Nataša Pelja-Tabori

CODELESS SARAJEVO

Effects of the absence of a building code on building permit procedure in Sarajevo Canton

TU WIEN Academic Press

Nataša Pelja-Tabori
CODELESS SARAJEVO

Nataša Pelja-Tabori

CODELESS SARAJEVO

Effects of the absence of a building code on building permit procedure in Sarajevo Canton

TU WIEN Academic Press

Cite as:

Pelja-Tabori, N. (2024). *Codeless Sarajevo: Effects of the absence of a building code on building permit procedure in Sarajevo Canton.* TU Wien Academic Press. https://doi.org/10.34727/2024/isbn.978-3-85448-057-0

TU Wien Academic Press 2024

c/o TU Wien Bibliothek
TU Wien
Resselgasse 4, 1040 Wien
academicpress@tuwien.ac.at
www.tuwien.at/academicpress

ISBN (print): 978-3-85448-056-3
ISBN (online): 978-3-85448-057-0

Available online: https://doi.org/10.34727/2024/isbn.978-3-85448-057-0

Media proprietor: TU Wien, Karlsplatz 13, 1040 Wien
Publisher: TU Wien Academic Press
Author (responsible for the content): Nataša Pelja-Tabori
Production: Facultas Verlags- und Buchhandels AG

This publication is a revision of the dissertation *Justification of Reintroducing the Building Code for Sarajevo Canton*, defended by Nataša Pelja-Tabori at TU Wien on July 21, 2021. This dissertation was published in the repository of TU Wien: https://doi.org/10.34726/hss.2021.70954.

Preface

In the very last years of the previous century, as an Erasmus student from Israel, I read about the Paris building code in the library of the National School of Architecture of Paris-la-Villette.

A couple of years after this event, as an architect working in the Institute for Canton Planning in Sarajevo, I started thinking again about the Paris building code because I discovered that the Sarajevo spatial planning system has functioned without a building code for almost a century. That is how this research began. Few urban planners and professionals in Sarajevo have written about the spatial planning system in former Yugoslavia and Bosnia-Herzegovina, but none focused on the building code with the aim to reintroduce it.

I thought that it may be useful to make an analysis of the spatial planning and coding system in Sarajevo in a chronological order, comparing it to the relevant continental European examples to objectively determine whether it would be advisable to introduce a building code to Sarajevo spatial planning legislation.

This research will be the first in the history of spatial planning in Sarajevo in the English language, which will provide a systematic and holistic analysis of various political contexts of the local spatial planning and coding system. It aims to arrive at the recommendations and the model for the next building order for the Sarajevo Canton, appropriated for the wider continental European context it appertains to.

Acknowledgements

I would like to express my deep gratitude to Professor Dr. Thomas Dillinger, my research supervisor, for his patient guidance, enthusiastic encouragement, and useful critiques of this research work, together with Professor Dr. Arthur Kanonier.

I would like to thank my friend and guiding star Professor Dr. Jasmina Osmanković, without whom I would not have the courage to start this adventure.

I thank my brother for his kindness and support.

I would also like to thank the management and my colleagues at the Institute for Canton Planning, for supporting my research work from the start.

I thank my husband and children for their support and patience throughout my study.

Finally, I am deeply thankful to have had the opportunity to learn from my teachers and professors in Sarajevo, Jerusalem, Paris, and Rome, who prepared me for life and professional challenges and engraved scientific curiosity and doubtfulness forever in my worldview.

The analysis of the Swiss case study is based on the researcher's short-term scientific study in Switzerland at the host Institut für Raumentwicklung at Rapperswil (HSR) and visits to the Swiss Federal Institute of Technology in Zurich (ETH Zurich), Spatial Planning Department and Spatial Development and Urban Policy Department during November 2019. The sources were gathered from the respective libraries of these universities. The interviews were conducted with professors at the Spatial Planning Departments of the mentioned institutions, Professor Emeritus Thomas Matta, Prof. Dr. Joachim Schöffel, Professor Dr. Gunnar Heipp from HSR, Professor Dr. David Kaufman and Dr. Ana Perić Momčilović from ETH in November 2019.

The analysis of the Austrian case study is based on the PhD research study at the Vienna University of Technology from October 2018 until October 2019. The sources for this method were found in the library and courses attended at TU Wien with late Professor Emeritus Erhard Busek and Professor Dr. Andreas Faludi. The interviews were conducted with Ms. Andrea Wallner, Coordinator of CBC programmers at ÖROK, DI Walther Stöckl, CBC, and transnational planning on behalf of the City of Vienna until 2013, currently retired, my supervisor Professor Dr. Thomas Dillinger, Professor Dr. Arthur Kanonier, and kindness of my friend Aleksandar Dimitrić, TU Wien student, and architect in Vienna.

List of Contents

Preface ..... **v**

Acknowledgements ..... **vii**

List of Abbreviations ..... **xi**

List of Figures ..... **xv**

List of Tables ..... **xix**

PART I: Introduction **1**

1 Basic Facts on the Research **3**

1.1 Introductory Notes about the Topic 3

1.2 Past Review Studies about the Research Subject 4

1.3 Research Subject, Goals and Assignments, and Research Hypothetical Framework 6

1.4 Research Definitions 7

1.5 Research Methods 9

1.6 Scientific Justification and Expected Results 10

PART II: Historical Background **13**

2 Building Code History **15**

2.1 Relevant Continental European Building Codes for Sarajevo 16

2.2 Sarajevo Building Codes 25

2.3 Absence of a Building Code in Sarajevo after the Second World War 43

2.4 Attempts for Standardization 62

2.5 Summary 65

3 Building Permit Procedure in Contemporary Planning and Coding Systems **69**

3.1 Swiss Confederation Planning and Coding System 70

3.2 Republic of Austria Planning and Coding System 79

3.3 Republic of Slovenia 106

3.4 French Republic–Form-Based Coding or Morphological Zoning Coding Theory 106

3.5 Sarajevo Canton Planning System in the BiH Legislative Framework 111

3.6 Summary 148

PART III: Toward the New Building Code **151**

4 Evaluation of the Building Permit Procedure in the Sarajevo Canton **153**

4.1 Outcomes of the Comparative-Historical Method 153

4.2 Outcomes of the Empirical–Analytical Methodological Research 163
4.3 Outcomes of the Delphi Methodology 213
4.4 Summary 221
5 Proposed Model for Introducing the Building Code Document 225
5.1 Potential Scenarios for Introducing the New Sarajevo Canton Building Code 225
5.2 Scenario “A” 225
5.3 Scenario “B” – The Ideal Scenario 229
5.4 Elements of the Future Sarajevo Canton Building Code 238
5.5 Summary 250
PART IV: Conclusions 253
6 Conclusions and Research Recommendations 255
6.1 Conclusions and Research Recommendations 255
6.2 Research Contributions 257
6.3 Building Code Model Limitations and Future Research 258
Reference list 261

List of Abbreviations

Abs	Paragraph from Subregional Development Programs (Teilregionale Entwicklungsprogramme)
ABV	Building code/Ordinance (Allgemeine Bauverordnung)
ARE	Swiss Federal Office for Spatial Development
BD	Brčko District
BiH	Bosnia–Herzegovina
BP	building permit
BR	building régime regulation
BVV	Building Procedure Ordinance (Bauverfahrensverordnung)
DKM	Digital Cadastral Register
DORIS	Upper Austria Geographic Information System
EAFRD	European Agricultural Fund for Rural Development
EKZ	Shopping Centre Program (Einkaufszentrenprogramm)
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ESDP	European Spatial Development Perspective
ESF	European Social Fund
ESI	European Structural and Investment funds
FBiH	Federation of Bosnia–Herzegovina
FPRY	Federative People's Republic of Yugoslavia
GIS	Geographic Information System
GUP	General Urban Plan
IMG	International Management Group
ISOCARP	International Society of City and Regional Planners
JNA	Yugoslav People's Army
KAGIS	Carinthia Geographic Information System
k. u. k.	Imperial and Royal (Kaiserlich und Königlich)
LOSP	Spatial Planning Law

NUTS III	35 statistical units in Western Austria (NUTS-Nomenclature of territorial units for statistics of the official statistics of the European Union for Austria)
OECD	Organisation for Economic Co-operation and Development
OIB Richtlinien	Austrian Institute for Building Technology Guidelines
ÖROK	Austrian Conference on Spatial Planning
ÖREK	Austrian Spatial Development Concept
PBG	Planning and Construction Law (Planungs- und Baugesetz)
PRBiH	People's Republic Bosnia–Herzegovina
PRS	People's Republic Serbia
RBiH	Republic Bosnia–Herzegovina
RPG	Swiss Spatial Planning Law/Act (Raumplanungsgesetz)
RS	Republika Srpska
SAGIS	Salzburg Geographic Information System
SERDA	Sarajevo Economic Development Agency
SC	Sarajevo Canton
SFRY	Socialist Federal Republic of Yugoslavia
SMART	Specific, Measurable, Assignable, Realistic, and Time-related
STEP	Urban Development Plan (Stadtentwicklungsplan)
SWOT	Strengths Weaknesses Opportunities Threats analysis
TA 2020	Territorial Agenda 2020
TA 2030	Territorial Agenda 2030
TEN-T	Trans European Transport Network
TIRIS	Tyrol Geographic Information System
UN	United Nations
UNO	Methodology for determining standards and goals in the field of housing and environmental organization, Juginos, Belgrade 1974
VOGIS	Vorarlberg Geographic Information System
WBO	Viennese Building Code (Bauordnung für Wien)
WBTW	Vienna Building Technology Regulation (Wiener Bautechnikverordnung)

Zone U.A. City of Paris Land Use Plan Regulation. The centre-west of Paris, home to a large number of tertiary sector activities, including major company head offices and large corporations. These activities generally occupy buildings previously used for residential purposes.

Zone U.C. City of Paris Land Use Plan Regulation

Sector U. Ca The historic and archaeological center of Paris, characterized by the housing and typically Parisian shops.

Sector U. Cb The old village of Montmartre and its surroundings.

Sector U. Cc The central part of the district known as “de la Butte aux Cailles”.

Zone U.F. City of Paris Land Use Plan Regulation.
The area, well served by public transport with the highest density of office jobs and the highest land use in the capital.

Zone U.H. City of Paris Land Use Plan Regulation

Sector U. Ha Characterized by the predominance of housing and accompanying traditional commerce

Sector U. Hb Specifically designed for residential use.

Zone U.I. City of Paris Land Use Plan Regulation.
Predominantly industrial zone.

Zone U.L. City of Paris Land Use Plan Regulation.
The zone includes more than a hundred hamlets, villas, and housing estates.

Zone U.M. City of Paris Land Use Plan Regulation

U. sector Ma Mix of uses that covers most of the outlying districts of eastern Paris.

Sector U. Mb The mixed-use that covers most of the southern part of the districts 14 and 15.

Zone U.N. City of Paris Land Use Plan Regulation
The entire S.N.C.F. (Société nationale des des chemins de fer français - France´s national state-owned railway company) estate.

Zone U.O City of Paris Land Use Plan Regulation.
Covers those parts of Paris whose development has been undertaken under previous agreements with development or construction institutions.

Zone U.P. City of Paris Land Use Plan Regulation.
This zone, subdivided into three U.Pa, U.Pb and U.Pc, covers the public river domain (land, banks, quays, water bodies).

List of Figures

Figure 1 Research methodology framework 10

Figure 2 Sarajevo in 1879 26

Figure 3 Second Building Code for Sarajevo 1893 29

Figure 4 Regulation of the Miljacka River basin 31

Figure 5 Schematic representation of the building zone plan of Sarajevo, in 1879, according to the First and Second Building Codes for the State Capital Sarajevo 33

Figure 6 Sarajevo in the 1930s 37

Figure 7 Schematic representation of the building zone plan of Sarajevo in 1930 42

Figure 8 Spatial planning documentation in the period of the Socialist Federal Republic Yugoslavia 48

Figure 9 Sarajevo's general Land-use Plan (GUP), 1965 52

Figure 10 Urban territory and the boundaries of the city of Sarajevo in 1990 .. 59

Figure 11 City of Sarajevo Spatial Plan for the period 1986–2015 60

Figure 12 City of Sarajevo Land-use Plan for the period 1986–2015 61

Figure 13 State Structure of Switzerland 71

Figure 14 Federal spatial planning system – Spatial planning tools in Switzerland 73

Figure 15 Technical equipment as explained in the Annex with explanatory sketches for the measurement and calculation methods according to the PBG and ABV 75

Figure 16 Equipment as explained in the Annex with explanatory sketches for the measurement and calculation methods according to the PBG and ABV 75

Figure 17 Total building height as explained in the Annex with explanatory sketches for the measurement and calculation methods according to the PBG and ABV 76

Figure 18 European investment funds in Austria (2014–2020) 83

Figure 19 Relationship between planning instruments at various government planning levels 91

Figure 20 Zoning plan of the City of Paris's Règlement 108

Figure 21 Zoning plan of the City of Paris's Règlement, building distances, and insulation angles 109

Figure 22 Federation of BiH (dark blue) and Republika Srpska (light blue) with Brčko District (grey) 112

Figure 23 Ten cantons of the Federation of BiH 115
Figure 24 Canton Sarajevo with its nine municipalities. Present City of Sarajevo – four out of nine municipalities (red) and area of former City of Sarajevo – today East Sarajevo (outline border – dot line) 116
Figure 25 Spatial planning instrument hierarchy in Sarajevo Canton 130
Figure 26 Canton Sarajevo urban territory 131
Figure 27 Coverage of the Canton urban territory area with detailed spatial planning documentation 132
Figure 28 Frequency of the adoption of building codes (bc) during the history in Paris, Vienna, and Sarajevo 162
Figure 29 Schematic representation of the building permit procedure in the Sarajevo Canton 172
Figure 30 Spatial organization of the four building regimes' area 176
Figure 31 Sarajevo Canton Spatial Plan for the period 2003–2023 and its amendments 178
Figure 32 Sarajevo Canton Spatial Plan for the period 2003–2023 and its amendments 179
Figure 33 City of Sarajevo Land-use Plan for the period 1986–2015 180
Figure 34 Urban permit procedure analysis in Sarajevo Canton in the timeframe 2008–2020 189
Figure 35 Requests for supplementary urban permits in the total number of requests for urban permits in the Sarajevo Canton in the timeframe 2008–2020 190
Figure 36 Number of requests for the supplementary urban permit in the total number of requests for urban permits in the Sarajevo Canton in the timeframe 2008–2020 191
Figure 37 Urban permit procedure in the Sarajevo Canton in the timeframe 2008–2020 191
Figure 38 Building permit procedure analysis in the Sarajevo Canton in the timeframe 2008–2020 192
Figure 39 Requests for the supplementary building permit share in the total number of requests for building permits in the Sarajevo Canton in the timeframe 2008–2020 192
Figure 40 Number of requests for supplementary building permit in the total number of requests for building permits in the Sarajevo Canton in the timeframe 2008–2020 193
Figure 41 Detailed analysis of the requests for building permits in the timeframe 2008–2020 193

Figure 42 Detailed planning documentation analysis in the timeframe 1996–2020 195

Figure 43 Building permit procedure in Sarajevo Canton indicators in percentages..... 195

Figure 44 Building permit procedure in the Sarajevo Canton in the timeframe 2008–2020 196

Figure 45 Typologies and number of requests for supplementary urban permit and urban permits in the Sarajevo Canton in the period June–December 2008/June–December 2019 197

Figure 46 Representation of the diverse typologies in the total number of submitted requests for urban permits in the examined period June–December 2008 197

Figure 47 Representation of the diverse typologies in the total number of submitted requests for urban permits in the examined period June–December 2019..... 199

Figure 48 Number of requests for urban permits – 31,971 in the timeframe 2008–2020 on 15/07/2020 in the Sarajevo Canton and their spatial distribution 200

Figure 49 Number of requests for building permits – 10,649 in the timeframe 2008–2020 on 15/07/2020 in the Sarajevo Canton and their spatial distribution 201

Figure 50 Number of professional opinions – 18,150 issued in the period 2006–2019 on 15/07/2020 and their spatial distribution 202

Figure 51 Analysis of share of issued professional opinions in Sarajevo Canton in the timeframe 2006–2020..... 203

Figure 52 Decrease in issued professional opinions in Sarajevo Canton in the timeframe 2006–2020 203

Figure 53 Representation of the diverse typologies of the submitted requests for professional opinion in the examined period June–December 2008 and June–December 2020..... 204

Figure 54 Current spatial planning system instruments in Bosnia-Herzegovina – Scenario “A”..... 227

Figure 55 Current building permit procedure – Scenario “A” 228

Figure 56 Proposal for the reformed spatial planning system in Bosnia-Herzegovina – the Ideal Scenario..... 231

Figure 57 Ideal scenario for introducing the new building code – the single-act option..... 233

Figure 58 Ideal scenario for introducing the new building code – the alternative with two separate acts..... 234

Figure 59 Proposed model for the building permit procedure within the ideal scenario for introducing the new building code 235

Figure 60 Proposal for the building permit procedure linked with the catchment area of the future building code – the Ideal Scenario..... 236

Figure 61 Catchment area of the future Sarajevo Canton building code – the “Ideal Scenario” 238

Figure 62 Content of the future building code – the “Ideal Scenario” 240

Figure 63 Relationship between the main elements of the future cantonal land-use and regulatory plan..... 245

Figure 64 Location of Alifakovac, Municipality Stari Grad, and existing street sections with single houses framing the street section 246

Figure 65 Typo-morphological zoning analysis in nine Sarajevo Canton municipalities..... 247

List of Tables

Table 1 Comparison of the contents of the First Building Code of Sarajevo .. 34

Table 2 Comparative elements of the first Sarajevo building codes 34

Table 3 Content of the building code of 1936 38

Table 4 Elements of the building code of 1936 39

Table 5 Spatial Planning Legislation of the Federative People's Republic Yugoslavia in the period 1945–1965 44

