a separate component from the clay minerals that constitute the clay itself. It does occur naturally in many forms, including shell or other fragments mixed with naturally occurring sand. It is quite possible that the sandy fabric of the mosaic tiles from Meaux was made by adding a sand containing calcium to the raw clay, whereas the Newbattle tiles were made with the same clay but with calcite-free sand added. Visual examination of the fabric of the Meaux tiles under magnification failed to reveal any obvious white inclusions such as shell, so the calcium present in these tiles must have been incorporated into the clay fabric in firing and has lost its separate identity or is very finely dispersed. An alternative, less probable, explanation is the loss of calcium carbonate from the tile body during burial in waterlogged, especially acidic, soil conditions (Picon 1991). Myers *et al.* (1992) have also demonstrated this process for

sherds of calcareous 16th century Spanish pottery (containing over 10% calcium) found at waterlogged sites in the south-eastern United States and the Caribbean. Newbattle is not, however, a waterlogged site so this explanation is unlikely.

Following this initial investigation of the results, the ICP-AES analyses were interpreted using computer-based multivariate statistical programs for cluster analysis, principal components and discriminant analysis. For these tests, 14 of the 21 elements were selected because they were well-measured, with no missing values in the data, and represented a cross-section of the full range of analysed elements. These included aluminium, iron, calcium, magnesium, sodium, potassium, titanium, manganese, chromium, strontium, vanadium, lithium, scandium and yttrium.

Since the initial tests indicated that calcium alone might be a differentiating feature of dubious value, both it and sodium (which might also be a chemically mobile element during burial) were initially omitted from the element list. Some tests were also re-run with lanthanum and cerium included by omitting the contaminated samples from the tests, but adding these two elements did not significantly alter the conclusions.

Statistical tests

Before carrying out the tests, the analysis results were converted to logs, and the data treated by the centred log-ratio method to remove the effect of different amounts of diluting temper (Leese *et al.* 1989). The tests therefore investigated differences in composition of the clay itself rather than the sum of (clay+temper). In most cases the temper is quartz, which contains only very low amounts of elements apart from silicon.

Discriminant analysis

Only two definite kiln sites for mosaic tiles are known in Yorkshire at Wether Cote and Meaux. Discriminant analysis was initially used to test whether the products of the two kilns could be distinguished analytically and whether other tiles in the project could be assigned to either kiln. The discriminant analysis results showed that the kilns could be distinguished but that relatively few tiles from other sites were assigned to either of the kilns with a satisfactory degree of certainty. A principal components analysis of all the tiles in the project also illustrated this: the Meaux and Wether Cote tiles occupied a relatively restricted part of the plot, indicating that significant numbers of tiles are different from them in composition.

Discriminant analysis was also applied to test the hypothesis that the tiles from each site differ in chemical composition to each other. This equates to each site producing its own tiles and not transporting them elsewhere. The initial test showed that very few of the sites had a completely unique composition, and at Thornton, 9 out of 10 tiles were classified to other

sites. An average of 71% of the tiles from Byland, Fountains, Gisborough, Meaux, Newminster, Rievaulx, Wether Cote, Whitby and York were classified to the site where they were found. This does suggest that, while most tiles found at these sites were made *in situ*, a small proportion originated elsewhere. If Thornton were excluded from the discriminant analysis, a good success rate of 85% in classifying the samples was obtained.

However, although few sites had a unique chemical composition, they did show some major chemical differences between groups of sites. A scatter plot of the first two discriminant scores (Fig A.1) showed a separation of the tiles from different sites into two broad arrays: one containing all the samples from Byland, Rievaulx, Wether Cote, Whitby and St Mary's Abbey, and the other containing the Meaux, Gisborough, Newbattle, Newminster and Thornton samples. This split indicates two different chemical types of clay being exploited in the area, and archaeologically it indicates two broad but exclusive zones of interaction between sites.

Figure A.1 presents separately the discriminant analysis plots for the mosaic (1a), inlaid (1b) and Usefleet (1c) tiles, plotted with the same axis limits for comparison. It is notable in Figure A.1a that the mosaic tiles from Byland and Rievaulx are well separated – i.e. they have clearly different chemical compositions. All the inlaid tiles (Fig A.1b) except those from Gisborough plot in the same area of the figure as the Byland/Rievaulx mosaic tiles. The Gisborough inlaid tiles group on the right-hand side of Figure 1b, overlying the position of the mosaic tiles from the same site (1a). The Usefleet tiles (Fig A.1c) plot amongst the Byland/Rievaulx mosaic tiles, except one from York. In general, there are smaller ranges in chemistry of the clay of the inlaid (1b) compared to the Usefleet (1c) tiles from individual sites.

The analyses on the Thornton tiles were not used to set up the discriminant analysis but were plotted in Figure A.1a as 'unknowns'; they form groups of tiles which scatter widely on the Meaux side of the plot, implying that they represent the products of a number of different kiln sites.

If we assume that the tiles analysed from Meaux and Wether Cote are representative of the composition of tiles produced there, then we can conclude that relatively few of the tiles found elsewhere can be assigned to either kiln. This implies that there were other kilns in operation producing tiles apart from these two. It is noteworthy that the tiles from these two kilns occupy fairly compact groups of points on Figure A.1a – i.e. they all share a fairly similar chemistry at the same site, implying consistent use of similar clay at each.

