# The Church of St. Giusta in Bazzano (L'Aquila). Documentation and Survey

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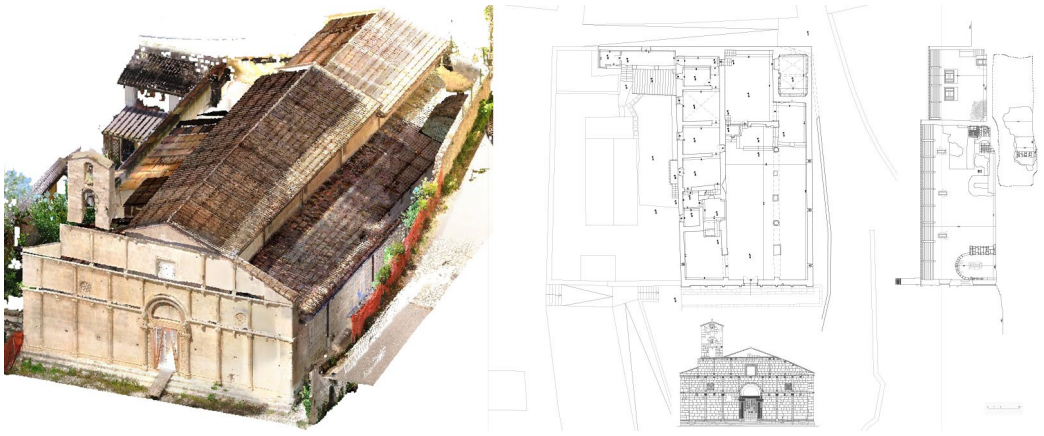
*Abstract*

The contribution presents a study of the church of St. Giusta in Bazzano, near L'Aquila, conducted on the basis of an architectural survey.
The church, which stands on the site of the catacomb where tradition has it that they were martyred in the 3rd century AD. St. Giusta and his companions, is characterized by important processes of modification and stratification. The layout has two naves, the central one and the one on the right, the latter rebuilt in the 1920s following the collapse of the embankment flanking the building. The left aisle, on the other hand, has been recast in the church's appurtenant spaces. The current configuration is the result of a 1911-12 restoration that eliminated the building's Baroque facies.
Through the digital survey with laser scanner and the relative two–dimensional representation, the conformation of the architectural organism was analysed and documented, highlighting its historical, spatial and architectural features.

*Keywords*
Architectural survey, documentation, architectural heritage, S. Giusta in Bazzano (AQ).



Point cloud and representation of the church of St. Giusta in Bazzano (AQ).



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## Introduction

The church of St. Giusta stands in the centre of the village of Bazzano, near L'Aquila. Characterised by profound processes of modification and stratification, the building is of great historical–architectural interest, with particular reference to Abruzzo's medieval architecture. Particularly noteworthy are the façade with peculiar formal characteristics (1238), the crypt and the upper room (12th century) (figs. 1, 2). The surveys in the literature can be attributed to the first decades of the 20th century, as can the main bibliographical references in the field of architecture [Biordi 1921; Gavini 1980; Biolchi 1930] with some later contributions [Moretti 1970; Murri 1986; Antonini 1997].
As part of the research activities of the Drawing group of the Department of Civil, Building–Architecture and Environmental Engineering of the University of L'Aquila, it was decided to carry out a campaign of laser scans, with subsequent graphic reconstructions, to document the monument.

## The architectonic complex

The church has an articulated system, referable overall to the 13th century, the result of complex stratifications, including not least the restoration interventions of the first half of the 20th century [Colaiuda 2020-2021].
The numerous elements of ancient and late ancient reuse – similar to what happens in numerous religious buildings in the area, such as the nearby St. Giustino in Paganica and St. Massimo in Forcone – suggest the reuse of remains possibly from the Vestino site of Furconium and the pos-

Fig. 1. The church of St. Giusta in Bazzano, near L'Aquila.