Table 6 Legislation in the town planning of the Socialist Republic Bosnia-Herzegovina in the period 1965–1990 on the republic level 46

Table 7 Spatial planning legislative of the City of Sarajevo in the period 1957–1990 on the city level 50

Table 8 Content of the Construction Decision for Sarajevo County (1957) and the Spatial Planning Law (1974) 53

Table 9 Comparative elements of the Construction Decision for Sarajevo County (1957) and the Spatial Planning Law (1974) 54

Table 10 Basic facts on the spatial conditions of the Swiss Confederation ... 70

Table 11 Content of Zurich Building Ordinance 76

Table 12 Basic facts on the spatial conditions of the Republic of Austria 80

Table 13 Thematic objectives (TOs) 84

Table 14 Instruments of regional spatial planning in spatial planning laws in Austria 87

Table 15 Strategy concepts of federal provinces 89

Table 16 Regional Development Agencies of the federal provinces (Selection). 90

Table 17 Instruments of regional spatial planning in Austria 95

Table 18 Comparison of the content of the Viennese Building Code and Sarajevo Canton Spatial Planning Law 99

Table 19 Structure of Règlement 107

Table 20 Comparison of zoning codes and form-based code characteristics 110

Table 21 Content of the Dayton Peace Agreement 113

Table 22 Government levels in BiH 116

Table 23 Governmental pyramid on the territory of Sarajevo Canton and East Sarajevo 117

Table 24 Bosnia-Herzegovina in relation to EU Enlargement Step 117

Table 25 General data about Bosnia-Herzegovina 120

Table 26 Spatial planning legislation in Sarajevo Canton 122

Table 27 Content of the Sarajevo Canton Spatial Planning Law of 1999, 2005, and 2017 124

Table 28 Comparative elements of the Sarajevo Canton Spatial Planning Law of 1999, 2005, and 2017..... 126

Table 29 Analysis of the accuracy of the development spatial planning documentation..... 133

Table 30 Analysis of the detailed spatial planning documentation production in Sarajevo Canton in the years 1996–2017 136

Table 31 Content of the manual 146

Table 32 The Comparative-historical analysis in Sequence 1: Content of the building regulation for Paris in 1784..... 154

Table 33 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris/Vienna in 1829..... 155

Table 34 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris in 1859/Vienna in 1829..... 155

Table 35 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris/Vienna in 1868..... 155

Table 36 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris in 1884/Vienna in 1883/Sarajevo in 1880 156

Table 37 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris in 1902/Vienna in 1890/Sarajevo in 1893 157

Table 38 The Comparative-historical analysis in Sequence 1: Sociopolitical parameters for Paris in 1902/Vienna in 1890/Sarajevo in 1893..... 157

Table 39 Sequence 2: Content of the building code for Sarajevo in 1936 ... 158

Table 40 Sequence 2: Spatial planning legislation for Sarajevo in 1930s.... 158

Table 41 Sequence 3: Content of the construction decision and the spatial planning law 159

Table 42 Sequence 4: Spatial planning system characteristics in Sarajevo, Vienna and Zurich 160

Table 43 Shortcomings of a building permit procedure in the Sarajevo Canton..... 173

Table 44 Classification of requests for urban permits according to the number in 2008 198

Table 45 Classification of requests for urban permits according to the number in 2019 199

Table 46 Classification of requests for professional opinion according to the number in 2008 205

Table 47 Classification of requests for professional opinions according to the number in 2020 206
Table 48 Implementation praxis register 209
Table 49 Outcomes of the institutional land-use implementation practices in the Sarajevo Canton..... 212
Table 50 Evaluation questions on the building permit procedure in the Sarajevo Canton 215
Table 51 The range of possible responses 216
Table 52 Outcomes of the Delphi methodology 220
Table 53 Differences between the two scenarios according to building permit indicators..... 237
Table 54 Reference of the future building code to planning instruments according to Scenario “B”..... 246

PART I

Introduction

1 Basic Facts on the Research

1.1 Introductory Notes about the Topic

"No norm, no precept. Code as a system, rather than a rule."
Gausa M. et al.

"Codeless Sarajevo" is a book based on a PhD research that was conducted under the supervision of Professor Dr. Thomas Dillinger at the Faculty of Planning and Architecture of TU Wien in the period 2018–2021. The idea for this research matured during 20 years of the author's professional experience as an urban planner in Sarajevo. It reflects more than one hundred of years of dichotomy between planning and coding systems in Sarajevo, the phenomena that significantly impacted the urban development of the city. The aim of the research was to answer the following questions: Can planning and coding be synchronized? What would be the model for the new building code in Sarajevo?

In most European countries, spatial and land-use planning and implementation are based on two instruments: spatial and land-use planning documentations (formal and informal) and construction law/building codes. These instruments are completing each other. Spatial and land-use planning documentation defines zones and rules for each zone, whereas building code documents define rules and regulations for a design project, urban and technical conditions, norms, and standards for obtaining a building permit. In general, spatial and land-use planning documentations answer the questions of "what" and "where" to build, whereas building codes answer the question of "how" to build on a specific plot, in a specific context. Marshall (2012), in *Urban Planning and Coding*, noted that

> Planning and coding are almost like twins – or at least siblings – typically found hanging out together, but with slightly different temperaments. Planning has historically tended to be extrovert, heroic, visionary, innovative: concerned with the outline or big picture, the broad-brush, the clean sweep. Coding has tended to be more introverted, more concerned with the details, more specifically concerned with formats and dimensions, specifically permissive or proscriptive, more tending to be conservative, and inclusive with what already exists. (p. 7)

In the same book, Kropf rightfully declared that in Europe, there is a "distinction between Romano-Germanic model and Anglo-Saxon legal systems" (p. 158). A Romano-Germanic legal system affected the creation of a Romano-Germanic building code model, which was modified and amended through history, following the development of European cities as systems, primarily to provide transportation and communal infrastructure, to protect citizens' health and wellbeing, and

to protect properties from natural disasters and hazards. In this research two specific Romano-Germanic building codes shall be analyzed, those of Paris and of Vienna, that affected the creation of the Sarajevo building codes.

In a contemporary context, “while coding is now receiving increasing interest, it is not always clear what exactly it means, what its possible formats are, or what it can achieve in conjunction with urban planning” (Marshall, 2012, p. 2). Again, specific contemporary planning and coding systems relevant to the Sarajevo Canton (SC) spatial planning legislation shall be analyzed in the research: Zurich, Viennese, Paris, and Slovenian building codes.

In Sarajevo, post-war, divided and transiting city from the socialist to the market economy, the absence of coding during the two post-war periods (from 1945 until today) might be associated with informal building, supplementary procedures in parallel with the proper ones, corruption, lack of clarity, and transparency in building permit procedures. This book could not cover all the mentioned above factors, especially those that could not be proven with facts.

Sarajevo received its first building code in 1880 and the second in 1893, and under the Kingdom of Serbs, Croats, and Slovenes/Kingdom of Yugoslavia, in 1936, the same building code applied to cities and towns within nine counties, among which was the Drinska banovina to which Sarajevo administratively belonged. Since then, this land-use planning implementation instrument disappeared from the spatial and land-use planning and building legislation. For an abbreviated period, it was replaced by the construction decision for Sarajevo in 1957. Afterward, the building permit procedure has been conducted on the spatial planning law.

Today, urban and technical conditions, defined by an urban permit, are mostly defined by decisions of implementation, which are part of zoning and development plans, mostly unsynchronized, so there is no comprehensive approach for similar issues for the whole territory of the SC.

In fact, as a main topic of the research, fragmented rules and regulations are presented, that vary from plan to plan, from municipality to municipality, and no building code/order. Most often, a design project is a guideline for urban and technical conditions for obtaining a building permit.

The result is an unsecured ambient not only for investments but for the health and wellbeing of citizens and for the quality of the environment.

1.2 Past Review Studies about the Research Subject

There are no past studies about the coding systems in Sarajevo, especially studies with the aim to reintroduce a building code. The situation is different when

analyzing studies on planning and coding in Europe and the United States of America. In such a context, recently, there are few studies about the historical importance of coding and books about the linkage between coding and planning and new methods for coding in the 21st century among which are *Wiener Bauordnungen und Planungsinstrumente im 19. Jahrhundert* by Anna Hagen, Der Einfluss der Bauordnungen des 19. Jahrhunderts auf die Stadtgestalt von Wien by Harald Stühlinger and Urban Coding and Planning edited by Stephen Marshall. In one of these past preview studies, Anna Hagen showed that:

> Building codes, zoning plans and other regulations for urban land use and infrastructure, when implemented, have far-reaching effects on the environmental conditions and thus also on the health of city dwellers. Thus, building, and spatial planning are an important topic in urban environmental history. (Hagen, 2015, p. 4)

Rules and regulations not only determine but also follow urban development, technical innovations, and political interests, and therefore represent the specificity of building in contemporaneity. Hagen noted that:

> These specifications remain usually visible in the cityscape for a long time, since buildings, at a certain point in time, are the standards and the period of validity of these standards is long. Even regulations concerning the choice of material (e.g., paving), may remain a defining feature of urban space for a long time. (Hagen, 2015, p. 7)

According to Harald Stühlinger, the building standards may be subdivided or defined at two different levels, which influence the shape of a city: “On the one hand, there are hard factors, such as building dimensions and street widths, on the other hand soft factors, such as details of surface design, elements such as paving or openings in facades” (Stühlinger, 2004, as cited in Hagen, 2015).

Past review studies show the specific models of the building codes (the Viennese in particular) and their creation and development to our contemporaneity. Marshall distinguished three main categories:

> First, there are codes with utilitarian purposes, concerning issues to do with “health and safety” (especially, fire prevention) and protection from nuisance. These are associated with the utilitarian purposes of town planning.
>
> Second, there are codes with a broad range of purposes with the nature of the urban fabric, concerning the creation or preservation of areas of particular character or the promotion of architectural appearance, with physical “variety with harmony.” These purposes are strongly associated with “urban design,” although they too have traditionally been part of the town planning agenda.

> Third, there are codes with a purpose to do with social ends: the promotion of a spatial structure commensurate with a particular sort of social order or the promotion of a neighborhood sense of identity and social solidarity. These could be identified with the “utopian” tradition in town planning. Taken together, this range of purposes suggests that coding is not just about aesthetics or micromanagement of site use; all the above purposes could be consistent with the general prerogative of planning. (Marshall, 2012, p. 228)

Although there are different building code models, they all share the same goal, which is to create a set of rules and regulations to create an ordered, safe, and sustainable urban environment.

1.3 Research Subject, Goals and Assignments, and Research Hypothetical Framework

This book is related to architecture, as a main field, to spatial and urban planning and coding within and planning control and integrated land-use management, in particular.

The subject of this research is the justification of reintroducing the building code document to the SC spatial and urban legislation, and its narrower subject is developing a new model of the building code document for the SC.

The main goal of the research is to develop a model that enables systematic spatial and land-use planning implementation in the whole territory of the SC with an impact on human and environment health and well-being protection and improvement of the living standard. To fulfil these goals, the following assignments are needed:

- Comparative analysis in historic sequences – the case studies of building orders in Paris, Vienna, and Sarajevo
- Case study of spatial planning systems, building codes, and building permit procedures in Bosnia-Herzegovina, Austria, Switzerland, Slovenia, and France
- Empirical-analytical evaluation method of spatial and land-use planning implementation procedures and practices (sample method analysis of the process of obtaining a building permit in the SC, indicating the weaknesses of the process derived from the methodological analysis)
- Conducting the Delphi method to identify evaluation factors by an expert team in the SC and reaching their consensus about the research subject
- Proposing the model for the new SC building code and its elements.

In accordance with the research subject, a general theoretical starting point is defined with a null hypothesis:

- It is advisable to introduce the building code document to the SC spatial and urban planning legislation to achieve integrated land-use management and land-use planning implementation.

The hypothetical framework implies that the setup of the hypotheses is based on previous knowledge, experience, logical thinking, and correlation making. The causal hypothesis, composed of a correlation relationship between the characteristics and parameters of spatial planning systems, building code documents, spatial planning laws, building laws, and building procedures, are being built out of the following general hypotheses:

- The building permit procedure in the SC has shortcomings.
- In the absence of a building code, it is possible to build without a building permit.
- The number of plan changes increases in correlation with spatial planning law changes.
- The number of plan changes is greater than the number of plans.
- Non-restrictiveness and lack of a binding structure of implementation decisions can be correlated with the absence of a spatial and land-use planning implementation instrument.
- The number of requests for urban permits (see definition in chapter 1.4) is significantly bigger than the number of requests for building permits.
- The number of requests for building permits is significantly bigger than the number of requests for building control permits.
- The enormous number of requests for professional opinions can be correlated with the absence of a building code.
- Land development fee as a society cost instead of a private owner cost is a result of the weak spatial and land-use planning implementation.
- In a continental European spatial planning system, a spatial planning law (S) and building code (B) are necessary for obtaining a building permit (P), i.e., S+B=P.
- A building code should be a function of a building permit procedure, on one side, and an implementation function of land-use planning, on another.

1.4 Research Definitions

The definitions of terms used in the research methodology include the following: building code, urban permit, land-use planning implementation indicator, and sustainability.

Building code Along with the spatial planning law and sectoral planning legislation, a building code "provides for planning maintenance and safeguards. These provisions address the relevance of a violation of procedural and formal requirements and implications for the validity of plans" (Pahl-Weber & Henckel, 2008, p. 224). A building code has a procedural role (building permit) and a material role and contains construction, alteration, renovation, and demolition regulations. The requirements refer to different matters, such as shape, scale, architectural appearance, materials, and color of the building installations, and they demand that these should not adversely affect the surrounding area. For some aspects, such as matters of public health or energy saving, there are federal regulations (Meijer et al., 2014, p. 86).

Sustainability "The expansion of the sustainability concept to one of 'sustainable development' is directed in more general terms towards balanced development (taking equal account of economic, social, and environmental aspects) and towards long-term development in all areas of life (thus conserving resources)" (Meijer et al., 2014, p. 259).

Land-use planning implementation indicators are developed in the context of sustainability for the SC case study.

Urban permit In the SC and Bosnia-Herzegovina, urban permit is a binding precondition for obtaining a building permit. It defines conditions for building design and approval of future spatial changes in compliance with spatial planning documentation according to the Spatial Planning Law (2017). It can be approved according to the professional opinion of the Institute for Canton Planning. Other planning and technical conditions, which are not prescribed by the law, are defined by the responsible authority.

Supplementary urban/building permit According to the Decision on Legalization (Službene novine Kantona Sarajevo, 2006), it was possible to apply, until the beginning of 2016, for a supplementary urban permit procedure, which was a far more simplified procedure with numerous benefits for informal builders. Applicants for supplementary building permits who are a social category, as defined in the Decision of Legalization, were exempted from the land development fee.

Process evaluation/implementation assessment It is a form of program monitoring is designed to determine whether a program is delivered as intended to the target recipients. It is also known as an implementation assessment. The process of obtaining a building permit in the SC will be evaluated.

The **target** is the unit (e.g., individual, family, and community) to which a program intervention is directed. All such units within the area served by a program comprising its target population. The population of the SC is the target unit in this research. It is examined through a building permit procedure.

The **catchment area** is the geographic area served by a program. The territory of the SC is the catchment area of this research.

The **performance criterion** is the standard against which a dimension of program performance is compared so that it can be evaluated. The parameters from the study conducted by researchers K.S. Calbick, J.C. Day, and Thomas I. Gunton will be used for the evaluation of the spatial and land-use planning practices in the SC. In the SC, stakeholders are institutions in the cantonal, city, and municipal levels, which practice spatial and land-use planning implementation.

Stakeholders are individuals, groups, or organizations having a significant interest in how well a program functions, for instance, those with decision-making authority over the program, funders and sponsors, administrators and personnel, and clients or intended beneficiaries.

Utilization of evaluation is the use of the concepts and findings of an evaluation by decision-makers and other stakeholders whether at the day-to-day management level or at a broader funding or policy level. The utilization of the evaluation will be performed in the Delphi method.

Impact theory It is a causal theory describing cause-and-effect sequences in which certain program activities are the instigating causes and certain social benefits are the effects they eventually produce. The impact of the absence of a building code document will be measured through planning implementation parameters in the SC by evaluating a building permit procedure's shortcomings and planning practice implementation programs.

1.5 Research Methods

The rationale of finding an appropriate method for examining the absence of a building code was related to the building permission procedure as a function of a building code in continental European countries. Therefore, the research causal hypothetical framework was examined through a comparative-historical method, because a building code did exist in Sarajevo in the past, empirical-analytical methodological research, case study method, questionnaire, interview, and the Delphi method, all of which are related to the building permission procedure in Sarajevo contemporarily. The correlation between these groups of data will approve or disprove the causal hypothesis in this research (see Figure 1).

The first part of this book is the introduction. The second part demonstrates the conducted comparative-historical method, which is organized as an analysis of the first building codes of Paris and Vienna that had an impact on the creation of the first Sarajevo building codes, and the analysis of circumstances that caused the absence of the Sarajevo building code after the Second World War. Further-

more the analysis of building permit procedures in Vienna and Zurich in the contemporary planning and coding systems of Austria and Switzerland is presented, that might have a particular significance to the Sarajevo and Bosnia-Herzegovina case studies.

The third part of the book demonstrates the conducted evaluation of the building permit procedure in the SC in the absence of a building code and the outputs of the comparative-historical method, empirical–analytical methodological research, and Delphi method.

Finally, the book ends with the assessment of the hypotheses and development of a model for the new SC building code. The fourth part of the book consists of conclusions and research recommendations.