Cluster analysis

Cluster analysis (Everitt *et al.* 2001) was used to look for samples with a similar pattern of composition (and

therefore origin). The program Clustan (Wishart 1987) was applied using 12 elements, selecting Wards's method and the Relocate options. A cluster that contained either products of a kiln or pottery of a particular art-historical type suggested a common origin of the whole cluster of samples, including any 'unknowns' which occur in it. Cluster analysis is therefore particularly useful for finding relationships between individual objects. It indicated only one tile whose composition was greatly different from the rest, namely no. 42 from Byland; discriminant analysis also picked out this sample as an outlier. It has a particularly low potassium content.

Cluster analysis was carried out both before and after log-centring, which reduces the effects of sand tempering either accidental or deliberate. Examination of the statistical coefficients after each reduction in the number of clusters showed a significant jump in going from 22 to 21 clusters, so the 22-cluster solution was adopted as being the most likely. When the project was planned, it was hoped that there would be few composition groups among the tiles selected, and the interpretation would be fairly simple. However, cluster analysis reveals a relatively large number of small com-

position groups, which can be associated into broader groups (see below). The distribution of tiles from different sites into these 22 clusters is summarised in Table A.2, and the tiles are listed in Table A.3. To a large extent the clusters are site-specific, i.e. the large number of clusters is related to the large number of sites from which samples have been analysed – tiles from one site tend to fall into the same group of clusters. One explanation is that each cluster represents one 'batch' at the kiln site. We know archaeologically of two kilns, but the broad range of compositions would suggest a larger number of sources, even allowing for the likely composition differences from batch to batch. The cluster dendrogram showed a major division into two broad compositions, as discriminant analysis indicated. These seem to correspond to two general production areas each of which contains one known tile kiln, Meaux and Wether Cote respectively.

The cluster dendrogram did, however, indicate close links between many of the clusters, so a principal component analysis was carried out to display the relationships between the clusters. The first two principal components (PC1 and PC2) contained 68% of the variability in the element concentrations, and the first