Fig. 2. The central nave of the church of St. Giusta in Bazzano.

sible presence of a building attributable to the 9th century, of which there is no trace [Gavini 1980]. The church stands on the site of the catacomb where tradition has it that St. Giusta and his companions were martyred in the 3rd century A.D. Covered with a trussed roof, the church currently has two naves – the central one and the right one – with the left nave recast in the relevant spaces. The right aisle itself is the result of a reconstruction carried out in the 1920s following the collapse of the upper embankment. It had a Baroque configuration, eliminated during the 1911-12 restoration campaign [Pezzi 2005].
The church, whose layout dates back to the 13th century, has six bays, the last of which is raised on steps to form the presbytery. Here the end wall separates the hall from a large room behind it, accessible from the nave, which, with a drop in height, continues to the rear. At the back, the organism incorporates a two–bay space, covered with cross vaults, with architectural and construction characteristics similar to those of the crypt. From the presbytery wall, a tunnel descends to the crypt, referable to the 11th-12th century, consisting of a rectangular room with four bays, with cross vaults, oriented in the opposite direction to the church. The last two bays open, on the left side, to enter the catacomb (figs. 3, 4).
Of particular interest is the church façade, dated 1238, marked by cornices and small columns leaning against the wall plane to form a high relief design, with a peculiar plastic effect, which finds a unique reference in the apse of the church of Str. Maria Porclaneta Rosciolo dei Marsi [Trizio 2017].

Fig. 3. Three-dimensional views of the point cloud.

Fig. 4. Three-dimensional sections of the point cloud showing the spatial articulation of the architectural complex.

## The architectural survey

The church of St. Giusta was the subject of a digital survey conducted with the Faro Focus S70 phase-difference laser scanner, designed to work in a distance range of 0.6 m to approximately 70 m [Gaiani 2012; Bertocci S. 2017].
The survey project, preparatory to laser acquisition, took into account the architectural and spatial characteristics of the object to be surveyed, in order to optimise the scanning process, as well as the processing and management of the point cloud for the creation of the restitutive model [Bianchini 2014].
In particular, with the aim of obtaining a homogenous final point cloud, in which the shadow zones were reduced to a minimum without, however, lengthening the scanning time unnecessarily and making the cloud unnecessarily heavy, a total of 40 scans were carried out, with different settings according to individual requirements. The instrumental resolution set for the scans varied according to the distance of the elements to be detected and their characteristics. For areas of greater interest or where distances were such that a smaller azimuth and zenith angle increment was required, such as the interior of the church and the façade, a resolution of 1/4 was adopted, corresponding to a distance between points of 6.1 mm at 10 m from the instrument. For the upper part of the side elevation, including part of the aisle and hall roofs visible due to the higher elevation of the road flanking the church, a resolution of ¼ and, for scanning with better visibility, ½ was used (equal to a distance between points of 3.1 mm at 10 m). The basement part of the side facade, on the other hand, due to its smaller size, was scanned at a resolution of 1/5, i.e., 7.7 mm at 10 m. This same resolution was also adopted for the crypt, which is decidedly smaller in size, and for the spaces pertaining to the church.
The laser scanner, equipped with an internal HDR camera, made it possible to easily associate the metric data of the points with the RGB colour data. The High Dynamic Range (HDR) mode, in particular, was useful for the interior of the church, characterised by the strong contrast between the dimness of the environment and the bright light coming from the windows and the door. In these spaces, therefore, the images for the creation of the spherical

panoramas necessary for the rendering of the cloud were taken with three exposures each, so as to ensure a good colour rendition also in consideration of the presence of paintings on the walls, concentrated mainly in the presbytery area (fig. 5).
The processing and registration of the scans were carried out within the Faro Scene software. Specifically, the merging of the individual scans took place through automatic registration procedures, facilitated by having positioned spherical targets during the scanning phase.
Once the overall point cloud was obtained, we proceeded to the analysis of the church by passing section planes, horizontal and vertical, at the most significant points, thus arriving at the two–dimensional restitutive model of the Church of St. Giusta (fig. 6) [De Luca, Russo 2021].