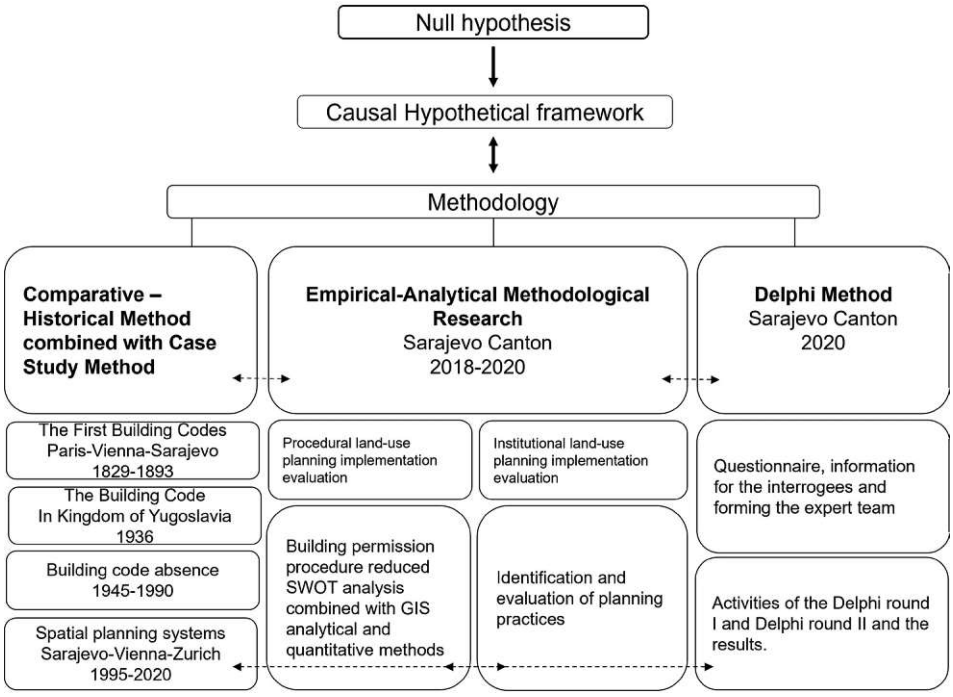


Figure 1 Research methodology framework *(Pelja-Tabori, own presentation)*

1.6 Scientific Justification and Expected Results

The purpose of the research presented in this book is to evaluate the land-use planning implementation with the proposition of enhancing the building permit procedure and land-use planning practice.

The research methodology design is based on a comparative-historical analysis combined with the study case method, reduced SWOT analysis (strengths, weaknesses, opportunities, threats) combined with GIS (geographic information system) data analysis, modified method used by Noam (1985), Rossi et al. (2004)'s program theory evaluation method used by Calbick et al. (2003), and the Delphi method.

The book represents the main purpose of the research, which is defining the model for introducing the SC's new building code document.

PART II

Historical Background

2 Building Code History

In compliance with the theoretical framework, the comparative-historical method is organized as an analysis of the following chronological ordered sequences of events that occur within cases:

- **Sequence 1 – The First Romano-Germanic building codes:** The comparative-historical analysis of Case “A” (the first building codes of Paris), Case “B” (the first building codes of Vienna), and Case “C” (the first building codes of Sarajevo). The time framework for this method is 1784–1918. The documents were compared in terms of the sociopolitical climate in which they have been adopted and the content. The documentation sources were found in the Institute for Canton Planning Archive, Archives of Bosnia-Herzegovina, Sarajevo Historical Archives, TU Wien Bibliothek, the private library of the researcher, and web pages.
- **Sequence 2 – The building code in the Kingdom of Yugoslavia:** The comparative-historical analysis of the building code and the spatial planning legislation was in force in the cities and towns in the Kingdom of Yugoslavia. The time framework for this method is 1918–1941. The document was evaluated in terms of the legislation framework of the Kingdom and sociopolitical circumstances. The documentation sources were found in the Institute for Canton Planning Archive, Archives of Bosnia-Herzegovina, and Sarajevo Historical Archives.
- **Sequence 3 – Absence of a building code during the Socialist Federal Republic of Yugoslavia:** The comparative-historical analysis of the spatial planning system of Sarajevo in the socialist Yugoslavia included the spatial planning legislation, documents that replaced the building code in Sarajevo in its absence, and building permit procedure. The time framework for this method is 1945–1990. The documents were compared in terms of the sociopolitical circumstances in which they have been adopted and the content of the norms. The sources for this method include bibliographies from the private library of the researcher, the Institute for Canton Planning Archive, Archives of Bosnia-Herzegovina, and Sarajevo Historical Archives.
- **Sequence 4 – Contemporary spatial planning systems:** The comparative-historical analysis of Case “A” (Sarajevo), Case “B” (Vienna), and Case “C” (Zurich) was conducted in several levels: political framework and spatial conditions, spatial planning systems, governmental levels responsible for spatial planning, legislation, building codes, building permit procedure, and planning and coding as instruments of creating a land property value. The time framework for this method is 1995–2020. The documents were compared in terms of the sociopolitical circumstances in which they have been adopted and their content. The method was combined with a case study method conducted at the Vienna University of Technology from October 2018 until October 2019, Institute for Technology in Rapperswil, and Swiss Federal Institute of Technology in Zurich on November 2019. The sources for this method

were found in the libraries of the respective universities and from interviews conducted with professors in the spatial planning departments of these institutions. The comparative analysis of Slovenia's construction law and the Federation of Bosnia and Herzegovina's construction law and the comparative analysis of the form-based coding or morphological zoning coding theory and the contemporary morphological zoning coding through development and detailed planning documentation in the SC was conducted, which focused on specific points.

The outcomes of the comparative-historical methodological analysis shall be given in the second part of the book, along with the outcomes of the empirical–analytical methodological research and Delphi method.

2.1 Relevant Continental European Building Codes for Sarajevo

"And this is a city
In name but in deed
It is a pack of people
That seek after meed [gain].
For officers and all
Do seek their own gain
But for the wealth of the Commons
Not one taketh pain.
And hell, without order
I may it well call
Where every man is for himself
And no man for all."

Robert Crowley, writing in the 16th century, as cited in Mumford

In broader Europe, there is a distinction between two legal systems: European or "continental" legal systems (Romano-Germanic) and Anglo-Saxon systems. "The French system provides more certainty but might be considered too rigid, while the UK system is more flexible might be considered too arbitrary" (Kropf, 2012, p. 159). London already had a building code in the 13th century. However, due to a fire incident, Paris got one in the 17th century, "in the initiatives of King Henry IV of France to improve the physical fabric of Paris and control the process of development" (Alsford, 2006, as cited in Green, 2012, p. 15).

Behind the formal analysis represented in this section, informal historical facts and liaisons indicate that the friendship between the Austrian Ambassador Joseph Alexander von Hübner and Haussmann during the Second French Empire and the ambassador's admiration with the transformation of the French capital led to the competition for systematization of the Ring in the Austro-Hungarian capital city. Furthermore, the annexation of Bosnia-Herzegovina to the Austro-Hungarian

Empire brought Viennese planning and coding culture to the Bosnia-Herzegovina's capital. The socialist socioeconomic and political systems after the Second World War in Socialist Federal Republic of Yugoslavia (SFRY) created a spatial planning system with no building code. Although prevailing expert opinions back then appreciated the importance of the code, they tacitly considered the capitalist and occupation legacy and, as such, are incompatible for implementation.

2.1.1 First Paris Building Codes

Paris was the first continental European capital to establish a building code document due to specific circumstances in the city's history and precedent laws and subordinate regulations brought from the 17th century:

> The building line and height limits had been used since the Middle Ages in relation to the street, in an effort to prevent appropriation of public highway and so maintain accessibility (the dimensions were a 7 m street width and 12 m height). These regulations were enforced by the post of voyer, responsible for maintaining the streets and keeping them passable. Henry IV consolidated these elements in the edict of 1607 and created the post of Grand Voyer to administer a system of permis de construire (Fr. building permits) for all rebuilding projects as well as new buildings. (Booth, 1996, p. 42, as cited in Kropf, 2012, p.160)

Caron (1992), as cited in Landau (1992, p. 24) in his analysis of Paris Street fabrication, wrote:

> Hygiene and health, after the terrible epidemics of cholera in 1832, typhoid fever (there were 7000 deaths from typhoid fever from 1872 to 1877), and tuberculosis are at the center of the concerns of the technical elite and those responsible for the disease – administration. The issues of water supply and sanitation in the city are among the most urgent to address. The smells – Paris smelled bad – are omnipresent; realistic literature testifies to this. Aeration, ventilation, dust control mobilizes the research and innovation capabilities of engineers and companies. The aspiration to comfort and well-being, carried by the new urban social layers, poses the problems of distribution of energy to individuals: heating, electricity, and telephone. The issue of daily migrations, pedestrian traffic, private cars, and public transport remains a hunting problem for everyday life and the growth of the economy.

Paris started to rapidly develop and changed its urban appearance. The law enacted on from June 7, 1845 established the system of *trottoirs* (sidewalk); in 1859, periphery municipalities were annexed to Paris; from 1810 to 1848, the tracing

of 180 streets was enabled (110 between 1830 and 1848), with 42 km executed upon private initiatives (Landau, 1992 p. 28). The lease from 1830 is particularly important because it established, for the first time, a division between the supply market and communal infrastructure access. It (the lease) is still valid in the form of the 1993 direction on the road system, which is unique for Paris, compared to other cities in France. The city grew from 1,053,000 to 1,850,000 inhabitants between 1851 and 1870 (Lameyre, 1958, as cited in Landau, 1992, p. 31).

The transformation of Paris began with a street becoming a public space and changing its scale from a narrow street to a boulevard. The formation of sidewalks introduced pedestrians safely to the new paved elements of a street.

In his mémoires, Haussmann made the distinction between the nature and the service function of the public street (Fr. voie publique) and street network (Fr. voirie) (Lameyre, 1958, as cited in Landau 1992, p. 31).

A public street was the exclusive competence of engineers in terms of the establishment of new streets, avenues, boulevards, public space, and sidewalks, among others, in Paris in the 19th century, whereas a street network was the competence of the police (Lameyre, 1958, as cited in Landau 1992, p. 31).

Aside from creating a new street type, there was a necessity of establishing a certain ratio between the scale of a street and the scale of a building that frames it. The relation of a public space and a built environment was not described nor regulated before in Europe, at least not in a written form, but only in drawings, plans, and sections: “What is most interesting is that the relationship between street width and building height was only treated in regulatory plans in Paris between 1784 and 1902, and not so much in the written documents” (Lameyre, 1958, as cited in Landau, 1992, p. 31).

In the history of Paris, three years are important in the field of urban regulations: 1784, 1859, and 1884. Therefore, the regulations related to alignments, heights, sidewalks, facade materials, and projections, which have been defined, as early as the end of the 18th century, have conditioned the homogeneity of the new urban landscape (Landau, 1992, p. 33). In 1784, the street width was defined only by the police contract: “distinguished three street types: large streets (19.50 m wide), middle streets (communication and distribution streets) and small streets” (Landau, 1992, p. 33). The regulation from July 27, 1859, accepted the principals of the one created in 1784. It created a supplementary rule for streets that are 20 m wide and more. Its first article specifies the following regulations:

- 11.70 m height for buildings whose facades are facing a public street less than 7–8 m wide
- 14.60 m for streets with 7.80–9.75 m width

- 17.55 m for streets that are more than 9.75 m wide
- For public streets that were more than 20 m wide, the height of a building could be 20 m, on the condition that it does not have more than five floors.

For the first time, the plan of housing units' hygiene and the order of facades were taken into consideration. In particular, the floor height was prescribed to a minimum of 2.60 m. The height of buildings facing private streets should have been a maximum of 17.55 m. This regulation was completed by two decrees, one from August 1864 and another from June 18, 1872, which provided minimal dimensions of courts and courtyards:

> For buildings that are 20 m high and more, the court should have had a minimum area of 40 m², and its smallest side should be 4 m long. It was forbidden to build parts intended for housing in courts or courtyards. The oblique part of the building at 45° was a maximum of 5 m wide. (Landau, 1992, p. 34).

Landau (1992) continued in his explanation of the regulation from 1859 that the civil code (Fr. building code) was the first text, until then, which regulated the land-to-building ratio (p. 34). The author wrote:

> We know that the notary acts were accompanying land cessions and a right to build, but the new breakthrough was accompanied by architectural prescriptions and recommendations considering selection of materials […]. Those regulations have took into consideration street network and technical obligation to apply for a water and sewerage connection, as well as to finance the construction of first city's sidewalks…The altogether of regulations and the participatory project of boulevards created an urban prototype of redefined relations between public and private space. It is the Second Empire which established strong coherence between the art of public street and the regulations on the street network. It was accompanied by the improvement and modernization of a city and codifying the norms for a new type of living environment for a civic bourgeois. (Landau, 1992, p. 34)

Twenty-five years later, on July 23, 1884, a new decree was enforced to ensure better hygiene of housing, especially regulating, more precisely, courts and courtyards. Living rooms facing courts had to have an area of at least 30 m². For buildings 18 m high and more, they should be at least 6 m wide. The height of a construction that faced a street, regardless of the situation, either at the edge of a public street or private street was determined by the width of the roads. The width might have been 12, 15, 18, or 20 m. The height of the ground floor should be at least 2.80 m. Parallel to this decree, on July 22, 1882, the regulation of public administration was passed, which defined the condition for projections approval

(in this case, facades could be modelled with protrusions, balconies, or some other relief elements) for buildings that have been orientated to a public street in Paris (Célestin, 1888, as cited in Landau, 1992, p. 34). For the first time, this text related the proportion of projection to the street network. Façade modelling elements and other elements of a building were rigorously described and regulated. The regulation was harmonized with an architectural typology adapted to a construction process. This regulation served as a model for regulations in provincial towns that adapted it to local conditions. The question of building heights and protrusions remained in debate until the publication of the new decree in 1902[1]. The Paris transformation was revolutionary at the time. From the city facing a catastrophic epidemic and not having infrastructure networks, it has succeeded in regulating its water supply and sewage system and has established a street network in correspondence with a block system of five store buildings with inner courtyards. This became an urban matrix for the whole Europe. The most interesting is that the motivation for these great works was to regulate a public space: All the elements of the urban composition have their foundations in a public space: a spatial division of plots and blocks, presented in a street perspective and historical monuments, building accesses, and construction regulation. It (public space) appears to be the integrating and unifying element of the city territory (Landau, 1992, p. 34).

Landau gave a very precise description of the processes that lasted for a century and have led to regulation modification and completion of a document entitled Code Civil in French or Building Code in English. The new regulation form of urban planning was rapidly accepted in other European countries or, more precisely, empires, among which was the Austro-Hungarian Empire at the time and its capital Vienna. Tamborino (1998, p. 116) wrote: we talk about a big project, a Program, according to Haussmann's definition, which had to be 'completed' and 'perfected' to transform the old Paris. It seems that Joseph Alexander von Hübner, Austrian Ambassador during the Second Empire period, shared Haussmann's opinion. He knew Haussmann privately, met him often and considered him the inspiration and soul of all those works which he admired in the French capital. It is interesting to notice that the ambassador stayed in Paris from 1851 to 1859, and soon after, Vienna announced the competition for systematization of the Ring, which provoked the Austrian Capital to experiment with its own model of urban reconstruction, different from Paris, but at the same time, analogue to the French capital, by the initiatives for the role of public buildings and introducing the infrastructure networks.

1 The regulation of 1902 introduced a change of scale with previous regulations. It reinforced the importance of parts located above roof sewers and evoked the proportionality of the building height and the width of the protrusions with the width of the streets. It represents a turning point that changed the architecture of streets and growth in the size of buildings.

2.1.2 First Viennese Building Codes

While writing on Vienna building codes and planning instruments in the 19th century, Anna Hagen (2015) elaborated on four important dates in Vienna's building regulation history in the 19th century: 1829, 1859, 1868, and 1883. Under the historic urban circumstances in Paris – epidemic of cholera, no sewage and water system, it was obvious that the city had to organize itself in a new way (Hagen, 2015, p. 22). The First Vienna building code, issued on December 13, 1829, contained 30 paragraphs and was divided into three sections:

i. Determination of the course of proceedings to be observed before undertaking a construction
ii. Building regulations
iii. Construction rules.

This structure was based on a chronological approach. The three sections referred to the chronology of the construction process: before, during, and after the construction. Hagen (2015, p.8) explained that :

> The first section elaborated on building owners, the second on contractors regarding the implementation and execution of the building project and the last section referred to the compensation of the public land after completion of the construction activity, approval and authorization procedures and sanctions of the control bodies in the local authority, in case of ignoring the regulations.

In the first building code in §9, p. 3, a rule was created stating that every new street should have been at least five fathoms[2] wide (9 m) (Hagen, 2015, p. 13). In §7, p. 5, it has been prescribed that new houses should have been four stories high. In §22, pp. 5, 6, we find the prescriptions about "paving the streets in the city center, as well as in suburbs, building recommendations for flood in suburban territories etc." (Hagen, 2015, pp. 13, 14). The author wrote that the building code from December 2, 1868, was the third Vienna building code, and it was the revision of the Second Building Code from September 23, 1859, which was issued by the Ministry of Interior (p. 9). Hagen (2015, p. 9) continued that it was completed with a subordinated form, a decree on March 9, 1849, by which suburbs were annexed to the City of Vienna and the proclamation of the k. u. k. monarchy, County Government of Lower Austria, on March 20, 1850. The author concluded that another city zone expansion was determined by the decision to grind the city wall and to cultivate the glacis. This is how the Ring Road was created around 1865.