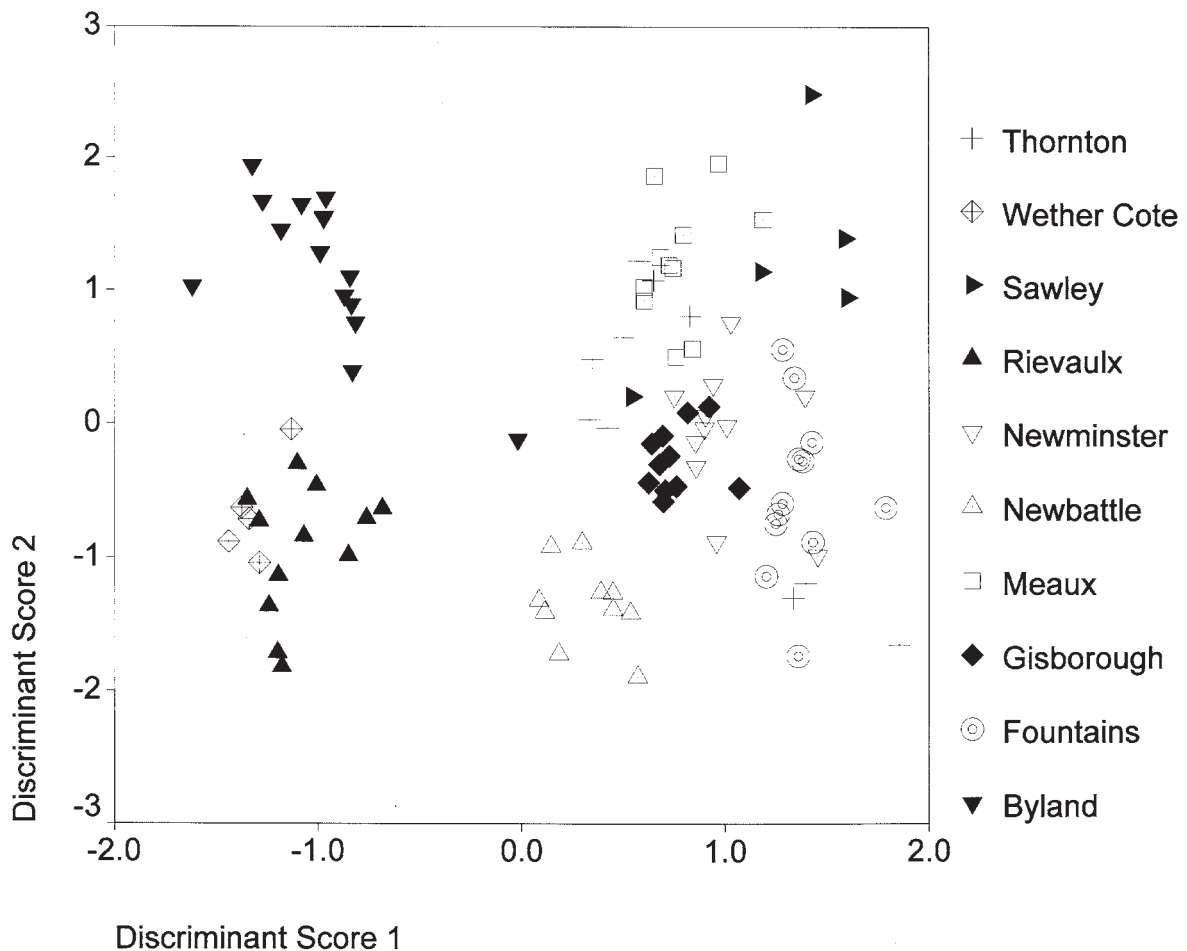
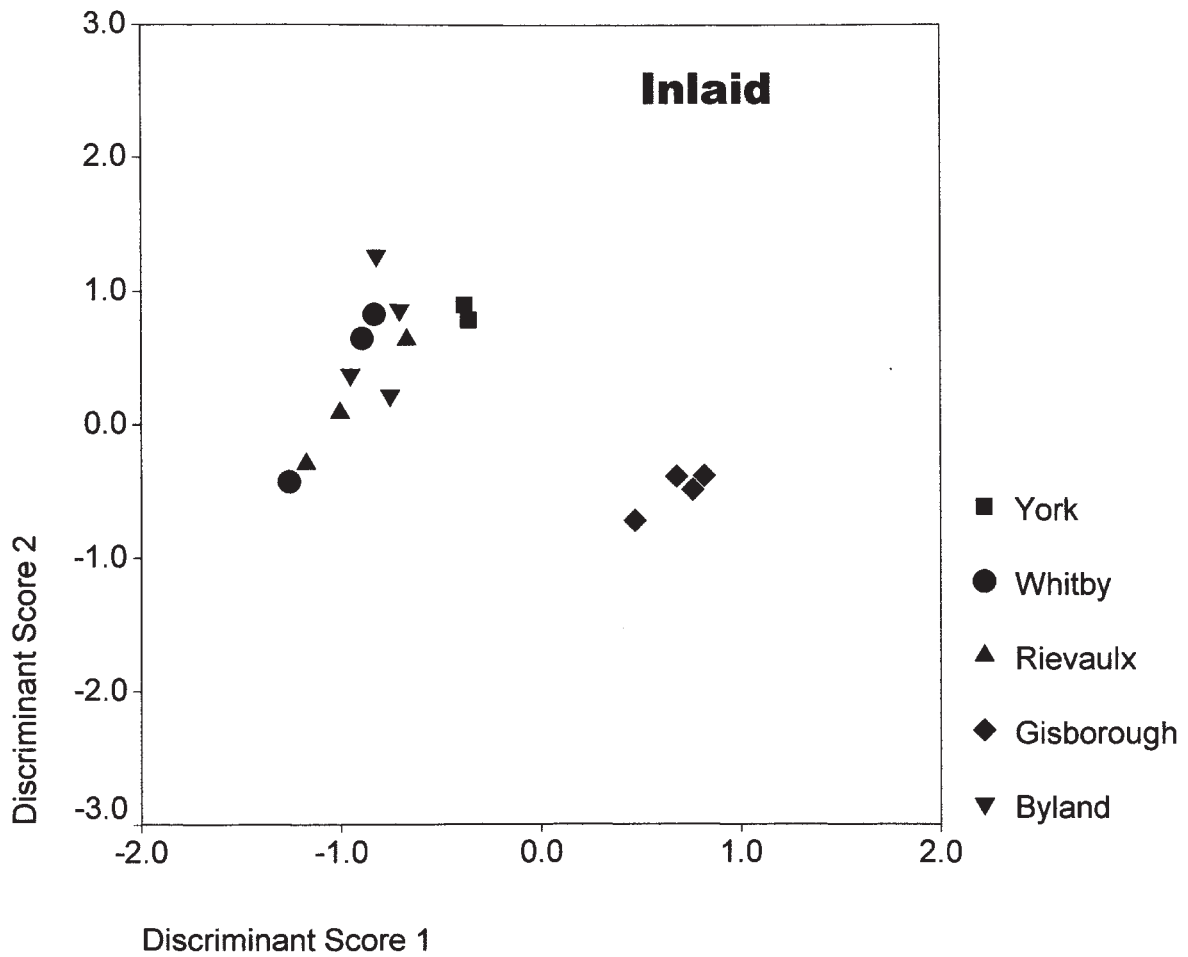


Fig A.1a–c: (above and facing) The first two discriminant analysis scores for all the tiles, shown separately for (a) Plain Mosaic, (b) Inlaid and (c) Usefleet. The mosaic tiles from Thornton in (a) were treated as 'unknowns'. Discriminant analysis looks for the most discriminating elements between the compositions of pre-defined groups – here, the tiles found at each site