## The façade

The façade, engraved with the date 1238, is divided into three orders and these, in turn, are divided into vertical bands by semi–columns set against the masonry (fig. 7). These divide the first and second levels into seven vertical bays, with the central one occupied by the portal. At the first level the columns are octagonal, set on bases extruded from the façade base; at the second level they have a circular section. On both the first and second levels, small shelves with human and zoomorphic figures mark the intercolumns. On the third level, the small columns, with a circular section, are not aligned with those below, but are placed at the centreline; the side half–bays house two half–gables, with the masonry plane projecting from the bottom of the façade. However, if on the left side the roof line continues up to the centre line of the church – according to the trussed roof of the hall – on the right it is interrupted at the first half span. The top of the facade ends rising above the third band with the ridge of the gabled roof and, on the right, with a small bell gable. There are many irregular elements of the façade, such as the non–exact symmetry of the front, the portal not on axis, the different width of the vertical fields, the different width of

Fig. 5. Internal views of the point cloud: the central nave and the crypt from which to access the catacomb.

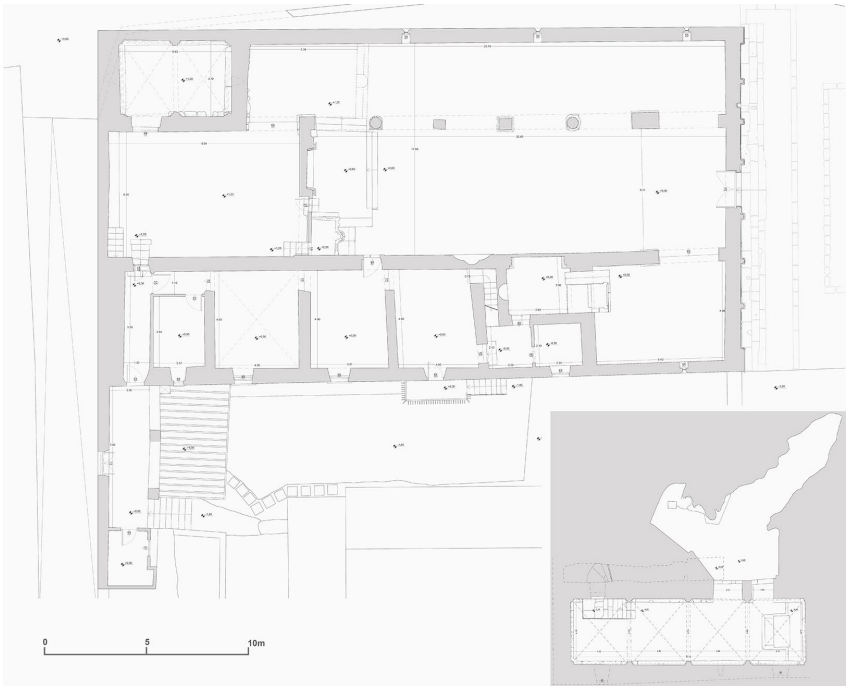


Fig. 6. Restitutive graphic model: plan of the church with its appurtenances and plan of the crypt with the catacombs.