2 1 fathom = 1.8m

The Third Building Code was extended from 73 to 93 paragraphs in comparison to the Second Building Code and was reduced by one section. It contained the following sections:

i. Building permits
ii. Construction regulations
iii. Industrial buildings
iv. Completion of building considering regulations
v. Transitional and final provisions: penalty clause
vi. Implementation of the building code considering the competencies of the authorities.

The innovation of this building code was the third section of industrial buildings. The third building code was correlated to the General building plan (Ger. Generalbaulinienplan from 1866) (Hagen, 2015, p. 9). In §21, p. 12 of the third Vienna building code, it was prescribed by the building authorities to build sidewalks in a ratio of one sixth of a proposed street width. The regulation was accompanied by the street construction width and building materials, among others.

In §36, pp. 17, 18, they mentioned height propositions for the ground floor in housing buildings and how it is important for their (housing buildings) ground floor level to be above a street or courtyard level, and not below it, for protection from floods and subterranean waters.

The number of prescribed floors in housing buildings, which is four, remained the same, as in the previous building code. The maximum height of housing buildings, including the roof top, should not have exceeded 13 fathoms (24 m), considering that the absolute zero of the building has been counted from the topmost point of the sloped terrain. The clear height of all housing floors with plane ceilings should have not been below 9 ft.[3] (2.7 m). Curved ceilings would have been counted proportionally to other room dimensions. It was forbidden to build residential buildings with more than four stories, including the mezzanine (§44, p. 21).

The attic ought to be fireproof and designed entirely under terms of fire protection. Building housing units in the attic was prohibited (§53, p. 24). Special dedication has been given to a building fire protection in §54, p. 25 (Hagen, 2015, pp. 15, 16).

The fourth building code issued on January 17, 1883, was amended in 1890. “The amendment has provided development of zones with front gardens, division of building authorities competencies and the municipal council obligation to enact the General building plan” (Hagen, 2015, p. 10). The government revised this

3 1 ft. = 0.3 m

building code due to the “fire of the Ring Theatre on December 8, 1881, in which several hundred people lost their lives” (Hagen, 2015, p. 10).

The consequence of this devastating fire was the “enhancement of the fire regulations, such as prohibition of constructing residential buildings with access galleries“ (Stühlinger, 2004, as cited in Hagen, 2015, p. 10) and an annex to the sixth section of the building code in which the “construction of new theatres with its facilities and the theatre construction in general” was, by law, the responsibility of the inspectorate and fire safety inspection (Hagen, 2015, p.11).

The urban population had grown to a million inhabitants, and it demanded the new regulatory amendments in 1890. These amendments contained 110 paragraphs and 11 sections:

i. Construction line and existing streets, alleys, and square level definition
ii. Construction line and new street, alleys, and square level definition; the building site selection
iii. Ground cession and street fabrication
iv. Building permits
v. Construction regulations
vi. Public buildings
vii. Industrial buildings
viii. Determination of a special kind of obstruction and facilitation under facilitated conditions (excluding industrial buildings)
ix. Completion of building considering regulations
x. Transitional and final provisions: penalty clause
xi. Implementation of the building code considering the competencies of the authorities.

An innovation of this building code was the establishment of the measurement standard in the metric system, instead of the fathom unit, until then. “The dimensions were rounded up to the nearest meter” (Hagen, 2015, p. 12).

In the fourth Vienna building code in §2, pp. 3, 4, it was prescribed that construction lines in existing streets and alleys should be as straight as possible and that public streets and alleys must be 16 m wide, or 12 m, under special occasions (only if they are not the roads that form the main arteries). In §5, pp. 7–9, it was prescribed that new roads and lanes should be as straight as possible, at least 16 m wide, and accordingly should be executed in line with the general building plan. Moreover, cul-de-sacs should be avoided if possible. Two-story housing buildings should not exceed 15 m in height. Houses with front gardens were allowed only in streets that did not serve as main roads. For these streets, the minimum width was 10 m (with sidewalks), and the prescribed distance between housing buildings should be at least 18 m. Porticoes, verandas, staircases, and

terraces should only be up to half of the front yard depth. Front yards must appear on all plots along the same street.

Paragraphs on the fire protection terms were expanded (§38, p. 38). In §42, pp. 41, 42, a height of 25 m was prescribed for housing buildings, with the top floor at 20 m above the street level. The point of sloping terrains was calculated from the highest point of a terrain. The clear height of housing floors should be 3 m for straight ceilings, whereas for curved ceilings, it would be counted proportionally to other room dimensions. The ground floor level for residential buildings was regulated to be 15 cm above the street and courtyard level (§46, pp. 42–46). The paragraph about the attic was completed in terms of fire protection measures, but it remained the same in terms of the prohibition of housing units on the attic floor. When building a new construction, the owner was obliged to leave enough space for the execution of sidewalks, close to a building façade that faced a public street. The prescribed sidewalk should have been at least one-sixth of the street width or a maximum of 5.75 m. The pavement of the sidewalk was defined by the authorities (§57, pp. 54–56). The municipal resolution of May 20, 1862, p. 922, defined the type and technical characteristics of pavement materials for side streets. With the regulation of November 8, 1883, pp. 40–67, the local authority became responsible for defining the pavement materials for Districts II to X defining the terms for restoration or rebuilding existing sidewalks has also been the responsibility of the local authority (Hagen, 2015, p. 22).

The solutions for sewage and water supply system and toilets for the buildings in a growing city were incorporated in the four Viennese building codes (Hagen, 2015, pp. 22–29).

Vienna building codes were synchronized with general regulatory and construction zoning plans in the 19th century and the beginning of the 20th century, which provided a basis for a modern and contemporary spatial planning in Vienna (Hagen, 2015, pp. 41–55).

Hagen concluded that urban form is a sum of all the elements which form the city in relation to building regulations (Hagen, 2015, p. 13). The author quoted Harald Stühlinger, defining two diverse levels of building standards that influence the city's image. On the one hand, there are "hard factors," such as building dimensions and street width, and on the other hand, there are "soft factors," such as the details of the surface design elements, such as paving or façade openings and protrudes. Residential buildings should have a maximum of five floors, including the mezzanine and ground floor. This rule applies for Districts IX–XIX. For other regions and districts, housing buildings should not exceed three floors. It was prescribed for all buildings, mentioned above, to have plane ceilings. The clear height of the floor should be 2.6 m. The relationship between "housing and atri-

ums in housing buildings in terms of size, materialization, ventilation," has been prescribed in §43, pp. 41, 42 (Stühlinger, 2004, as cited in Hagen, 2015, p. 13).

Vienna, as the capital city of the Austro-Hungarian Empire, spread the idea of order in urban planning in all parts of the former monarchy. Sarajevo, part of the Austro-Hungarian Empire, got its first building code and regulatory plan, shortly after the annexation of Bosnia-Herzegovina. The content and specificity of this document, as well as the historical facts about the period after the annexation of Bosnia-Herzegovina to the Austro-Hungarian Empire, will be elaborated in the next section.

2.2 Sarajevo Building Codes

2.2.1 First Sarajevo Building Code

As a part of the Austro-Hungarian Empire, Sarajevo got, shortly after the occupation, after the Great Fire of 1879 (see Figure 2), the first building order/code for the State Capital Sarajevo for the territory of the city (Ger. Bauordnung für die Landeshauptstadt Sarajevo) was issued on May 14, 1880 (Sammlung der für Bosnien und die Herzegovina erlassenen Gesetze, Verordnungen und Normalweisungen, 1878–1880). The basis for the first building order was the "Ottoman Road Law," which dated from Dzemaziul Evel 7, 1280 (1863).

The State Capital Sarajevo was the key institution above all Sarajevo municipalities, which governed the Building Office responsible for the construction procedures in the city. The first building code for Sarajevo had 82 paragraphs organized in the three sections:

i. General provisions (§1–§22)
ii. Special provisions considering street widening and regulation, expropriation, and land subdivision (parcellation) (§23–§38)
iii. Building regulations (§39–§82).

In the first part of the building code, general rules for new constructions were given for territories inside the city boundaries. The institution of the Building Office was responsible for issuing building permits (§75) for all new constructions and for conversions (§2). The conditions for obtaining a building permit are given in §3; the conditions for executive projects in §4; the conditions for the conversion project in §5; the benefits for executive projects in §7; water usage and construction in water areas in §12; prohibition of construction without building permit in §13; prohibition of approved project variances in §14; building line determination

in §16; security measures and measures proposed by the street police during the construction period in §20; and building use permits in §22.

In the second part of the building code in §23, the street widening of all streets were classified in four classes:

- class I – for streets at least 11.25 m wide
- class II – 9 m
- class III – 7.5 m
- class IV – 6 m.

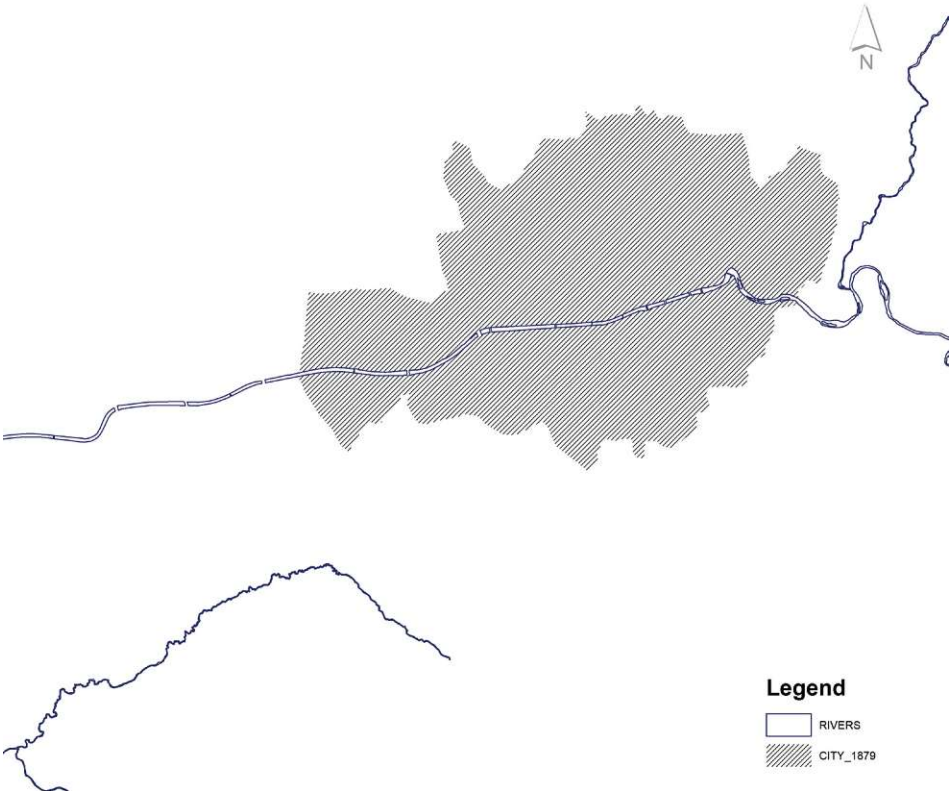


Figure 2 Sarajevo in 1879 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Aside from this classification, existing narrow streets could be 4 m wide. The tracing of new dead ends (Fr. cul–de-sac) was forbidden. Street classification was executed by the State Capital Sarajevo (Spasojević, 1988, p. 159).

Land cession for street regulation was elaborated in §24–§28; opening of new streets and squares in §29; new quarter construction in §30; construction of sacral buildings, gravestones, schools, or fountains in §31; subterrain constructions in §32; elaborated fire-burnt quarters and expropriation of fire-burnt houses

in §33–34; parceling of new building sites, parceling permit, and land cession for the purpose of parceling in §38.

In the third part of the building code in §39, contractor obligations were defined; building construction for public buildings and regulation for residential and industrial buildings were provided in §40; outbuilding and industrial buildings in §43; brickyards, drying houses, and plaster houses, among others, in §44; wall widths and types in §45–§48; ceilings in §49; corridors in §50; attics in §51; and floors and furnaces in §52.

The correlation between the street width and building heights was established in §53 as follows:

> For the streets 12 m wide and more, housing buildings should have three additional floors, beside the ground floor. In narrower streets, if they are not designated for widening, or the widening cannot be executed, it is forbidden to build houses with more than two stores above ground floor, nor to upgrade them above that level…The courtyards of the new buildings shall be designed wide enough regarding the building height, plot dimensions and surrounding buildings, to avoid harmful effect on population health. Archway spaces must have the minimum 3 m height, rooms with flat ceilings at least 2.6 m height. The courtyards of the new buildings shall be designed wide enough regarding the building height, plot dimensions and surrounding buildings, to avoid harmful effect on population health. In the narrow courtyards (so called Ger. Lichthof) the drain system must be designed with the special attention; those courtyards must not represent the fire danger if they are close to the attic or neighbor houses. (Spasojević, 1988, p. 163)

The street classification in the four classes was correlated to the building classification in four classes:

- class I: Three-story buildings
- class II: Two-story buildings
- class III: One-story buildings
- class IV: Ground-floor buildings.

The number of housing rooms, windows, and chimneys were defined in §54–§57. Special dedication has been given to building fire protection conditions for walls, rooftops, roof drain systems, and lightning rods in §59–§64; toilets in §65, and dwells and waterworks in §66.

In §67, protrusion building elements and balconies were determined as follows:

> It is forbidden to overdraw the building line by constructing protrude building elements, covered accesses with colonnades, fences, or external staircases, without the special permit.
>
> One may build open or closed balconies and galleries on console elements (iron or wood porter), but they may not exceed the façade line more then:
> - 1.3 m in open space,
> - 1.1 m in streets 12 m wide and more,
> - 1.0 m in streets 10 m wide,
> - 0.8 m in streets 8 m wide.
>
> These elements must be at distance of at least 1.5 m from border line of property with neighbor plot. The municipality must strongly attempt to remove all protrude building elements that might represent obstacle to transportation. These rules apply only for facades that face squares and streets. (Spasojević, 1988, p. 165, 166)

The sidewalks were treated in §68, workshops in §69, warehouses in §70, industrial buildings in §71, building maintenance in §72, forbidden maintenance in §73, and allowed reliefs in §74.

The Building Office and the municipality and their competencies were defined in §75–§77.

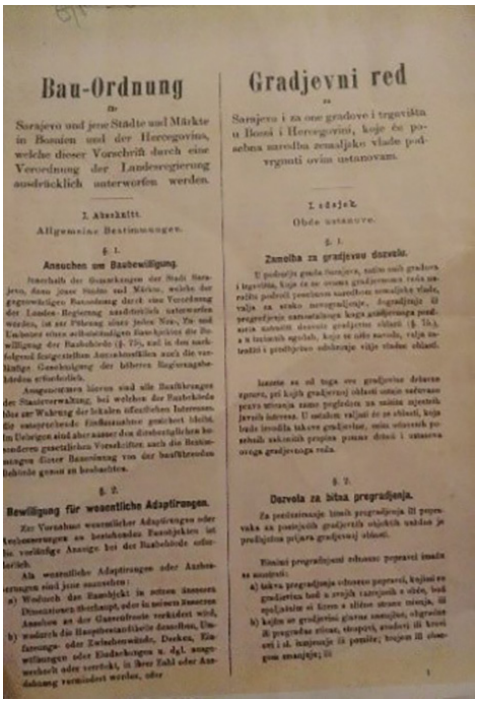
Transitional and final provisions: Penalty provisions and the implementation of building code were defined in §78–§82. Paragraph §81 defines the amounts for the building tax collection:

- Ground-floor buildings 8 kr
  (kruna, Ger. die Krone – currency during k. u. k. monarchy)
- One-story buildings 13 kr
- Two-story buildings 18 kr
- Three-story buildings 24 kr (Spasojević, 1988, p. 167).

Even though created for fire protection purposes, primarily the first Sarajevo building code synthesized the first regulatory plan, cadastral data, and building regulations for specific plots and enabled urbanization of the city according to the Romano-Germanic regulation and aesthetic model.

2.2.2 Second Sarajevo Building Code

Shortly after the first building code was adopted, in 1893, Sarajevo got the second "building code for the capital city of Sarajevo" (Zbornik zakona, naredbi i propisa za Bosnu i Hercegovinu, 1893) (see Figure 3).



Bau-Ordnung

für

Sarajevo und jene Städte und Märkte in Bosnien und der Hercegovina, welche dieser Vorschrift durch eine Verordnung der Landesregierung ausdrücklich unterworfen werden.

I. Abschnitt.

Allgemeine Bestimmungen.

§. 1.

Ansuchen um Baubewilligung.

Gradjevni red

za

Sarajevo i za one gradove i trgovišta u Bosni i Hercegovini, koje će posebna naredba zemaljske vlade podvrgnuti ovim ustanovam.

I odsjek.

Obće ustanove.

§. 1.

Zamolba za gradjevnu dozvolu.

Figure 3 Second Building Code for Sarajevo 1893 *(Archive of Bosnia-Herzegovina)*

A regulatory plan (Ger. Regulierungsplan) was the integral part and the graphic basis for the "building order for the capital city of Sarajevo," which represented a positive and for the time being very contemporary capital city of Sarajevo inheritance (Urbanistički zavod grada Sarajeva, 1960). Creating the zoning plan for the whole city territory, though, will wait for a while.

The new building code consisted of 75 paragraphs organized in four sections:

i. General provisions (§1–§22)
ii. Special provisions considering street widening and regulation, expropriation, and land subdivision (parcellation) (§23–§34)
iii. Building regulations (§35–§69)
iv. Building office, appeal, and penalty provisions (§70–§75).