b



c

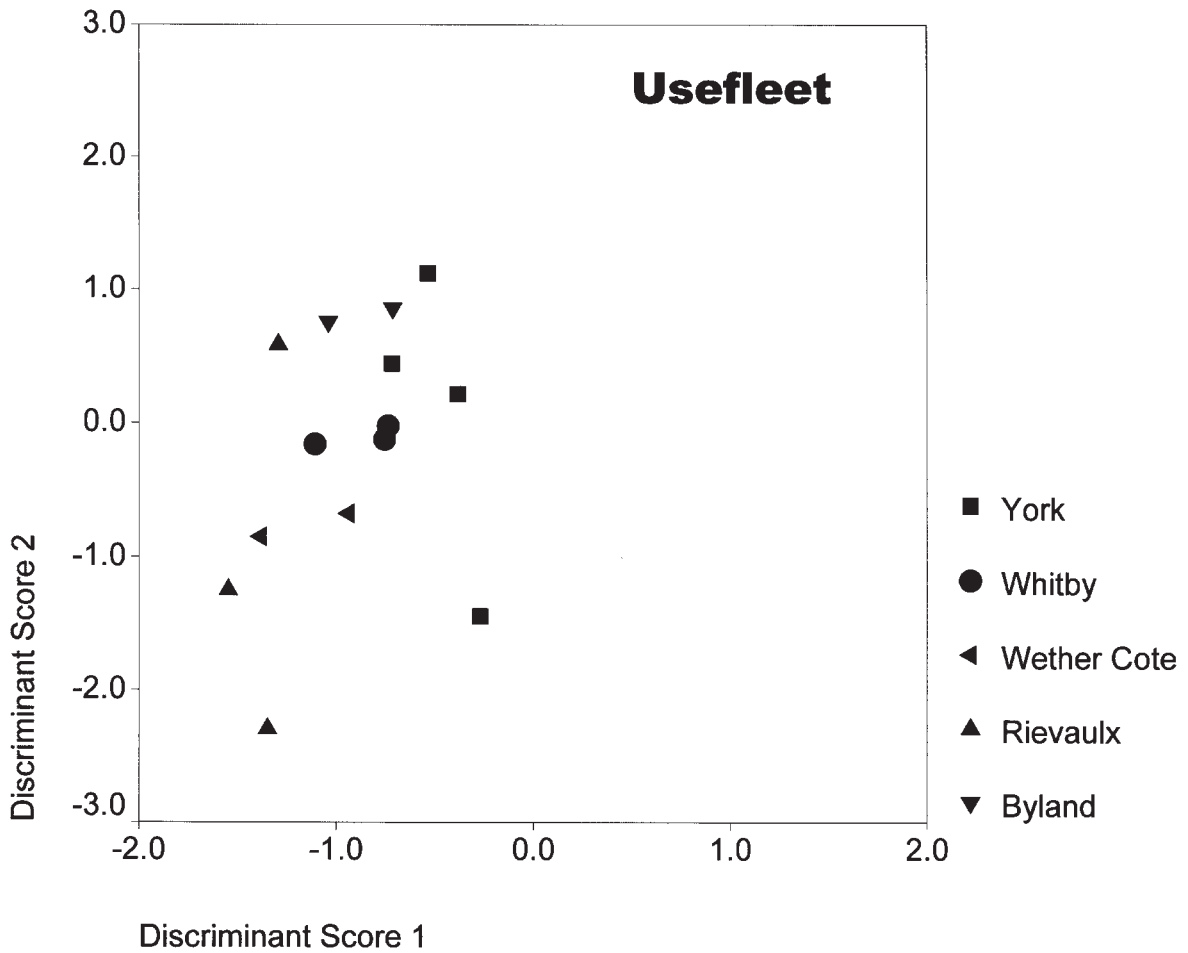


Table A.2: Results of cluster analysis: list of sites and numbers of samples from each site, assigned to each cluster

Cluster:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Byland	6	1	1	1	9	3																
Rievaulx	5															1	5	6	1			
Wether Cote																	7					
Whitby	2	1												1			1		1			
York			5					2													2	8
Fountains							1	7	4													
Gisborough										7		5	3									
Meaux										1		9			1							
Newbattle		10																				
Newminster							2				9											
Thornton									3		1	6										
Helmsley														6								
Sawley															5						4	

The sites have been listed in two groups (plus Sawley, which is a distinct group), to emphasise the non-overlap of samples in clusters between these two groups of sites.

three contained 78%. A plot of the first two principal components (Fig A.2) therefore gives a reasonable indication of the inter-sample relationships. The principal components results were also viewed in a three-dimensional plot of the first three components. It was apparent from this that some clusters which seem to coincide on the two-dimensional plot of Figure A.2 were in fact quite distinct on the third axis (PC3), which is not plotted in the figure. The first principal component (PC1) was correlated with Mn, Mg, Li, Fe, Ti, Sr, Al, and Y as the main elements (in descending order of contribution), and the second (PC2) with Li, Sr, V, Ti, Sc, Al and Y. While PC1 is correlated positively with many elements, it is not as exclusively linked to total element concentration as, for example, with the analyses of medieval floor tiles at Bordesley Abbey (Stopford *et al.* 1991).

The positions of the centres of the clusters have been shown in Figure A.2; the position of individual samples on the principal component plot is of less significance. It was possible to define associations between clusters, reflecting the more accurate representation of cluster relationships seen in three dimensions (PC1–3). These cluster associations are as follows, and are also shown in Table A.3 and Figure A.2:

- a 'Byland' group of clusters: clusters 4, 5 and 6
- a 'Wether Cote' group: clusters 14, 17, 18 and 19 (clusters 14 and 17 are intermingled, i.e. very close; 18 is on the outskirts of 17, and 19 is further out)
- a 'Meaux' group: clusters 10, 11, 12 and 15
- a 'PG12 (square Inlaid tile) and PG14 (slip decorated 'Usefleet' tile)' group: clusters 1, 2 (contains all the tiles from Newbattle) and 3 (clusters 1 and 3 seem closer to each other in the cluster analysis than 2 and 3), and
- a 'Fountains Abbey/York Minster' group: clusters 8, 9, 20 and 22 (clusters 20 and 22 seem close to each other, as do 9 and 22)

The 'Byland' group of clusters on the principal components plot seemed not very far from the 'Wether Cote' group, but the 'Byland' was still distinct, so that an origin of the 'Byland' group at Wether Cote seems less likely. It is noticeable that the PG12 and PG14 tiles (i.e. the non-mosaic tiles) from Byland were not present in this 'Byland' group, but formed a separate group of clusters, occupying only a small composition range out of the whole represented by all the analysed tiles.