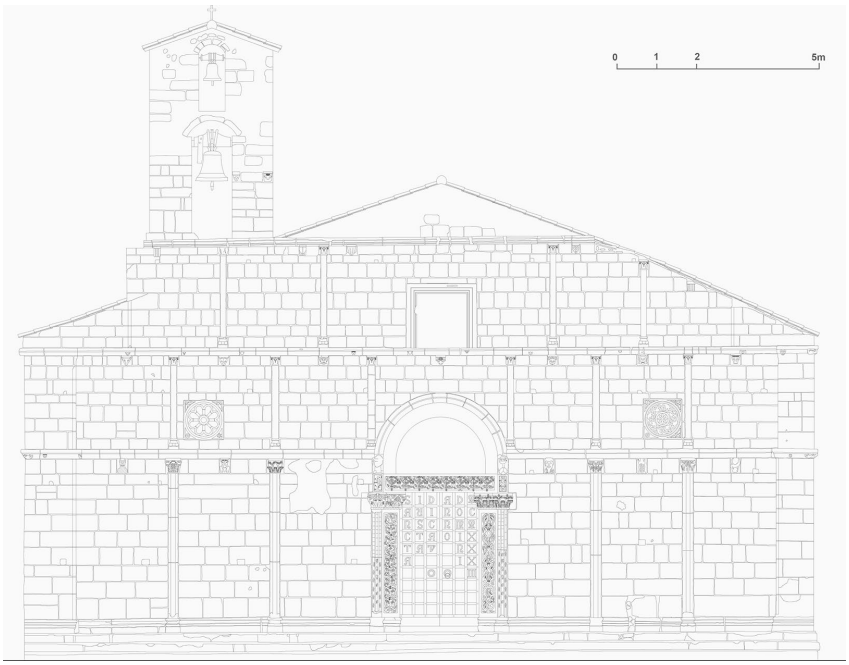


Fig. 7. The façade of St. Giusta, divided into three orders which, in turn, are divided into vertical bands by semi–columns set against the masonry.

the cornerstones. The construction technology also appears non–homogenous, especially on the third level. Moreover, it is uncertain whether the same restoration work of the 1920s, carried out by the *Genio Civile* with traditional techniques, may have played a part in the overall design [Miarelli 1979].

A uniform overall layout is evident, where the different widths of the bays may result from the need to compensate for the irregularities of a strongly stratified organism. The question of how the facade could be terminated remains open. According to Moretti, on the basis of the two–lateral semi–tympanums, the termination would have been gabled, following Tuscan and Umbrian influences [Moretti 1971]. This hypothesis appears interesting, but the irregularities of the third level suggest further investigation (variable height of the columns, presence of reused elements of the façade in the later masonry of the bell tower).