The new building code was the revision of the first building code, except for a few following paragraphs: §23 (street widening) was extended in terms of exchanging

row houses along one building line with a system of freestanding urban villas with a specified distance from the street, which may be designed as a garden in front of a house. These villa complexes must form separate unit and cannot be interrupted by buildings with bare fire walls facing neighbors, nor buildings which protrude the row building line (Spasojević, 1988, p. 174). The former paragraph (land cession for street regulating and modification of the street direction) is divided in two paragraphs: §24 (land cession for street regulating without a street direction) and §25 (land cession for street regulating including street direction modification or street axis displacement). §28 (land cession evaluation) was extended in new §26 with the same title. In the former paragraph, the land was evaluated by two evaluators, appointed by a municipality and a landowner. If they cannot agree, the third evaluator was appointed by the national government. In the new building code, the evaluation was performed by four evaluators, two appointed by a municipality and two by a landowner. If a landowner did not appoint an evaluator 14 days after a written call, the district court would appoint a trustee who would appoint the evaluators. Before the evaluation, four evaluators had to choose a fifth trusted person as a prefect. If they could not agree, he would choose from the four.

The new paragraph is §27 (regulatory plan): “For regulating existing streets and squares, the Building Office has to make plans first …” (Spasojević, 1988, p. 175). A special regulation was defined for Čaršija in a new paragraph (§36). A new paragraph was §46 (Mansards). The former paragraph §53 (Number of floors) was reformulated in §48 as follows:

> As a rule, housing buildings should have a maximum of two floors beside the ground floor. The third floor could be allowed only in streets of the 1st and 2nd Classes, only if such a building does not damage the harmony of neighboring buildings and architectural consonance of the street perspective, or if it is not contradictory to some other local aspects [...]. As a rule, it is emphasized to have the less possible difference of building heights. (Spasojević, 1988, pp. 177, 178)

The building office may set the condition of a certain number of floors and street façade execution for obtaining building permits. Therefore, for the constructions along the Miljacka River quay (see Figure 4), the following was established:

- At the right riverbank: From the city hall to the gymnasium, two-story row buildings shall be built. If a one-story building is approved, its height should be harmonized with the existing neighboring buildings. From the gymnasium to the new Alexander’s Bridge, only one-story buildings should be built and only in parallel with the building line toward the open building type. Hence, the space in between (garden in front of the building) should be 5 m wide toward the street and 3 m wide toward the neighboring plot.

- At the left riverbank: From the Ćumurija Bridge to the Alexander Bridge, only one-story buildings shall be built with quality facades toward the Miljacka River and the gardens in front of the buildings. Archway spaces must have a minimum of 3 m height and rooms with flat ceilings with at least 2.6 m height. The courtyards of the new buildings shall be designed wide enough in terms of the building height, plot dimensions, and surrounding buildings to avoid harmful effects on the population's health. In narrow courtyards, the drain system must be designed with special attention; these courtyards must not represent fire danger if they are close to the attic or neighboring houses. The courtyards must have a size appropriate for their purpose and not less than 10 m² for naturally lit housing units and kitchens and not less than 4 m² for naturally lit toilets and corridors (Spasojević, 1988, pp. 177, 178).

Figure 4 Regulation of the Miljacka River basin *(Prstojević, 1999)*

Architect Josef Pospišil, who was the Head of the Building Chamber of Bosnia-Herzegovina, wrote about the urban regulation of Sarajevo, emphasizing the importance of "moving the city center from Čaršija toward the west" to Franz Joseph Street (the present main street of Sarajevo). Moving the city center would enable the "Occidental (Austro-Hungarian bloc system)" and the "Oriental (Baščaršija[4] with mahalas[5])" urban tissues to be separated or more exactly not to interlace. In this regard, Pospišil's critics were very severe about locating the city hall (Vijećnica) in the middle of Baščaršija (Pospišil, 1909).

The former §55 was extended in a new §50 entitled "Windows, gates, and doors." Former §68 (Sidewalks) was extended in new §63 entitled "Sidewalks, fences with more specified regulations":

The sidewalk width is for the:

- I class streets at least 2.50 m – 3 m,
- II class streets at least 2.00 m,
- III class streets at least 1.50 m,
- IV class streets at least 1.00 m,

4 Baščaršija – Sarajevo Old City, the city center, situated in the eastern part of the city, in the valley, near the river Miljacka

5 Mahala – neighborhood created in the Ottoman period, situated on slopes. In the Austro-Hungarian period, Sarajevo had 106 mahalas (Spasojević, 1988)

- V class streets at least 0.75 m,
- cul-de-sac streets 0.25 m.

The landowners are obliged to enclose their land by wooden fences, walls, according to the building site. When considering gardens in front of villas. The building office may prescribe certain fences, according to the beauty of a building. (Spasojević, 1988, p. 180)

The former chapters (§75–§82) are organized in a better way in the fourth section, when considering the institution of the building office and its competencies:

The building office shall take care of the following:

- No construction shall be executed without a valid building permit or a demand for conversion.
- The building contractors shall respect the prescribed building line and level in every part of the building plot.
- They (the building contractors) shall respect the approved executive project, or that the construction is executed according to the validated request.
- The construction shall be appointed only to certified person.
- Only quality materials shall be used for the building construction.

If the municipality finds irregularities in cases a), b) and c) it should stop the works, and in case d) it should forbid the uncertified person to perform the construction control, and in case e) it will enact removal of the inappropriate quality material from the building site. The demolition of the finished construction or finished parts of the construction shall be performed in case of illegitimate construction acknowledgment considering this building code prescriptions. In case it is prescribed in the building permit to conduct capacity construction examination, tests would be performed by the engineer in attendance of municipality representative and other uninvolved professional or permit applicant. Those tests can be performed during and after the construction. The test costs are covered by the permit applicant. (Spasojević, 1988, pp. 181, 182)

The amounts considering the building tax collection remained the same as in the previous building code. The second Sarajevo building code brought a new classification of streets and buildings into five classes, i.e., regulations on sidewalks, mansards, garden houses, and urban design of the left and right riverbanks.

The schematic representation of the building zone plan in 1879, according to the First and Second Building Codes for the State Capital Sarajevo, is represented in Figure 5, which also shows the following building zones:

- Classes I and II: Three-story buildings
- Classes III and IV: Two-story buildings
- Class V and cul-de-sac streets: One-story buildings
- Mixed building area: Two-story buildings max.
- Military areas
- Industrial buildings.

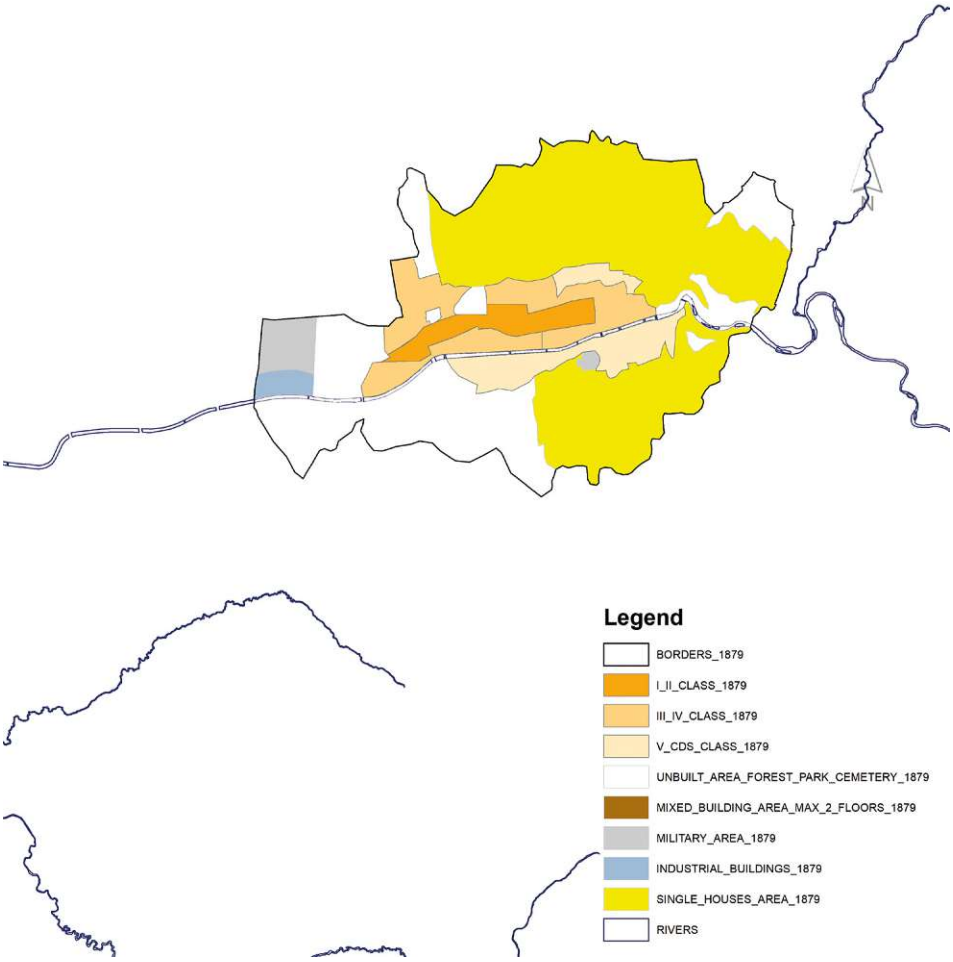


Figure 5 Schematic representation of the building zone plan of Sarajevo, in 1879, according to the First and Second Building Codes for the State Capital Sarajevo *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Sarajevo applied Austro-Hungarian land-use and construction regulations until the 1930s. Both Sarajevo building codes were written bilingually in German and in Bosnian (Figure 3). The comparison of the contents and the comparative elements of the First Building Code of Sarajevo are elaborated in Tables 1 and 2.

Table 1 Comparison of the contents of the First Building Code of Sarajevo

Content	Building Code for the Capital State Sarajevo 1880	Building Code for the Capital State Sarajevo 1893
(i)	General provisions	
(ii)	Special provisions considering street widening and regulation, expropriation, and land subdivision (parcellation)	
(iii)	Building regulations	
(iv)		Building Office, appeal, and penalty provisions

(Adapted from Spasojević, 1988, pp. 156–182)

The First and Second Building Codes of Sarajevo were founded on the ordered and regulated urban system and norms and standards for the construction of streets and buildings, particularly because of the 1879 Great Fire. Regulatory plans, even for the city center only, have been implemented through the building codes, prescribing street widths, expropriation, relation of the building height to the street width, protruding elements of a building, and urban design of ensembles next to the left and right riverbanks.

Table 2 Comparative elements of the first Sarajevo building codes

Content	Building Code for the Capital State Sarajevo 1880	Building Code for the Capital State Sarajevo 1893
City boundaries	§1	§1–§3
Obligation of issuing building permission	§1	§1
Technical documentation (Executive project)	§4, §18	§4, §15, §18
Alignment (Regulatory) line, Building line, Levelling line	§16	§13
Street classification	§23–§29 Class I: 11.25 m Class II: 9 m Class III: 7.5 m Class IV: 6 m Existing and cul-de-sac: 4 m	§23–§26, §28 Class I: 15.00 m Class II: 11.25 m Class III: 9 m Class IV: 7.5 m Class V: 6 m Existing and cul-de-sac: 4 m
Regulatory plan	–	§27

Content	Building Code for the Capital State Sarajevo 1880	Building Code for the Capital State Sarajevo 1893
Public buildings	§31	-
Outbuilding and industrial buildings	§43	§37–§38, §64–§66
Expropriation procedure	§24–§28	§24–§26
Parceling	§36–§38	§30–§32
Contractor obligations	§39	§35
Building construction	§40–§42	§36
Walls, Ceilings	§45–§52, §59	§39–§45, §54
Street width and building height relationship (number of floors)	§53 max. ground floor+3 floors for 12-m-wide streets (I class)	§48 Residential buildings max ground floor+2 floors. 3rd floor is permitted only for I and II class streets
Permissible building height	Defined according to street classification	Defined according to street classification
Minimum height and size standards for rooms	§53–§54 archway rooms min 3.00 m, flat ceiling rooms min. 2.80 m	§48–§49 archway rooms min 3.00 m, flat ceiling rooms min. 2.80 m
Courtyard design	§53	§48
Construction of new quarters	§30	§29
Fire protection and security measures	§20	§20
Openings	§55	§50
Chimneys	§56–§58	§51–§53
Roof	§60–§61	§55–§56
Corridors	§50	§44
Toilets, dwells	§65–§66	§60–§61
Protrusions and balconies	§67	§62–§38
Mansard	–	§46
Left and right riverbank design	–	§53
Fences	–	§63
Building maintenance	§72–§74	§67–§69
Institutional competencies	§75–§77	§70–§71
Building Authority	§76–§77	§70–§71
Building permission	§1–§3, §10–§11, §13	§1–§3, §10–§11, §14
Permission-free building projects	–	§2
Demolition	§77	§71

Content	Building Code for the Capital State Sarajevo 1880	Building Code for the Capital State Sarajevo 1893
Inspection supervision	§77	§71
Building use permission	§22	§22
Committee inspection	§8	§8
Penalty provisions and appeal	§78–§82	§72–§75
Tax collection	§81	§74
Final provisions	§82	§75

(Adapted from Spasojević, 1988, pp. 156–182)

2.2.3 Building Code of 1936

After the end of the Austro-Hungarian rule, Sarajevo kept the former legislation until the new set of laws and bylaws were enacted during the rule of the Kingdom of Serbs, Croats, and Slovenians or Kingdom of Yugoslavia, historically placed in the period between the two world wars. The new construction law was set, along with other rules and regulations:

- Construction law (Službeni dio narodnog jedinstva, 1932)
- Ordinance determining the cities (towns) and small towns (markets) to which the first part of the construction law shall apply (Službeni dio narodnog jedinstva, 1932)
- Code on the drafting of regulatory plans (Službeni dio narodnog jedinstva, 1932)
- General guidelines for developing a decree on the implementation of a regulatory plan and building code (Službeni dio narodnog jedinstva, 1932)
- Code on distances between buildings and private houses and other spaces in cities and towns (Službeni dio narodnog jedinstva, 1933)
- Code of building zones in cities (Službeni dio narodnog jedinstva, 1933)
- Code on the size and demarcation of construction works (Službeni dio narodnog jedinstva, 1936)
- Building code (Službeni dio narodnog jedinstva, 1936)
- Code on compensation, contribution, and tax according to §123–§125 of the construction law (Službeni dio narodnog jedinstva, 1938).

The adopted laws and regulations were uniform for all the cities in the former Kingdom listed in the Ordinance determining the cities (towns) and small towns (markets) to which the first part of the construction law shall apply (Službeni dio narodnog jedinstva, 1932), or the cities and towns within the following counties: Beograd, I. Dravska banovina (Ljubljana), II. Savska banovina (Zagreb), III. Vr-

baska banovina (Banja Luka), IV. Primorska banovina (Split), V. Drinska banovina (Sarajevo), VII. Zetska banovina (Cetinje), VIII Dunavska banovina (Novi Sad), VIII. Moravska banovina (Niš), IX. Vardarska banovina (Skopje). As mentioned before, Sarajevo was a part of the so-called Drinska banovina. Dr. Ivan Pavičić (1932) and geodesist Alfred Koš (1932) wrote in the periodical entitled Jugoslovenski List the significance of enacting a building code for Sarajevo based on the new legislative framework, which would comprehend the specificities of the city and link it to the new regulatory plan that should, upon their opinion, be produced for the whole territory of the city (Figure 6).

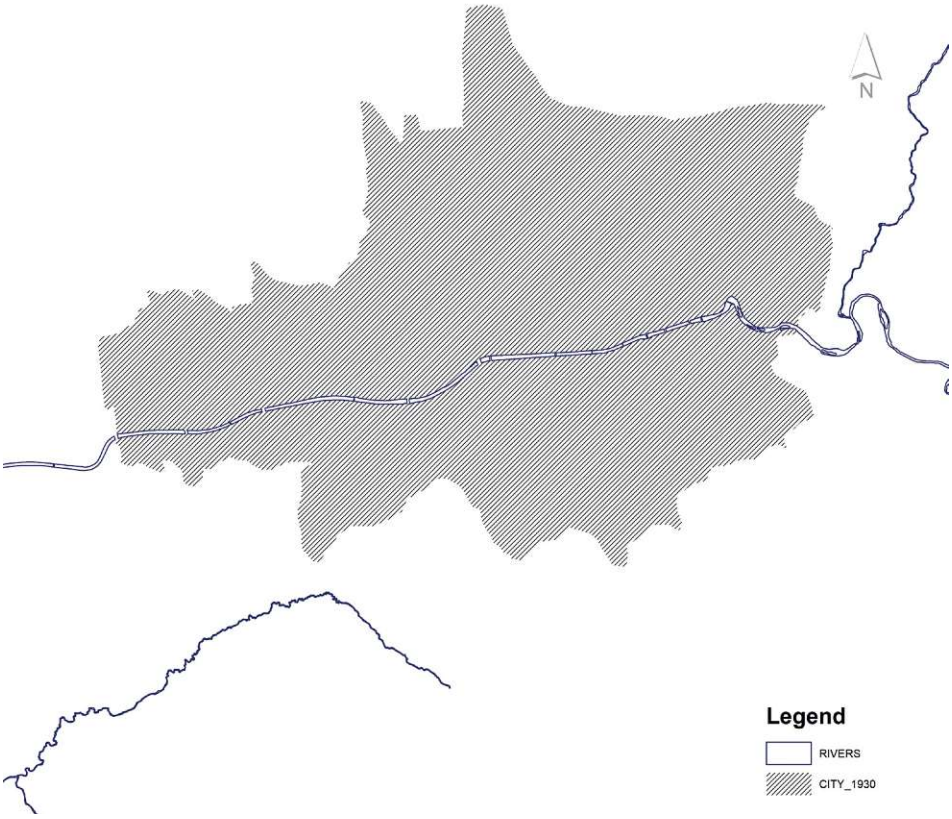


Figure 6 Sarajevo in the 1930s *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

The adopted laws and regulations were uniform for all the cities in the former Kingdom listed in the Ordinance determining the cities (towns) and small towns (markets) to which the first part of the construction law shall apply (Službeni dio narodnog jedinstva, 1932), or the cities and towns within the following counties: Beograd, I. Dravska banovina (Ljubljana), II. Savska banovina (Zagreb), III. Vrbaska banovina (Banja Luka), IV. Primorska banovina (Split), V. Drinska banovina

(Sarajevo), VII. Zetska banovina (Cetinje), VIII Dunavska banovina (Novi Sad), VIII. Moravska banovina (Niš), IX. Vardarska banovina (Skopje). As mentioned before, Sarajevo was a part of the so-called Drinska banovina. Dr. Ivan Pavičić (1932) and geodesist Alfred Koš (1932) wrote in the periodical entitled Jugoslovenski List the significance of enacting a building code for Sarajevo based on the new legislative framework, which would comprehend the specificities of the city and link it to the new regulatory plan that should, upon their opinion, be produced for the whole territory of the city (Figure 6).