The 'Wether Cote' group seems very satisfactory: it contains all but one of the Wether Cote tiles including the single examples of the non-mosaic PG12 and 14 tiles analysed from Wether Cote, as well as many of the tiles from Rievaulx and all the tiles from Helmsley. This group as a whole does seem to represent the products of the Wether Cote tile kiln, although the composition range of the actual tiles analysed from Wether Cote is smaller than the wider range for the 'Wether Cote' grouping as a whole.

Likewise the 'Meaux' group seems very satisfactory. Many of the tiles from Thornton, Newminster and Gisborough seem to be Meaux products. Cluster 10 contained both the Plain Mosaic and Inlaid tiles (PG12 and 15 respectively), indicating no chemical difference in the clay used to make these two different types of tile.

The non-mosaic 'PG12 and 14' group contains all the tiles of this type (plus some PG15), except for single examples elsewhere, including at Wether Cote. This indicates that, with the exception of Wether Cote and a small number of 'Meaux' group tiles, the production of Plain Mosaic and non-mosaic tiles at the sites were kept separate. This group of clusters also contains all of the tiles from Newbattle in Scotland and all but one of the tiles from St Mary's Abbey, York.

The 'Fountains Abbey/ York Minster' group holds all the analysed tiles from these two sites.

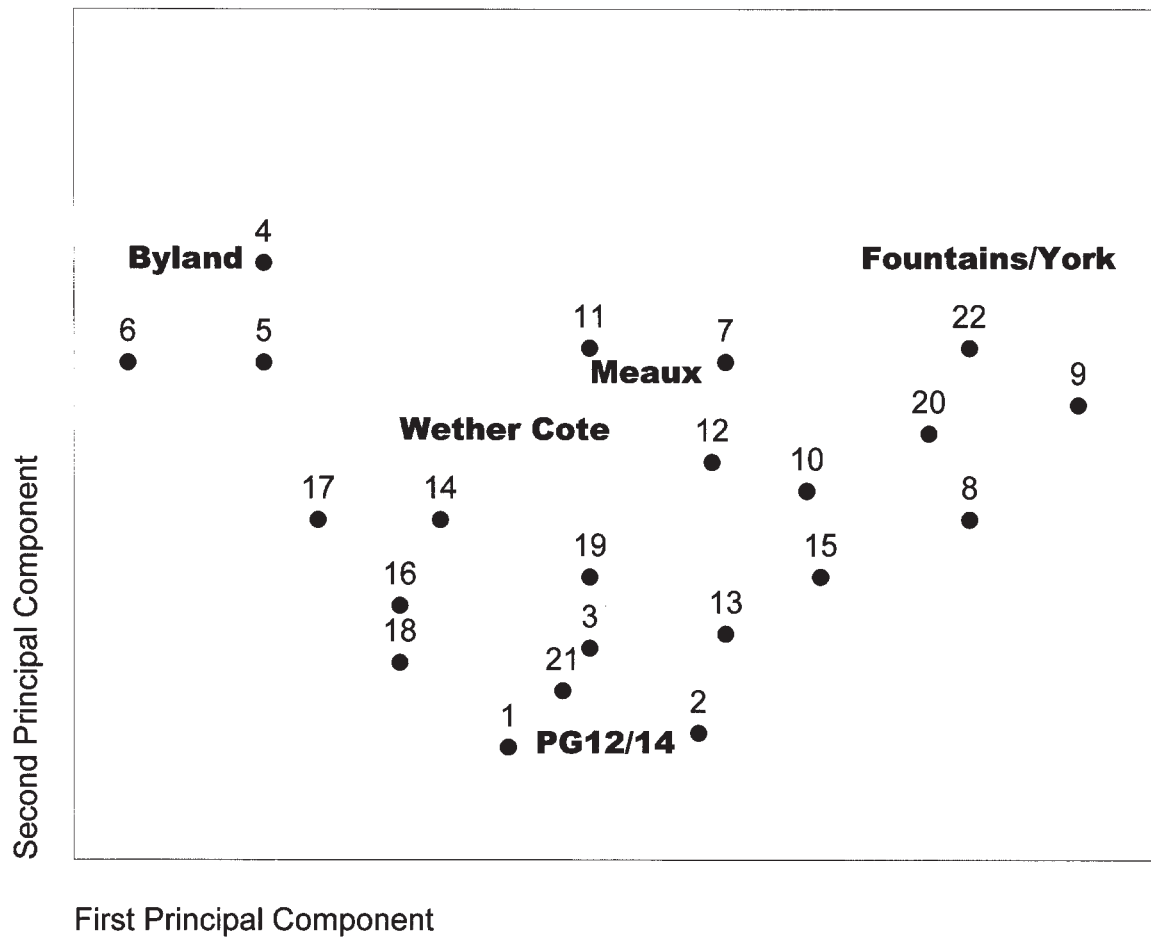


Fig A.2: Principal Components analysis plot of the centres of each of the clusters arising from cluster analysis. Cluster analysis sorts the samples into groups in which all the items have very similar analyses (and therefore were probably made from the same raw clay). This figure displays the chemical relationships between the clusters, and allows these to be associated into groups of clusters, as listed in Table A.2

Sawley tiles are distinctly different in composition to the rest of the tiles. They therefore form no further part in the discussion of the results except to note that they indicate that tiles from a remote production site can be easily identified chemically using the ICP-AES technique.