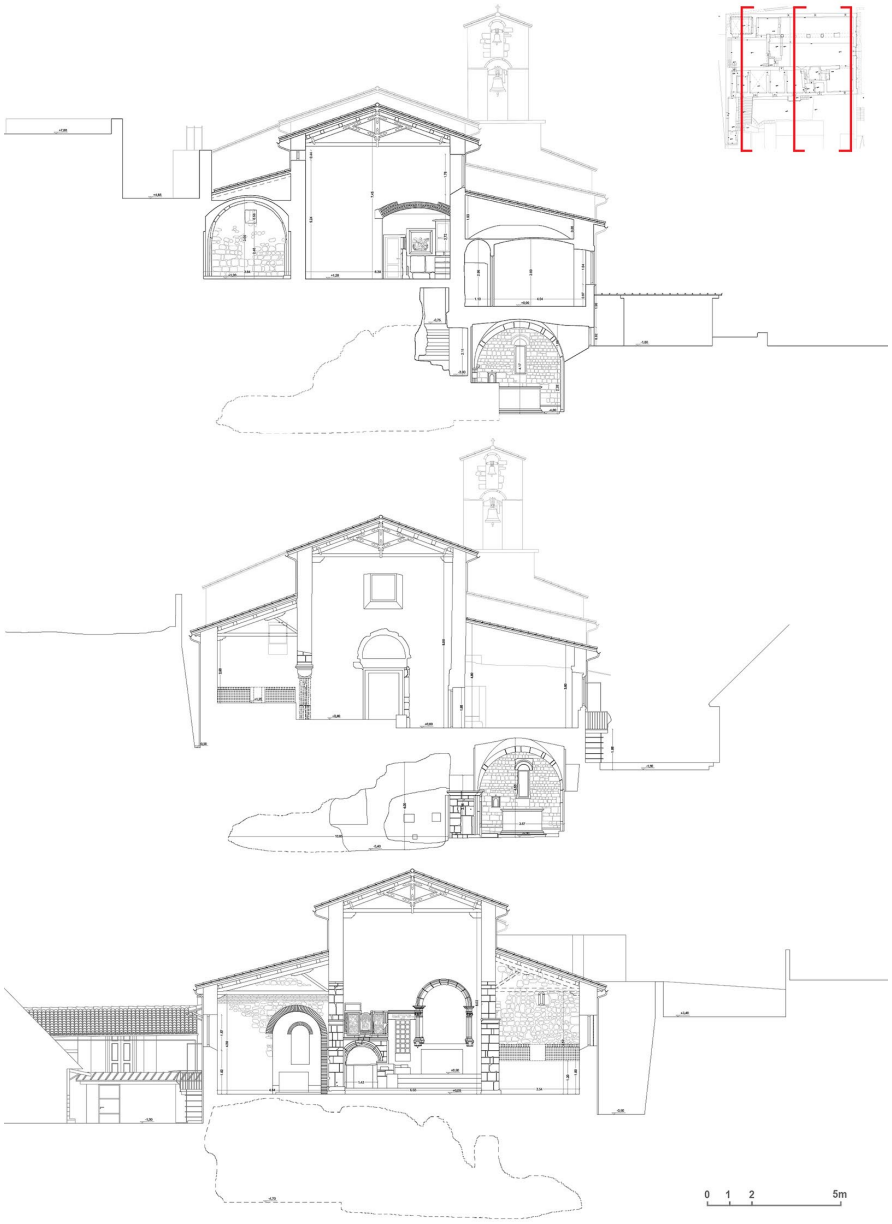


Fig. 8. Cross sections of the church.

## The orators

The organism incorporates two rooms that are similar in terms of their architectural characteristics, whose features recall recurring themes in Abruzzo crypts, such as the perimeter bench and the scanning of the walls with blind arches [Cecchelli Trinci 1980]. The first room has two bays and is located at the end of the right aisle, in the rear area; the second has four bays, forming a crypt from which to access the catacomb (fig. 8). The bays are defined by multi–cornered pilasters without capitals, supporting stone cross vaults. These are the stylistic features of what Gavini called the 'Benedictine hall', characterised by polygonal pilasters and half pilasters, multiple arches and blind arches on the perimeter walls [1]. These elements are in common with the oldest crypts in Abruzzo: St. Massimo in Penne (11th century) with central pillars articulated on the sides by half–columns – whose point of contact is mediated by the line of the ribs of the crosses descending to the ground – and with arches present on the side walls; St. Giovanni in Venere, with half–pillars and half–columns on the sides accompanied on the ground by the thread of the vaults and barely hinted at blind