Koš stressed that a very long period of time has passed since the last regulatory plan accompanied by the building code has been enacted in 1893. Koš and Pavičić wrote what is missing and what new building code should regulate (e.g., smaller plots min. of 100 m² than those prescribed in the decree i.e., min. of 300 m²), constructing new residential zones, widening of existing streets, and existing buildings, among others.

Table 3 Content of the building code of 1936

Content	Building Code of 1936
(i)	Provisions on the building site
(ii)	Provisions on the execution of buildings: 1. Technical regulations 2. Hygiene regulations 3. Esthetic provisions
(iii)	Safety provisions (buildings)
(iv)	More detailed provisions on issuing building permission, building committee, and inspection supervision
(v)	Action (commission inspection, execution, penalty measures, and appeals)
(vi)	Final provisions

Content of the building code of 1936, valid for the Drinska banovina. (Adapted from Službeni dio narodnog jedinstva, 1936)

However, the new building code with a new regulatory plan for the whole city has not been produced. Instead, a new uniform building code was adopted in 1936, which was applied to all cities and towns in the Kingdom. In comparison with the building codes adopted for Sarajevo during the Austro-Hungarian Empire, aside from the insensitivity for the city's specificities, the difference was in the classification of the building zones, definition of a building ratio, building height defined in correspondence to a building zone, definition of building distances, building design rules, rules about historic and art buildings, and protection of neighbors' rights (Tables 3 and 4).

Table 4 Elements of the building code of 1936

Content	Building Code of 1936	
Regulatory plan boundaries	§4	
Obligation of issuing building permits	§72	
Technical documentation (Executive project)	§74	
Building zones	§5	High-density area, min. plot area 300 m², front line 12 m. Mid-density areas, min. plot area 360 m², front line 14 m. Low-density areas, min. plot area 480 m², front line 16 m. Villas and residencies, min. plot area 600 m², front line 18 m. Smaller industrial buildings, min. plot area 1000 m², front line 20 m. Larger industrial buildings, min. plot area 2000 m², front line 25 m.
Built-up areas (building ratio)	§6	High-density areas 70% Mid-density areas 50% Low-density areas 30% Villas and residencies 20% Industrial residential areas 60%
Alignment (Regulatory) line, Building line, Levelling line	§80	
Residential buildings	§32–§46	
Regulatory plan	§5, §4, §5	Regulations connected with Regulatory plan (building zones: high, mid-density and law density areas)
Outbuilding and industrial buildings	§48, §49–§53 §54–§59	
Parceling	§4	
Contractor obligations	§65, §75	
Building construction	§11–§13, §15	
Walls, Ceilings	§14, §15	
Minimum height and size standards for rooms	§7	Residential buildings: basement 2.25, Subterrain and mansards 2.50 m, ground floor 3.00 m, Other floors 2.80 m, retail 3.50 m, restaurants 4 m

Content	Building Code of 1936	
Street width and building height relationship (number of floors)	§7	High-density areas max ground floor + 4 floors, in the main streets max. 5 Mid-density areas max ground floor 3 floors, in main streets max. 4 Low-density areas max ground floor + 2 floors, in main streets max. (bright height defined according to building type) Street line – the same building height
Permissible building height		Defined according to the area density classification
Distances between buildings	§8	High-density areas 3/4 of an average building height at a street front Mid-density areas 1 average building height at a street front Low-density areas 2 average building heights at a street front.
Courtyard design	§9	
Fire protection and security measures	§63–§71	
Openings	§28–§29, §36	
Chimneys	§21	
Roof	§16	
Staircases	§19	
Corridors	§20	
Toilets, dwells	§38–§39, §40, §42	
Protrusions and balconies	§23–§24	
Building design	§60	
Fences	§61	
Historic and art buildings	§62	
Protection of neighbor rights	§67	
Institutional competencies	§76–§78	
Building Council	§76–§77	
Building permission	§72–§73, §79	
Permission-free building projects	§73	
Demolition	§78	
Inspection supervision	§78, §81	
Building use permission	§82	
Committee inspection	§83	

Content	Building Code of 1936
Penalty provisions and appeal	§85–§86
Tax collection	§78
Final provisions	§87–§88

Elements of the building code of 1936 valid for the Drinska banovina. (Adapted from Službeni dio narodnog jedinstva, 1936)

The schematic representation of the building zone plan of Sarajevo in 1930 (Figure 7) was compared to the schematic representation of the building zone plan in 1879. According to the First and Second Building Codes for the State Capital Sarajevo (Figure 5), the city and urban core area grew not only toward the west but also toward the north. The idea to model the urban core area in a sense that higher and more representative buildings and wider streets are in the center and military and industrial areas are in the city outskirts remained in the Austro-Hungarian building codes. The difference in the new building code when compared to the Austro-Hungarian ones is its insensitivity for local contexts. There are no paragraphs about Baščaršija or buildings along the riverbanks. The code is uniform for the whole county and whole country.

There is no classification of streets and buildings, but there are building zones, in the new classification:

- Main streets: five-story buildings
- High-density neighborhoods: four-story buildings
- Mid-density neighborhoods: three-story buildings
- Low-density neighborhoods: two-story buildings
- Mixed building area: four-story buildings max.
- Unused areas, forests, parks, and cemeteries
- Military areas
- Industrial buildings.

Architect Muhamed Kadić wrote 10 articles for the newspaper Sarajevski Novi List (Sarajevo newspaper) between 1941 and 1942. In those articles, he thought a wider audience about city's development, considering housing, informal settlements, cultural heritage, traffic, green areas, sport areas, and bath areas, among others, and he underlined the "urgency" for creating a new regulation basis for the city's development (Kadić, 1941). The author pointed out that it is crucial to have a regulation for the whole city, rather than to correct mistakes caused by so-called unplanned construction.

Although a regulatory framework existed, sociopolitical and economic circumstances between the two world wars did not enable the city to develop a new vi-

sion in the form of a zoning and regulatory plan for the whole urban territory, which would be associated with a building code tailored for Sarajevo. In this historical moment, Sarajevo lost keeping pace with Vienna and Paris that already in the 1930s had their first general urban plans accompanied by building codes/orders. Sarajevo will have its first general urban (land-use) plan only in 1965, and the building code of 1936 will remain remembered in the history as a very generic and the last one.

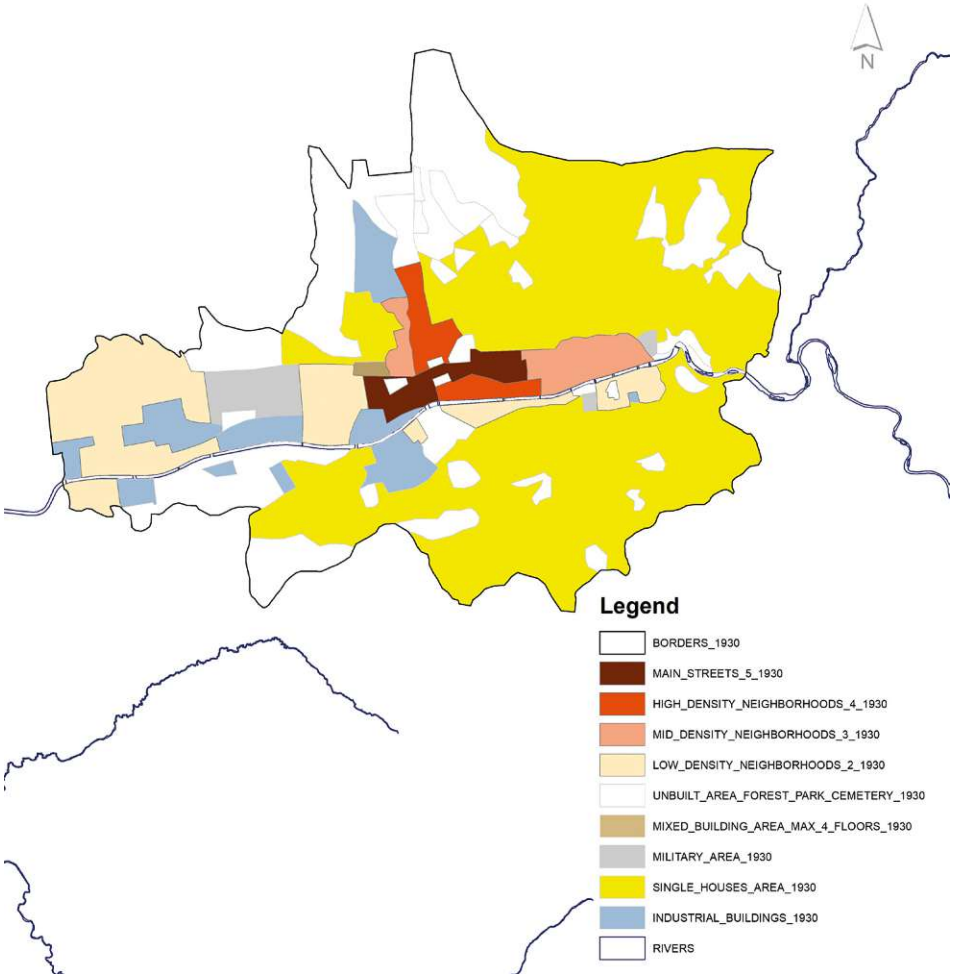


Figure 7 Schematic representation of the building zone plan of Sarajevo in 1930 *(Archive of Bosnia-Herzegovina, Pelja-Tabori, own presentation)*

2.3 Absence of a Building Code in Sarajevo after the Second World War

Bosnia-Herzegovina (BiH) became a part of the Socialist Federal Republic of Yugoslavia (SFRY) after the Second World War. The SFRY was established as a federal state of six republics, among which was the Socialist Republic Bosnia-Herzegovina with its capital Sarajevo. One of the first assignments of the new government was to make a legislative base for huge reforms of the society, a rapid transition from capitalism to socialism:

> Shortly after the Second World War cities of Federative People's Republic Yugoslavia devastated by the war were reconstructed upon pre-war regulations not contradictory to national liberation war inheritance, as well as decisions of municipality national councils and ad hoc instructions and commandments of the republic institutions. Afterwards new legal regulations were promulgated. (Antić et al., 1966, p. 610)

Among the first adopted laws were the following:

- Agrarian Reform and Colonization Law of 1945
  Its goal was to abrogate all big holdings, regardless if they were managed in a capitalistic way or if they were for rent. It included the expropriation of banks, shareholder societies, firms, churches, abbeys, synagogues, and mosques and taking away excess land from wealthier peasants or those who possess land but do not farm their land. It regulated having a maximum of 35 ha of farmed land per agrarian.
- Workers' Self-Management Law
  During the Second World War, the "Soviet Union Model State Socialism" was promoted in Yugoslavia, but after the Tito–Stalin split after 1948, Yugoslavia searched for new models, and one of them is "workers' self-management." This meant the transition of work organization from the state level to working teams or units.

The two laws are the legislative basis for planning regulations and documents. SFRY had three government levels: federative/national, republic, and local level. The legislative framework in spatial planning followed a government hierarchy. Four years after the liberation, the basic decision on the general Land-use Plan (GUP) was introduced on the national level, accompanied by the basic construction law, law on expropriation, and other laws listed (Table 5). On the republic level, BiH adopted a law on Land-use Plan of the PR Bosnia-Herzegovina, a rulebook on the mandatory elements of the decision of municipality people's council, which replaced the Land-use Plan of 1961 and law on determining building land areas (see Table 5).

Table 5 Spatial Planning Legislation of the Federative People's Republic Yugoslavia in the period 1945–1965

Governmental Level	Name and No. of official gazette	Law
Federal	FPRY Official Gazette no. 78/949	Basic decision on the GUP
binding on the republic level	FPRY Official Gazette no. 12/957	Expropriation law
	SFRY Official Gazette no. 15/65	Law on the application of regulations of the basic construction law in financing sociopolitical communities to funds for residential construction
	SFRY Official Gazette no. 10/65	Basic law on the contribution to the utilization of building land
	FPRY Official Gazette no. 52/958, amended SFRY Official Gazette no. 1/65	Law on the nationalization of lease buildings and building land
	SFRY Official Gazette no. 13/65	Basic water law
	SFRY Official Gazette no. 9/65	Basic railway construction law
	SFRY Official Gazette no. 30/65	Laws on air protection from pollution
	SFRY Official Gazette no. 16/65	Flood protection law
	SFRY Official Gazette no. 24/65	Law on nature protection
	FPRY Official Gazette no. 45/1961, amended SFRY Official Gazette no. 5/65	Basic law on the construction of investment buildings
	FPRY Official Gazette no. 12/961	General law on public roads of 1961
	SFRY Official Gazette no. 39/64	Temporary technical regulations for construction in seismic areas
Republic	PRS Official Gazette no. 27/958	Law on additions to buildings in PR Serbia from 1958
	PRS Official Gazette no. 51/959	Law on district and municipality areas in PR Serbia from 1959
	SRS Official Gazette no. 27/65	The Executive Council of SRS Decision to determine cities and settlements with the urban character for the nationalization of building land on the territory of SR Serbia (1959)

Governmental Level	Name and No. of official gazette	Law
	PRS Official Gazette no. 7/961, amended SFRY Official Gazette no. 14/65	Law on conditions for residential buildings construction in villages (and suburbs) in SRS
	SRS Official Gazette no. 47/961	Law on nature protection in SR Serbia from 1961
	PRS Official Gazette no. 51/959, amended SRS Official Gazette no. 15/65	Law on cultural heritage monument protection
	L.LRS Official Gazette no. 13/956	Land-use Planning and Construction Law in LR Slovenia
	L.SRS Official Gazette no. 21/64	Land-use inspection law
	SRM Official Gazette no. 7/65	Decisions on determination of settlements
	SRM Official Gazette no. 7/65	Land-use Planning Law in PR Macedonia
	PRBiH Official Gazette no. 41/959, amended SRBiH Official Gazette no. 4/65	Law on land-use plan of PR Bosnia-Herzegovina (1959)
	PRBiH Official Gazette no. 41/1961, amended SRBiH Official Gazette no. 35/65	Rulebook on the mandatory elements of the decision of the municipality people's council, which replaces the Land-Use Plan of 1961
	SRBiH Official Gazette no. 41/64	Law on determining building land areas
	People's Gazette no. 21/1960, amended no. 46/64	Land-use and regional spatial planning law in PR Croatia from 1960
	People's Gazette no. 41/61	Decree on the implementation of the law on land use and regional spatial planning from 1961
	PRS Official Gazette no. 47/1961, amended SRS Official Gazette no. 30/65	Land-use and regional spatial planning law in SR Serbia from 1961

(Adapted from Antić, D. et al., 1966)

The land was nationalized, which was the first precondition to the so-called social planning. This was the reason for creating republic social development plans for the five-year period (see Table 6). Social plans were basically programs for spatial and land-use plans, which set sectoral programs for housing, regulation of building land, construction of infrastructural systems, transport development, construction of industrial buildings, construction of urban equipment, environmental protection, and investments and presented guidelines for accomplishing the so-

cial development plan (see Table 6). The republic social development plans were accompanied by midterm programs for regulating building lands, which were also created for a five-year period. Local social plans and programs followed the goals of the republic ones. Midterm local social plans were defining guidelines and measures for achieving social and land-use plans. We can follow the republic social plans from 1965 till 1990 (Table 6) and the local social plans from 1959 till 1990 (Table 7) in the Yugoslav spatial planning legislation.