Comparison of ICP-AES results with NAA data on Scottish ceramics

One of the Plain Mosaic tile groups analysed came from Scotland (Newbattle, East Lothian). Cluster analysis indicated that they were produced in Yorkshire, since they group with the non-mosaic tiles from Byland, Rievaulx and St Mary's Abbey, York. However, we were not able to analyse by ICP-AES any tiles definitely made in Scotland as a reference, although neutron activation analyses exist of Scottish medieval pottery from a number of sites in the Lowlands including Colstoun and Kelso in East Lothian, Bothwell near Glasgow and Throsk in Stirlingshire (McCarthy and Brooks 1988, 216, 218, 379). The neutron activation analyses were carried out at the National Museum of Scotland by

Inscker and Tate (1991) who have shown that the pottery from all the sites could be distinguished from each other by NAA, except Colstoun whose pottery was coarser in fabric and had a more variable composition. The analytical data from that project were made available to us in the form of element concentrations scaled to 5.00% iron to remove the effect of varying amounts of diluting temper such as quartz. Seven elements in common were reliably measured by both projects (Co, Na, Mn, Cr, La, Sc and Fe) although iron had to be discarded because of the scaling, and the analyses on the Scottish pottery were combined with all the ICP-AES results (also standardised to 5.00% iron for this test). No inter-laboratory adjustment factors for analytical differences were used since it was considered that the Scottish and Yorkshire local pottery compositions would be sufficiently different, given their distance apart, that minor analytical differences would not be significant. Principal components analysis was used to examine the relationship between the two sets of results and a major inter-regional composition difference was apparent. All the Scottish pottery groups were clearly separated on the first principal component from the

Table A.3: Cluster analysis on ICP data: list of the membership of each cluster

<i>Record</i>	<i>Tile no.</i>	<i>Type</i>	<i>Site</i>	<i>Record</i>	<i>Tile no.</i>	<i>Type</i>	<i>Site</i>
<i>'PG12 and PG14' group of clusters</i>				cluster 22			
cluster 1				143	1122	15	York Minster
1	890	14	Byland	144	1124	15	York Minster
3	896	12	Byland	145	1125	15	York Minster
4	901	12	Byland	146	1126	15	York Minster
5	902	12	Byland	147	1127	15	York Minster
6	903	12	Byland	148	1130	15	York Minster
7	932	15	Byland	150	1132	15	York Minster
87	57	12	Rievaulx	151	1133	15	York Minster
89	447	14	Rievaulx	<i>'Byland' group of clusters</i>			
90	529	12	Rievaulx	cluster 4			
91	583	12	Rievaulx	9	951	15	Byland
97	1009	15	Rievaulx	cluster 5			
138	852	12	Whitby	10	952	15	Byland
139	853	12	Whitby	11	953	15	Byland
cluster 2				12	954	15	Byland
2	891	14	Byland	13	955	15	Byland
66	1017	15	Newbattle	15	957	15	Byland
67	1019	15	Newbattle	17	959	15	Byland
68	1020	15	Newbattle	18	975	15	Byland
69	1021	15	Newbattle	20	977	15	Byland
70	1023	15	Newbattle	21	978	15	Byland
71	1024	15	Newbattle	cluster 6			
72	1025	15	Newbattle	14	956	15	Byland
73	1026	15	Newbattle	16	958	15	Byland
74	1027	15	Newbattle	19	976	15	Byland
75	1028	15	Newbattle	<i>'Wether Cote' group of clusters</i>			
137	851	12	Whitby	cluster 14			
cluster 3				49	1100	15	Helmsley
8	950	15	Byland	50	1101	15	Helmsley
114	1054	12	St Mary's Abbey, York	51	1102	15	Helmsley
115	1055	14	St Mary's Abbey, York	52	1103	15	Helmsley
116	1056	14	St Mary's Abbey, York	53	1104	15	Helmsley
118	1058	14	St Mary's Abbey, York	54	1105	15	Helmsley
119	1060	12	St Mary's Abbey, York	142	865	14	Whitby
<i>'Fountains/York' group of clusters</i>				cluster 17			
cluster 8				92	676	14	Rievaulx
23	943	15	Fountains	93	991	15	Rievaulx
24	944	15	Fountains	94	992	15	Rievaulx
28	948	15	Fountains	99	1011	15	Rievaulx
29	995	15	Fountains	103	1015	15	Rievaulx
31	997	15	Fountains	130	929	12	Wether Cote
32	998	15	Fountains	131	930	15	Wether Cote
33	999	15	Fountains	132	931	15	Wether Cote
149	1131	15	York Minster	133	979	14	Wether Cote
153	1135	15	York Minster	134	980	15	Wether Cote
cluster 9				135	981	15	Wether Cote
25	945	15	Fountains	136	982	15	Wether Cote
26	946	15	Fountains	141	858	14	Whitby
27	947	15	Fountains	cluster 18			
30	996	15	Fountains	95	993	15	Rievaulx
124	1044	15	Thornton	96	994	15	Rievaulx
126	1046	15	Thornton	98	1010	15	Rievaulx
128	1048	15	Thornton	100	1012	15	Rievaulx
cluster 20				101	1013	15	Rievaulx
107	962	15	Sawley	102	1014	15	Rievaulx
108	963	15	Sawley	cluster 19			
111	966	15	Sawley	104	1016	15	Rievaulx
113	968	15	Sawley	140	855	14	Whitby