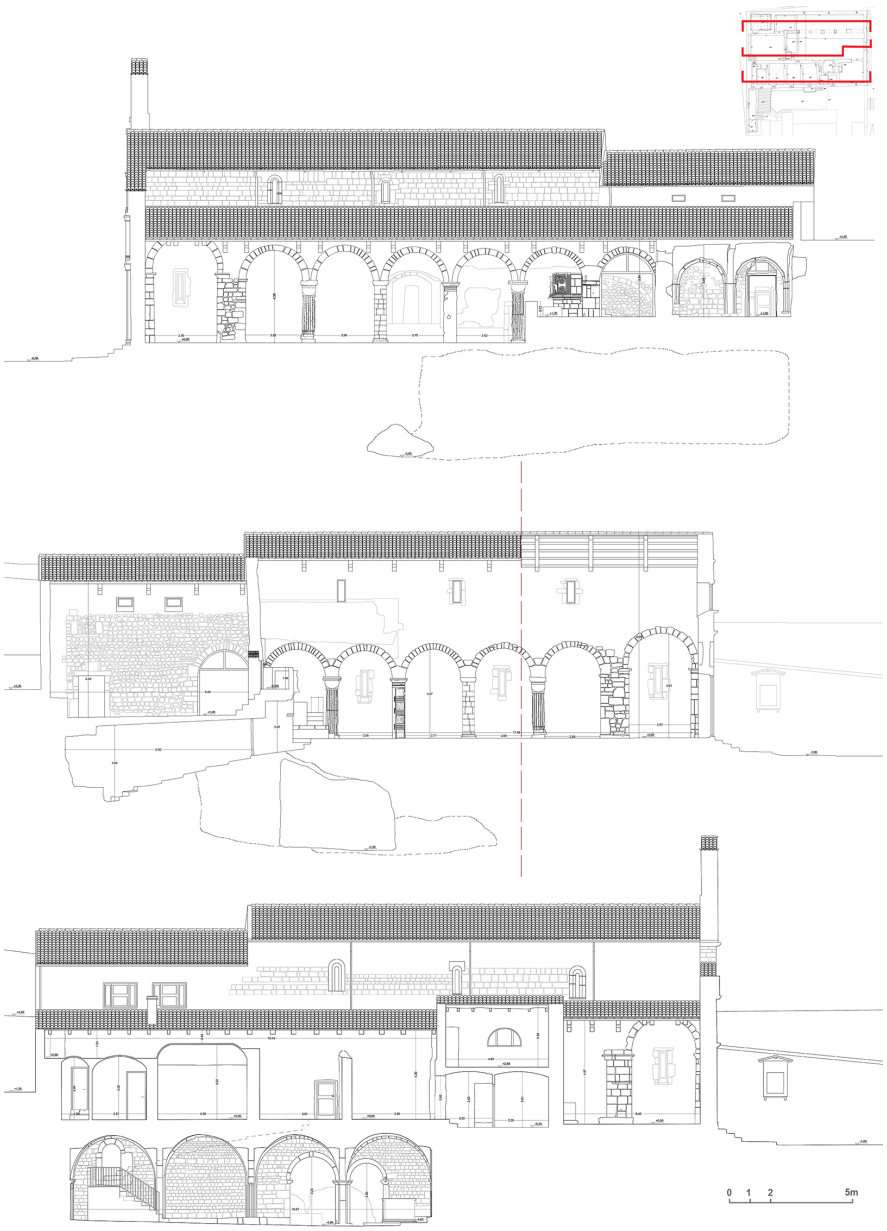


Fig. 9. Longitudinal sections of the church.

arches; St. Panfilo di Sulmona (1075) with half-columns that also mark the apse wall. With reference to the churches in the surrounding area, the design of the blind arches and perimeter pilasters of the oratories of St. Giusta is similar to that of the crypts of St. Giustino in Paganica (12th-13th cent.), St. Massino di Forcona (12th-13th cent.), St. Eusanio Forconese (12th cent.), St. Maria Assunta di Assergi (1150), St. Giovanni ad Insulam (12th-13th cent.).

## Conclusion

The laser scans made it possible to make a complete three–dimensional cast of the spaces of the architectural complex so as to be able to document their conformation, the relative position of the rooms, the irregularities of the architectural components and walls (thicknesses, alignments, etc.), the architectural features (fig. 9). Appropriate sections of the point clouds were rendered using traditional two–dimensional representations such as plans, elevations and sections. The latter are constituted as critical interpretative drawings, which

through a discrete section of significant elements favour the visualisation of the monument's historical, spatial and architectural features. Specifically, the restitutions are offered as new documents for the study of the church.