Table 6 Legislation in the town planning of the Socialist Republic Bosnia-Herzegovina in the period 1965–1990 on the republic level

Name and No. of official gazette	Law
SRBiH Official Gazette no. 25/66	Social development plan of RBiH for the period 1966–1970
37/66	Laws on public roads
7/68 and 14/72 amended 10/73	Water Law
32/71	Amendments of the law on determining building land areas
36/71	Law on communal taxes
23/72	Social development plan of RBiH for the period 1971–1975
35/72	Expropriation law
16/73	Law on state survey and cadastres
13/74	Spatial Planning Law
13/74	Law on residential tenancy
13/74	Law on building land in social ownership
14/74	Law on re-parceling (comassation)
29/74	Laws on amortization of roads
29/74	Law on amortization of residential buildings in social ownership
30/74	Law on housing cooperatives
42/75	Basic policies for the long-term development of SRBiH until 1985
36/75	Water law
38/71 amended 40/78	Woods law
2/75	Decision on drafting the RBiH Spatial Plan
24/76	Social development plan of RBiH for the period 1976–1980
37/76	Law on protection from natural disasters
19/77	Expropriation law
33/77	Law on self-contribution
3/78	Law on protection and use of cultural and natural heritage

Name and No. of official gazette	Law
6/78	Law on farm-land consolidation (arrondation)
6/78	Laws on public roads
11/78	Woods law
14/78	Law on state survey and cadastre
14/78	Law on maritime fisheries
16/78	Law on electrical industry
18/78	Law on social planning system and RBiH social plan
23/79	Law on property rights in commercial buildings and building parts
35/79	Laws on geological surveys
13/80	Laws on mining
11/81	Social development plan of RBiH for the period 1981–1985
4/81	Law on census of population, households, and dwellings in 1981
30/74, amended 28/81, 2/82	Laws on fire protection
18/82	RBiH spatial plan for the period 1981–2000
5/82	Law on revalorization of residential buildings and apartments in social ownership
14/84	Law on residential tenancy
38/85	Long-term social development plan of RBiH for the period 1986–2000
39/85	Social development plan of RBiH for the period 1986–1990
24/86	Law on re-parceling (comassation)
34/86	Laws on building land
34/86	Spatial Planning Law amendments
12/87	Expropriation law
32/87	Law on freshwater fisheries
25/88	Law on demarcation odd far-land areas and economic policy measures for faster development of agricultural production in mountain region incentives
26/89	Law on joint property in residential apartments
26/82 amended 44/89	Law on republic fund for credit financing of faster economic development of poorly developed areas
15/90	Spatial Planning Law amendments

(Adapted from Institute for Canton Planning Archive)

Social plans were accompanied by spatial and land-use plans (Figure 8). Antić et al. stated the following:

> Regulations in the above-mentioned republics were coherent with the general guidelines defined by the federal decision on the GUP in 1949. All republic laws treated land-use in the same manner in relation to the processes of creating land-use plans: Land-use Program, GUP, detailed land-use plan, and regional plans. (Antić et al., 1966, p. 613)

The republic spatial plan was derived from the national sectoral plans, followed by the spatial and land-use plans of a city. Development plans, such as regulatory plans, were based on zoning plans or city land-use plans. The socialist spatial planning system was established hierarchically and well-defined with planning instruments from the national to municipal level, and clear measures for mobilizing a building land for new socialist neighborhoods built for “the workers” by the state. Private investments and private land were not in the focus of the socialist spatial planning system.

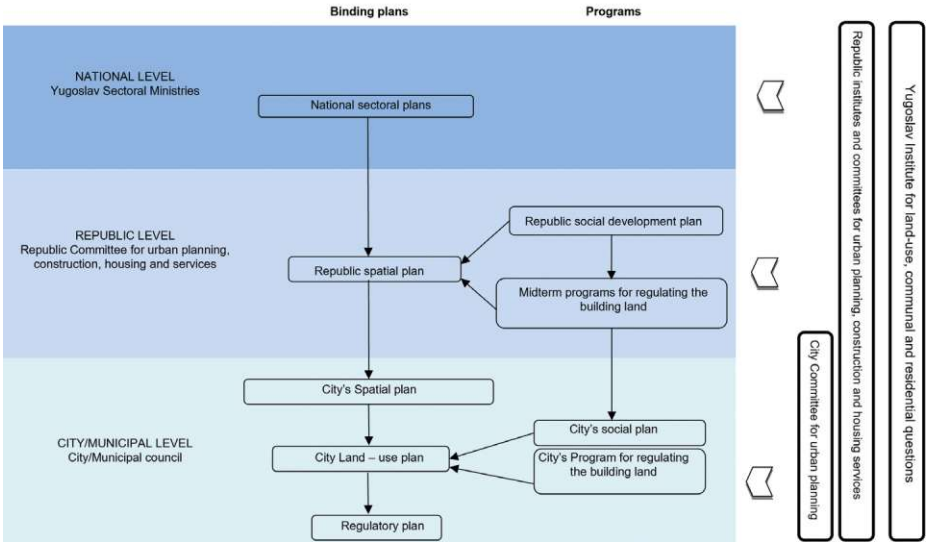


Figure 8 Spatial planning documentation in the period of the Socialist Federal Republic Yugoslavia *(Institute for Canton Planning Archive, Pelja-Tabori, own presentation)*

After the liberation, the Sarajevo population had around 120,000 inhabitants since the agrarian reform encouraged population migrations from the villages and small towns to move to the capital city. These migrations caused a housing crisis and the urge to improve city networks and facilities rapidly. Local programs for the City of Sarajevo defined activities for the local construction institute regarding preparation and equipment with communal buildings and infrastructure and indi-

vidual installations of the building land. The first Five-year Social Plans for Sarajevo County were performed shortly after the liberation, in compliance with the republic social development plans and national sectoral policies. The program for regulating the building land was adopted each year, and it had to follow the Five-year Social Plans (Table 7). Two-thirds of the total predefined works by the local programs for regulating the building land in Sarajevo were conducted in new residential areas with collective residential buildings. One-third of the predefined works were executed for the construction of schools, kindergartens, clinics, and rehabilitation of residential buildings. In parallel with the Bosnia-Herzegovina Utility Management Institute creating the first regulatory plan for the whole city in 1947, which was "only a start of an unfinished work" (Oslobođenje, 1947), the discussion about Sarajevo's future developments became public because a considerable number of professionals published their thoughts and visions. In public discussions, architects Kovačević, Kadić, Finci, and Taubman discussed urban issues in Sarajevo, emphasizing the urge for planned development. Taubman concluded in his article in the periodical Pregled (Review) that Sarajevo is, in an urban sense, an unordered city (Taubman, 1948, pp. 115–127). The program for the first GUP was performed from 1952 till 1953 (Urbanistički zavod grada Sarajeva, 1960). At the same time, architect Jahiel Finci realized that "people should be involved in creating plans, and it should not be purely a 'professional's' task" (Finci, 1946, p. 14). He wrote in 1955 that the administrative territory of Sarajevo was divided in five areas (composed of 404 register circles)[6]: The City (composed of 330 register circles), Ilidža, Hrasnica, Vogošća, and others.

Finci made a detailed survey of existing housing funds, concluding that a major part of Sarajevo's housing buildings were one-story buildings, mostly built of light materials, unequipped properly with installations, with relatively high death rates from tuberculosis, especially in neighborhoods situated on the northern slopes of the Trebević Mountain and the left river Miljacka bank – known as a humid area (Finci, 1955).

In 1957, the first Construction Decision for Sarajevo County was adopted: "until the adoption of the general land-use plans, this decision regulated basic urban planning and construction principles for the city area." This document was, in its content, remarkably similar to the building code (Tables 8 and 9), yet it did not have the power of a law, nor was accompanying any plan.

According to the 1961 census, the city grew rapidly to 213,101 inhabitants (Urbanistički zavod grada Sarajeva, 1961). In 1965, the GUP was adopted (Figure 9), but it was not accompanied by the new construction decision or a construction law.

6 Register circles are united territories established for census (in use until nowadays)

Table 7 Spatial planning legislative of the City of Sarajevo in the period 1957–1990 on the city level

Name and No. of official gazette	Law
City of Sarajevo Official Gazette no. 2/57	Social plan of Sarajevo County for 1957
4/59	Social plan of Sarajevo County economic development for the period 1957–1961
11/57	Decision on construction and issuing building permits for residential and industry buildings in populated areas
3/58	Social plan of Sarajevo County for 1958
4/62	Decision on compensation for expropriated farmland and undeveloped land in 1962
1/62	Decision on the program for land-use plan for a single area of the City of Sarajevo
7/62	Decision on establishing the land-use bureau
Amended 10/62	Decision on compensation for previous owners, non-farmers, of the nationalized land
11/57, amended 574/59 and 12/61	Construction decision
5/65	Decision on the GUP of the City of Sarajevo (1965)
5/65	Decision on contribution for the use of urban lands
11/65	Decision on the value of residential buildings, apartments, and commercial spaces redefining in the area of the City of Sarajevo
4/66	Decision on amortization of residential buildings, regulations for maintenance, and max. rent amounts
4/66	Decision on compensation for nationalized land to previous owners
12/67	Decision on arrangement and terms of use of the building land
8/71	Decision on determining the program for regulating the building land in 1971
8/71	Conclusion on the adjustment of the buildings with no permit and land-use regulations and land
4/72	Decision on determining the program for regulating the building land in 1972
2/72	Decision on adopting the program for construction and spatial development of the City of Sarajevo for the period 1981–1985
12/74	Decisions on the recovery of informal settlements
12/74	Decision on adopting the recovery program of the slope areas in the City of Sarajevo

Name and No. of official gazette	Law
26/78	Basis for the spatial plan of specific features for the XIV Olympic games
30/81	Program for regulating the building land in 1981
18/81	Social plan for the City of Sarajevo for the period 1981–1985
21/82	Decisions on general technical conditions for the design and construction of residential buildings and apartments
26/82	Decision on the preparation of long-term social plans of the City of Sarajevo
14/83	Decision on amendments of the GUP of the City of Sarajevo
7/84	Program for regulating the building land in 1984
7/84	Residential building construction plan for 1984
1/85	Program for regulating the building land in 1985
5/86	Social plan for the City of Sarajevo for the period 1986–1990
7/86	City of Sarajevo spatial plan for the period 1986–2015
2/87	Resolution on the policy of achieving the social plan for the City of Sarajevo for the period 1986–1990 in the year 1988
4/90	Land-use Plan for Sarajevo urban territory for the period 1986–2015 (Municipalities: Stari Grad, Centar, Novo Sarajevo, Novi Grad, Ilidža, and Vogošća) Land-use Plan for Hadzići urban territory for the period 1986–2015 Land-use Plan for Ilijaš urban territory for the period 1986–2015 Land-use Plan for Trnovo urban territory for the period 1986–2015 Land-use Plan for Pale urban territory for the period 1986–2015
10/89	Decision on accessing the amendments of the City of Sarajevo spatial plan for the period 1986–2000/2015
21/89	Decision on accessing the spatial plan of the distinctive feature area of accumulation of Bijela Rijeka for the period 1986–1990

(Institute for Canton Planning Archive, Pelja-Tabori, own presentation)

A new building code was not even mentioned, probably because Sarajevo's urban development was placed in a wider East European and Yugoslav legislative context, which implied:

- Reconstruction based upon pre-war regulations if not contradictory to national liberation war inheritance and decisions of the municipality's national councils and ad hoc instructions and commands of the republic institutions.
- Urge to create new spatial planning legal regulations in line with the new sociopolitical order.

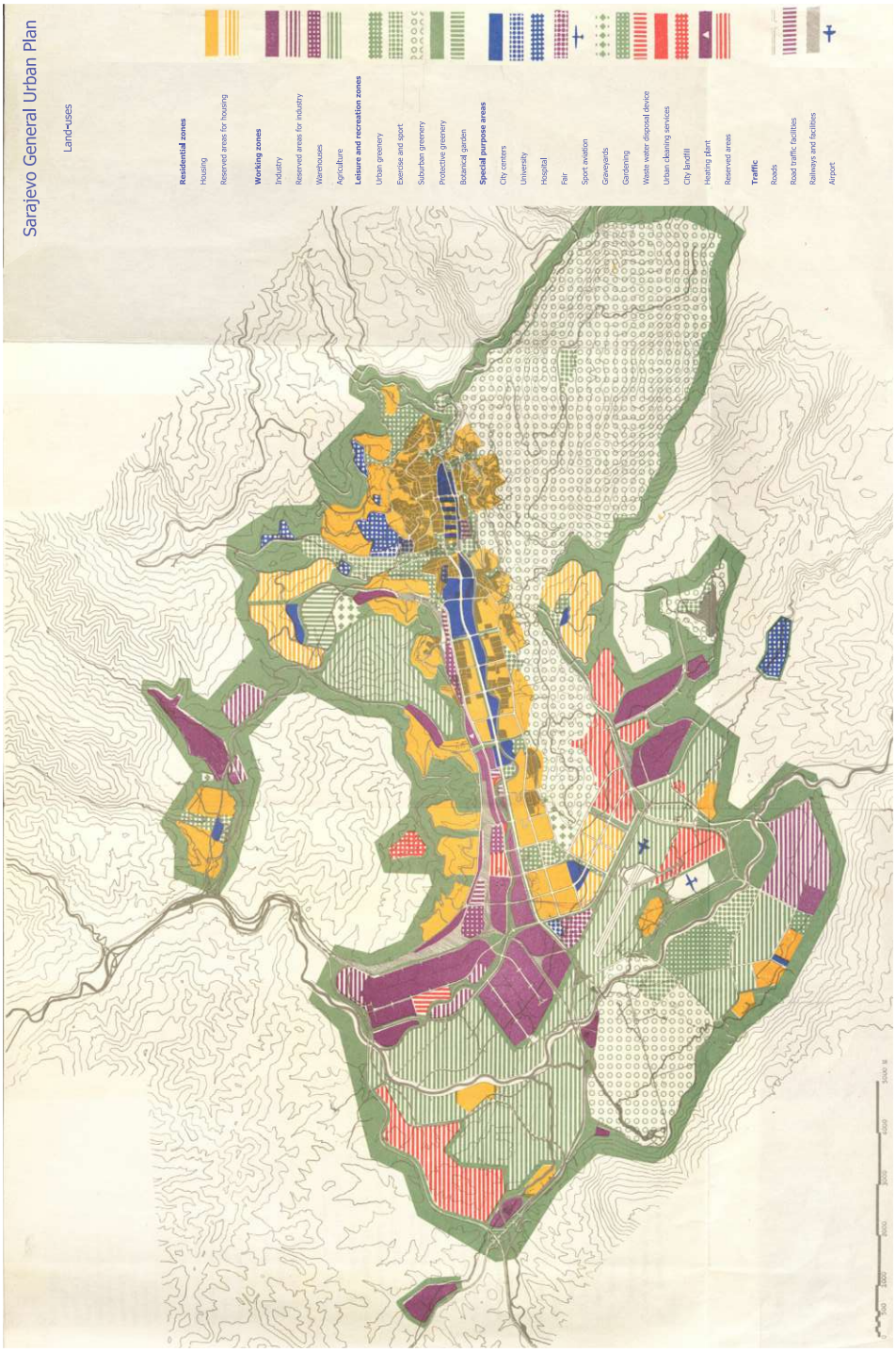


Figure 9 Sarajevo's general Land-use Plan (GUP), 1965 *(Adapted from Institute for Canton Planning Archive)*

The new building code was not a part of a new sociopolitical order because it dealt with private properties and relations established between private and public landowners. In 1974, the first Spatial Planning Law and law on building land in social ownership were adopted. The Spatial Planning Law (Službeni list SRBiH, 1974) officially introduced a spatial system in which the construction is a function of plans and land policy (Table 8).

Table 8 Content of the Construction Decision for Sarajevo County (1957) and the Spatial Planning Law (1974)

Content	Construction Decision for Sarajevo County 1957	SRBiH Spatial Planning Law 1974
(i)	Buildings	General provisions
(ii)	Building area (wider area and core area of the city) Residential areas	Basis of urban planning and spatial organization
(iii)	Industry Thermal, recreation, sports, and green areas	Environmental protection and improvement
(iv)	Building plots	Spatial planning
(v)	Building ratio Alignment line	Parcellation and building land arrangement
(vi)	Building sites	Building permission
(vii)	Population density Commercial area of a building Building height	Residential areas and building construction
(viii)	Distance between buildings Sidewalks Construction in a courtyard Protrusions Opening Canalization Installation Mailboxes Fences Architectural design of a building Temporary buildings Building in phases Building additions Construction in a wider city area Location (location approval) Urban permission Council for Urban Planning Administrative measures	Institutions and stakeholders
(ix)	Penalty measures	Penalty provisions
(x)	Transitional and final provisions	

(Adapted from Construction Decision for Sarajevo County (1957) (Službeni glasnik sreza Sarajevo, 1957) and the Spatial Planning Law (1974) (Službeni list SRBiH, 1974))

The law defined permissible land uses (building lands, farmlands, water areas, protected and recreation areas, transportation areas, infertile lands, and areas for other purposes) and accompanied zoning and development plans with a building regulation or the so-called “four building regimes.” In the absence of a building code, building regimes defined zones of construction related to distinct types of plans. It made the building permit procedure rather complex and dependent on a wide range of plans, all applicable for precise plots. Therefore, a building ban was implemented for areas significant for future development and where it is forbidden to build, albeit maintenance is allowed. Building regulations for the priority construction areas and areas of intensified construction in the first-degree and second-degree building regimes were defined by the urban project (in a scale of 1:500) and regulatory plan (1:1,000). For areas not covered with regulatory plans in the third-degree building regime, building regulations were defined upon the GUP (1: 5,000) or land-use order (1:1,000). In the areas with low interest for construction or in the protected areas, for which there is no adopted GUP or land-use order or spatial plan of the core area (1:25,000), building regulations were directly defined through the urban permit. The law-defined protected areas; natural monuments and cultural heritage areas; soil, air, and water protection; farmlands, woods, seacoasts; lake sides and riverbanks; protection of urban standard (water supply, minimal communal infrastructure, defined building ratio, mandatory conditions for pedestrian and vehicle traffic, waste disposal, and noise protection); and protection from natural disasters and war actions (Table 9). The law-defined spatial planning documentation and processes of the preparation, drafting, and adoption and binding elements of plans. It defined the building land, building land use, and compensation for building land use, urban and building permits, building programming and arrangement, technical documentation, construction, institutions involved in spatial planning processes (sociopolitical communities, documentation services, community for spatial planning, and associated work organizations), penalty clause, and transitional and final provisions (Table 9).