Table A.3: (cont'd)

<i>Record</i>	<i>Tile no.</i>	<i>Type</i>	<i>Site</i>	<i>Record</i>	<i>Tile no.</i>	<i>Type</i>	<i>Site</i>
<i>'Meaux' group of clusters</i>				cluster 12 (cont'd)			
cluster 10				64	1069	15	Meaux
34	715	12	Gisborough	65	1069	15	Meaux
35	716	12	Gisborough	120	969	15	Thornton
36	717	12	Gisborough	121	970	15	Thornton
37	718	12	Gisborough	122	1042	15	Thornton
41	726	15	Gisborough	123	1043	15	Thornton
43	1036	15	Gisborough	125	1045	15	Thornton
48	1041	15	Gisborough	127	1047	15	Thornton
59	1064	15	Meaux	<i>Other clusters</i>			
cluster 11				cluster 7			
76	1070	15	Newminster	22	817	15	Fountains
77	1071	15	Newminster	79	1073	15	Newminster
78	1072	15	Newminster	83	1077	15	Newminster
80	1074	15	Newminster	cluster 13			
81	1075	15	Newminster	40	725	15	Gisborough
82	1076	15	Newminster	42	728	15	Gisborough
84	1078	15	Newminster	46	1039	15	Gisborough
85	1079	15	Newminster	cluster 15			
86	1080	15	Newminster	57	1061	15	Meaux
129	1049	15	Thornton	105	960	15	Sawley
cluster 12				106	961	15	Sawley
38	722	15	Gisborough	109	964	15	Sawley
39	724	15	Gisborough	110	965	15	Sawley
44	1037	15	Gisborough	112	967	15	Sawley
45	1038	15	Gisborough	cluster 16			
47	1040	15	Gisborough	88	375	14	Rievaulx
55	710	15	Meaux	cluster 21			
56	1060	15	Meaux	117	1057	14	St Mary's Abbey, York
58	1063	15	Meaux	152	1134	15	York Minster
60	1065	15	Meaux	<hr/>			
61	1066	15	Meaux	Key to Type			
62	1067	15	Meaux	12: Inlaid; 14: Usefleet; 15: Plain Mosaic			
63	1068	15	Meaux				

local Yorkshire (ICP-AES) samples; PC1 was positively correlated with Cr, La, and Sc and negatively with Mn, while Co and Na contributed mainly to PC2.

The Newbattle (ICP-AES) tiles were very distant from the Scottish NAA samples on the principal components plot but were mixed in with the local Yorkshire groups. We can therefore conclude that the Newbattle tiles show no affinities with the clay composition of some typical lowlands medieval Scottish pottery, including pottery made in East Lothian and Stirlingshire – both less than 50km from Newbattle.

Comparison of ICP-AES results with NAA data on local Hull ceramics

It was also of interest to compare the ICP-AES data with some NAA data obtained by the British Museum on eleven samples of medieval ceramics from Hull, only a few miles from Meaux, one of the two mosaic tile kilns included in the project. The local Hull ceramics consisted of medieval roof tiles, bricks and

'Humberware' oxidised pottery (McCarthy and Brooks 1988, 242). This had been analysed as part of the NAA project on medieval North Midlands decorated floor tiles, to contrast with decorated floor tiles found in Hull but which are thought to be products of the Nottingham tile industry (Leese *et al.* 1986).

In this case there were six elements in common (the seven used for the Scottish/Yorkshire comparison but omitting Mn which was not measured at the British Museum by NAA) and a statistical test between the ICP-AES and Hull (NAA) data showed a close overlap between the Hull samples and a number of the Meaux clusters (clusters 11, 12 and 15 in Table A.3). Here also allowance was not made for inter-technique standardisation factors, but these are not expected to be very large, so the similarity between the Hull tiles analysed by NAA and the Meaux tiles does give further confirmation of the local composition of the Meaux tiles. The number of elements used for both these tests is much less than that used for the tests on the ICP-AES data alone, but the general trends are nevertheless clear.

Conclusions

The products of the two known tile kilns at Wether Cote and Meaux have been identified by chemical analysis of tiles found at a number of sites in apparently separate zones of contact. However, the overall spread in composition of the mosaic tiles is much wider than that of known Meaux and Wether Cote products. This suggests either that the composition range of products of the two kilns was much wider than the tiles selected for analysis or, more likely, that mosaic tiles were made at other places which the analytical evidence implies were probably in the same general region. The finding of relatively large numbers of small groups of tiles with the same composition suggests that some of these are individual batches from one kiln, but others represent products of kilns other than Meaux and Wether Cote. Byland is one strong possibility from

the chemical results. Close inspection of the data shows that many of these groups can be associated into a small number of 'area' compositions. The tiles found at Newbattle in Scotland do not match the composition of some typical Lowland Scottish medieval pottery, but do match the composition of local Yorkshire tiles, indicating transport of tiles to Scotland. The mosaic and inlaid types of tile had different body compositions at each site (except the 'Meaux' group), suggesting that production was not simultaneous. The ICP-AES technique proved itself in this project entirely suitable as a ceramic provenance technique; inter-comparisons with neutron activation databases are possible, although the limited number of common elements renders conclusions less secure than with either ICP-AES or NAA alone. Databases are currently being established using ICP-AES, as its applications to ceramics extend.