### Notes

[1] "The schema I present of a typical Benedictine hall clearly represents what rules this building system adhered to. The bays are mostly equal from axis to axis, but the spans of the crossings vary according to the shape of the piers. In the case where the support is a pier on which the maximum load is concentrated, its shape results from the vertical fall of all the roof lines. Thus we have that in Sant'Eusanio Forconese, where the arches were triple, there are isolated piers with sixteen corners, while in the corresponding piers close to the walls, four corners serve for the triple arch and two for the blind arches. But if the support is a column or an octagonal prism, all the curves of the roof are forced to cluster around the sides of the abacus or that large stone above the capital, reducing the pedestal to a kind of chalice or fantastic basket. And this grouping is achieved by shifting the centres of the arcs and counter–arcs in such a way as to maintain the connections. Arch, counter–arch and vault are no longer concentric curves; the front of the arcades takes on that falcate appearance that we have repeatedly noted; but all this does not detract from the fact that great harmony reigns in the hall as a whole and that the dissymmetries are masked by the perspective effects, by the regularity maintained by the cross vaults and in the blind arches of the walls." [Gavini 1927-28, I, pp. 388-389].

### References


Antonini O. (1997). Approfondimenti critici e rivisitazioni cronologiche nell'architettura in Abruzzo: i casi di S. Massimo di Forcona e di S. Giusta a Bazzano. In *Bullettino della Deputazione abruzzese di storia patria*, 87, pp. 173-236.

Bertocci S., Bini M. (Eds.) (2017). *DISEGNARECON*. The Survey for the Restoration of Historical Heritage, Vol. 10, No. 18.

Bianchini C. (2014). Survey, Modeling, Interpretation as multidisciplinary components of a Knowledge System. In *SCIRES-IT*, Vol. 4, issue 1, pp. 15-24.

Biolchi R. (1930). La basilica di S. Giusta di Bazzano. In *Bollettino d'Arte*, a. X, No. III, pp.97-119.

Biordi R. (1921). Un monumento romanico in Abruzzo: la basilica di S.ta Giusta in Bazzano. In *Abruzzo*, a.II, No.3, pp. 79-86.

Cecchelli Trinci M.M. (1980). Cripte abruzzesi e molisane (IX–XIII secolo). In *L'Architettura in Abruzzo e nel Molise dall'antichità alla fine del secolo XVIII, atti del XIX congresso di storia dell'architettura*, L'Aquila, 15-21 settembre 1975, pp. 39-56. L'Aquila: Ferri.

Colaiuda C. (2020-2021). *Rilievo architettonico e Mitigazione della Vulnerabilità Sismica della Chiesa di Santa Giusta a Bazzano* (AQ). Bachelor's in Ingegneria Edile-Architettura UE, Tutor Prof. S. Brusaporci, Cotutor Prof. A. Salvatori. University of L'Aquila.

De Luca L., Russo M. (eds.) (2021). *DISEGNARECON. Semantic-driven analysis and classification in architectural heritage,* vol. 14, n. 26.

Gaiani M. (2012). Per una revisione critica della teoria del rilievo dopo l'avvento dei mezzi digitali. In L. Carlevaris, M. Filippa (Eds.). *Elogio della teoria. Identità delle discipline del disegno e del rilievo*, pp. 375-382. Rome: Gangemi.

Gavini I.C. (1980). *Storia dell'architettura in Abruzzo*, Vol. I-II-III. Pescara: Costantini.

Miarelli Mariani G. (1979). *Monumenti nel tempo: per una storia del restauro in Abruzzo e nel Molise.* Roma: Carucci.

Moretti M. (1971). *Architettura medievale in Abruzzo: (dal VI al XVI secolo)*. Rome: De Luca.

Murri F. (1986). *Santa Giusta e le sue chiese all'Aquila e Bazzano.* L'Aquila: Japadre.

Pezzi A.G. (2005). *Tutela e restauro in Abruzzo. Dall'unità alla seconda guerra mondiale (1860-1940)*. Roma: Gangemi.

Trizio I. (2017). *La chiesa di Santa Maria in Valle Porclaneta*. Firenze: Nardini.



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