Appendix 2 Concordance lists

Group numbers

Text	Archive	Archive	Text
1	15	1	24
2	34	3	23
3	20	9/10/11	7
4	12	12	4
5	43	14	6
6	14	15	1
7	9/10/11	16	15
8	39	18	10
9	44	19	25
10	18	20	3
11	38	21	17
12	30	22	19
13	28	23	32
14	28a	24	30
15	16	25	16
16	25	26	29
17	21	27	34
18	45	28	13
19	22	28a	14
20	31	29	28
21	37	30	12
22	40	31	20
23	3	32	31
24	1	34	2
25	19	35	27
26	36	36	26
27	35	37	21
28	29	38	11
29	26	39	8
30	24	40	22
31	32	42	33
32	23	43	5
33	42	44	9
34	27	45	18

The design numbers below are those given in the text, together with the design numbers used in the database.

Design numbers

Text	Archive	Text	Archive	Text	Archive
Group 1, Plain Mosaic		Group 1, Plain Mosaic (cont'd)		Group 3	
1.1	159	1.15	136	3.1	141
1.2	161	1.16	118	3.2	352
1.3	186	1.17	180	3.3	353
R1.3	185	1.18	116	3.4	6
1.4	115	1.19	452	3.5	211b
1.5	158	1.20	448		
1.6	160	1.21	453	Group 4	
1.7a-f	114	1.22	450	4.1	28
1.8	42	1.23	449	4.2	27
1.9	179	1.24	451	4.3	138
1.10	411			4.4	26
1.11	187	Group 2		4.5	157
1.12	189	2.1	490	4.6	148
1.13	135	2.2	491	4.7	145
1.14	349			4.8	144

Text	Archive	Text	Archive	Text	Archive
Group 7 (cont'd)		Group 12		Group 23, Transpennine (cont'd)	
7.143	262	12.1	494	23.7	40
7.144	8	12.2	495	23.8	33
7.145	276	12.3	183	23.9	315
7.146	227	12.4	493	23.10	104
R7.146	226			23.11	36
7.147	227	Group 13		23.12	22
7.148	225	13.1	445	23.13	35a
7.149	290			23.14	105
7.150	266	Group 15 (Additions to Whitcomb designs)		23.15	21
7.151	183	15.1	355	23.16	35b
7.152	224	15.2	356	23.17	18
7.153	289	15.3	361	23.18	15
7.154	288	15.4	489	23.19	304
7.155	292	15.5	474	23.20	322
7.156	260	15.6	400	23.21	16
7.157	274			23.22	317
7.158	12	Group 16		23.23	321
R7.158	503	16.1	463	23.24	17
7.159	344	16.2	465	23.25	319
7.160	285	16.3	464	23.26	10
7.161	222	16.4	468	23.27	106
7.162	223	16.5	467	23.28	4
7.163	286	16.6	466	23.29	330
7.164	43	16.7	469	23.30	37
7.165	261	16.8	470	23.31	318
7.166	221	16.9	401	23.32	19
7.167	50	16.10	402	23.33	335
R7.167	74			23.34	25
7.168	52	Group 17		23.35	5
7.169	282	17.1	426	23.36	1a
7.170	281	17.2	425	23.37	320
7.171	53	17.3	483	23.38	323
7.172	49	17.4	427	23.39	30
R7.172	48	17.5	424	23.40	20
7.173	75	17.6	500	23.41	508
7.174	56			Group 24, Huby/Percy	
R7.174	69	Group 18		24.1	24
7.175	203	18.1	505	24.2	112
7.176	433	18.2	506	24.3	188
7.177	432	Group 19		24.4	336
7.178	492	19.1	12	24.5	109
7.179	60	19.2	435	24.6	184
		19.3	437	24.7	328
Group 8		19.4	434	24.8	108
8.1	416	19.5	436	24.9	396
8.2	502	Group 20		24.10	58
8.3	454	Numbers as Norton 1993a.		24.11	399
8.4	204	Group 21		24.12	334
		21.1	509	24.13	327
Group 9				24.14	414
9.1	382			24.15	386
9.2	412			24.16	387
				24.17	333
Group 10		Group 22		24.18	140
10.1	310	Fragments only, no longer extant.		24.19	332
10.2	311			24.20	331
10.3	313			24.21	388
10.4	309			24.22	329
10.5	308			24.23	409
10.6	397			24.24	410
10.7	312			24.25	413
10.8	232			24.26	38
10.9	231			24.27	41
10.10	303				
		Group 23, Transpennine			
		23.1	324		
		23.2	384		
		23.3	385		
		23.4	316		
		23.5	34		
		23.6	419		

Text	Archive	Text	Archive	Text	Archive
403	437	420	381	437	336
404	415	421	382	438	334
405	413	422	412	439	333
406	487	423	482	440	331
407	480	424	407	441	338
408	479	425	402	442	330
409	474	426	460	443	343
410	475	427	306b	444	345
411	465	428	426	445	337
412	369	429	398	446	329
413	481	430	457	447	335
414	414	431	420	448	332
415	484	432	408	449	451
416	448	433	422	450	445
417	485	434	419	451	339
418	483	435	456	452	347
419	477	436	476	453	425

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Abbreviations

BAR	British Archaeological Reports
CBA	Council for British Archaeology
DoE	Department of the Environment (now English Heritage)
EH	English Heritage
HMSO	Her Majesty's Stationery Office
RCHME	Royal Commission on the Historical Monuments of England
NYCRO	North Yorkshire County Records Office
YPS	Yorkshire Philosophical Society

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