Table 9 Comparative elements of the Construction Decision for Sarajevo County (1957) and the Spatial Planning Law (1974)

Content	Construction Decision for Sarajevo County 1957	SR B&H Spatial Planning Law 1974
Building region (urban core area and waster city area)	§1, §4	-
Urban areas and areas beyond them	-	§8
Obligation of issuing building permits	-	§214

Content	Construction Decision for Sarajevo County 1957	SR B&H Spatial Planning Law 1974
Building and land policy based on plans	-	§2
Technical documentation	-	§204–§213
Building zones	§3, §5 Residential areas, industrial areas, thermal, recreation, sports, and green areas §14 High-density areas >400 persons per hectare Mid-density areas 100–400 persons per hectare Low-density areas < 100 persons per hectare	-
Permissible uses	-	§4 Building lands Farmlands Water areas Protected and recreation areas Traffic areas Infertile land and areas for other purposes
Built-up areas (building ratio)	§10 High-density areas 50% of the plot must remain unbuilt Mid-density areas 60% Low-density areas 70%	§84, §166
Building régimes	-	§7; see p. 70 First degree Second degree Third degree Fourth degree
Alignment (regulatory) line, building line, and levelling line	§10, §25, §35, §45	§166, §173
Street classification	Class I: area of 100 m from the road axis Class II: area of 80 m from the road axis Class III: area of 60 m from the road axis Class IV: area of 40 m from the road axis Railway: area of 75 m from the edge of the railway Water area: 75 m from each riverbank	-

Content	Construction Decision for Sarajevo County 1957	SR B&H Spatial Planning Law 1974
Land-use solution	§6	-
Content of spatial plan	-	§98–§103
Content of the spatial plan of areas with special features		§38–§39 (Amendments 1986)
Content of land-use plan	-	§104–§107
Content of land-use order	-	§108–§109
Content of regulatory plan	-	§110–§114
Content of urban projects	-	§111
Content of parcellation plan	-	§139
Plan amendment	-	§127
Professional opinion	§6	-
Outbuilding and industrial buildings	-	§10
Expropriation procedure	-	§134–§137
Building land utilization	-	§148–§145
Compensation for building land utilization	-	§156–§162
Building land regulation (preparation and equipment) of land	-	§142–§147
Parceling	§7–§11	§138
Regulating building land (preparation and equipment)	-	§142–§147
Building land utilization	-	§148–§155
Contractor obligations	§13	-
Socialist-associated labor unions as contractors	-	§217
Walls, ceilings	§38–§39	-

Content	Construction Decision for Sarajevo County 1957	SR B&H Spatial Planning Law 1974
Permissible building height	§16–Not defined precisely	-
Distances between buildings	§17–§18 Four-story buildings: 12 m Three-story buildings: 10 m Two-story buildings: 6 m	-
Courtyard design	§23–§24	-
Installations/ infrastructure	§29–§33	§28–§31
Environmental protection	-	§33–§82 Protection of historical heritage areas Soil and hazardous area protection Water protection Air protection
Urban standard protection	-	§83–§89 Water supply, minimal communal infrastructure, defined building ratio, mandatory conditions for pedestrian and vehicle traffic, waste disposal, and noise protection
Protection from natural disasters and war actions	-	§90–§92 Construction of shelters, Spatial organization of residential areas Standardization of road dimensions, including spatial organization of infrastructure buildings Isolation of hazardous industrial areas from residential areas Spatial organization of health care and fire protection buildings, Defining building ratio, distances between buildings, other urban and technical standards
Development planning documentation	-	Republic spatial plan City spatial plan City land-use plan Land-use order Regulatory plan
Construction of buildings and neighborhoods	-	§199–§203 Building and regulation programming

Content	Construction Decision for Sarajevo County 1957	SR B&H Spatial Planning Law 1974
Constructions according to technical norms and standards		§215 not defined precisely
Fire protection and security measures	-	See Environmental protection
Protrusions and balconies	§25–§26	-
Mansards	§46	-
Building ban	§49	§7, §13
Building design	§40	-
Advertisements	§41	-
Temporary buildings	§42	§172
Building in phases	§43	-
Additions	§44	§214
Building in waster city area	§47–§49	See Building régimes
Location permission	§50–§55	-
Planning/urban permission	§6, §59–§60	§163–§185
Sidewalk classification and construction	§19–§22	-
Fences	§35–§37	-
Historic and art buildings	-	See Environmental protection
Institutional competencies	§61–§68	§244–§272
Advisory Council for Urban Planning	§61–§63	-
Committee for spatial planning and environmental protection	-	§244–§245
Building permission	§12	§191–§2013
Demolition	§67–§68	§229–§232
Inspection supervision	§64–§66	§246–§259
Building use permission	-	§225–§ 243

Content	Construction Decision for Sarajevo County 1957	SR B&H Spatial Planning Law 1974
Committee inspection	-	§225–§243
Penalty provisions and appeal	§69	§273–§ 278
Final provisions	§70–§72	§279–§ 288

(Adapted from Construction Decision for Sarajevo County (1957) (Službeni glasnik sreza Sarajevo, 1957) and the Spatial Planning Law (1974) (Službeni list SRBiH, 1974))

In 1977, four suburb municipalities were integrated into the city: Pale, Trnovo, Hadžići and Ilijaš, while two existing city municipalities i.e., Centar and Novo Sarajevo, were transformed into four, i.e. Stari Grad, Centar, Novo Sarajevo, and Novi Grad, and with Vogošća and Ilidža, forming ten municipalities that created the territory of the City of Sarajevo, encompasing 2,096 km^2 (see Figure 10).

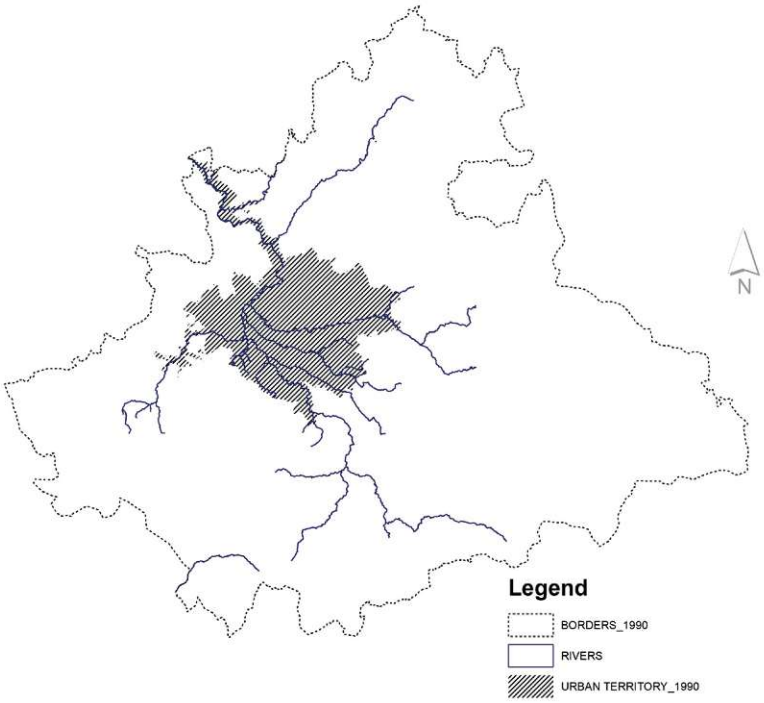


Figure 10 Urban territory and the boundaries of the city of Sarajevo in 1990 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

In the 1980s, when a serious discussion on the spatial planning system in Sarajevo began in the academic circles, a building code had been labelled as rigorous and bureaucratically narrow-minded, probably because it represented “imperial occupation heritage,” but it was at the same time admired for being respected

and implemented and for its extreme importance in preventing violations of public interest. However, the socialist economy and constitution obviously did not realize the urge to introduce such a law and remained with the building permit procedure as a function of the spatial planning law.

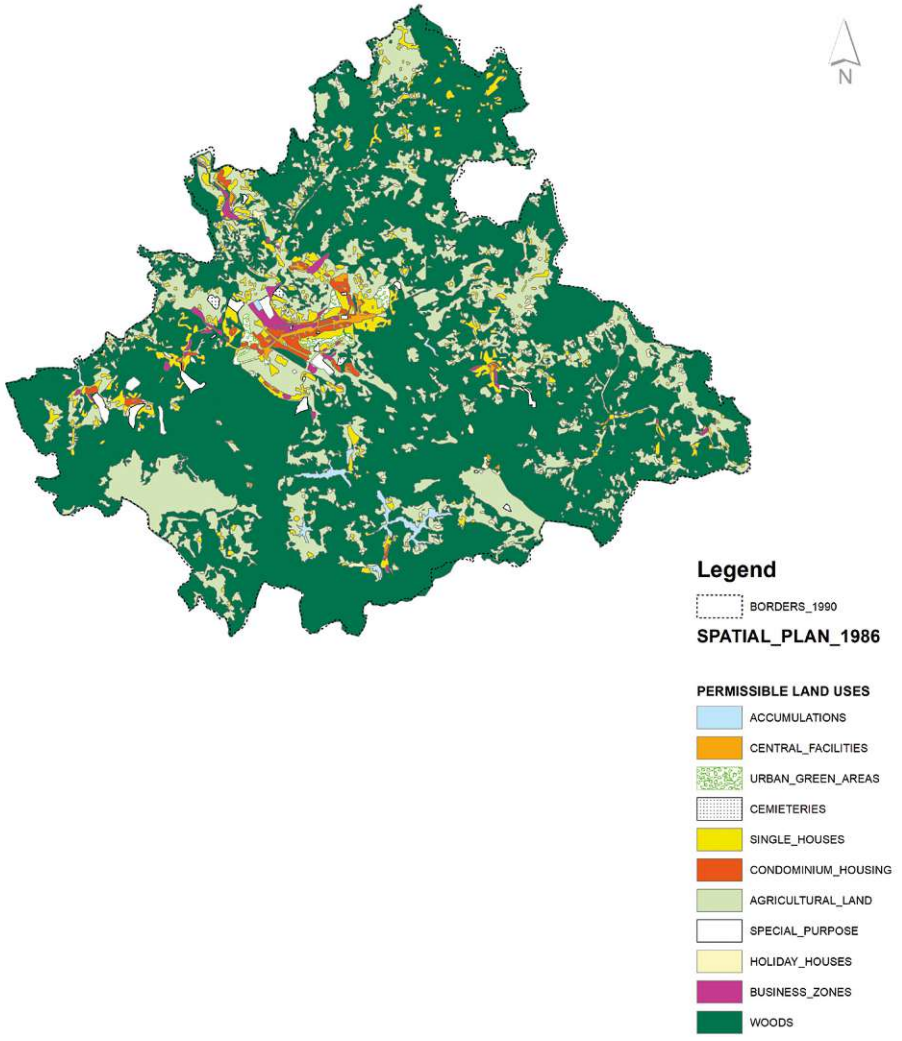


Figure 11 City of Sarajevo Spatial Plan for the period 1986–2015 *(Institute for Canton Planning adapted from Službene novine grada Sarajeva, 1986)*

The Republic Spatial Planning Law was amended in 1986 and 1990 due to the adoption of the City of Sarajevo Spatial Plan for the period 1986–2015 (adopted in 1986) (Figure 11) and the City of Sarajevo Land-use Plan for the period 1986–2015 (adopted in 1990) (Figure 12).

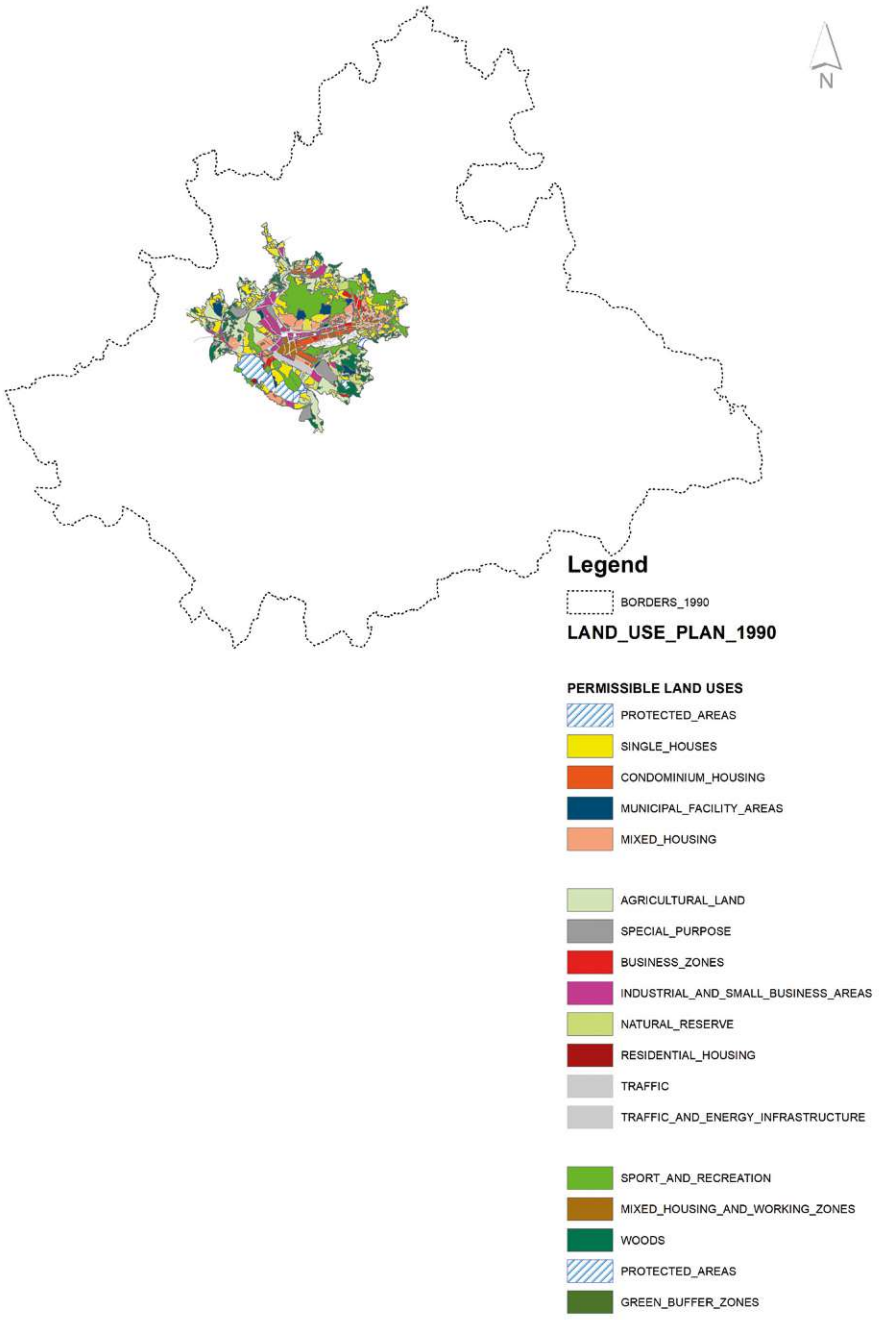


Figure 12 City of Sarajevo Land-use Plan for the period 1986–2015 *(Institute for Canton Planning adapted from Službene novine grada Sarajeva, 1990)*

The amendments of the law, among others, prescribed a mandatory building ratio <1 for residential areas (§66) in compliance with the same provisions for residential areas in the City of Sarajevo Land-use Plan for the period 1986–2015.

The city grew in its population from a city with 78,000 inhabitants before the Second World War to a city with 527,049 inhabitants in 1991 and expanded its territory almost seven times in half a century from 1941 to 1991 (Federalni zavod za statistiku, 2019).

A strong dichotomy exists between Sarajevo's spatial planning legislation and planning implementation during this period due to the following reasons:

- Rapid city expansion, which was caused by industrialization
- Uncontrolled urban sprawl caused by the first informal settlements (Jugoslovenski institut za urbanizam i stanovanje Beograd i Zavod za prostorno planiranje razvoja grada Sarajeva, 1985)[7]
- Lack of planning implementation instruments, especially regarding lands used by private users.

Once again, the adoption of zoning plans (spatial plan and land-use plans) came with a huge gap of almost 30 years from the adoption of the GUP and only a year before the dissolution of Yugoslavia and the beginning of the war in Bosnia-Herzegovina, which weakened spatial and land-use plans implementation.

2.4 Attempts for Standardization

In 1976, the City Assembly attempted to create a set of rules, although only for the community housing in the form of the decision on general technical conditions for the design and construction of residential buildings and apartments (Službene novine grada Sarajeva, 1976, pp. 332–378). The decision consisted of seven sections: spatial conditions for buildings; construction elements; finishing and equipment of common parts of building; sanitary and technical specifications for buildings and apartments; installations; allowed dimensional variance; and residential buildings and apartment element lifetime in relation to starting and maintenance costs. This decision positively affected the quality of new residential buildings and neighborhoods.

Shortly after the adoption of the decision on general technical conditions for the design and construction of residential buildings and apartments by the City Assembly, the Institute for Architecture, Urban, and Spatial Planning of the Faculty of Architecture in Sarajevo in 1978 published the Project of Research and organization of drafting the urban norms for residential areas (Levi et al., 1978). It was

7 Shall be explained in detail in Subheading 3.5.5.-Informal settlements

the project delivered on the basis of the agreement between the City Assembly, self-governing interest community for housing in Sarajevo, the City of Sarajevo Institute for Construction and Institute for architecture, and urban and spatial planning of the Faculty of Architecture in Sarajevo. The following is written in the project: "The importance of standards sits in the aspiration for fulfilment of basic conditions of harmonious city development and the life of its inhabitants" for villages and small towns and smaller and bigger cities in former Yugoslavia (Levi et al., 1978, p. 1; author's translation). The standards are written for Sarajevo but should have universal character (Levi et al., 1978, p. 2). The project was based upon UNO methodology (1974). The project mentions that previous attempts for standardization in the field of urban planning, which was performed by the Associated Institute for Urban Planning, communal and housing questions in 1966, and ended in 1968 with the following conclusion:

> There is a permanent need for standards in urban planning, whether they are normed and formalized or not; it is better to work with norms than without them. The norms should be revised every five years. Norms should not be a planning goal, but planning instruments adapted to specific environment conditions and spatial changes. The economic aspects of norms should not be underestimated. Norms depend on their application. Which norms should be mandatory in a process of design and planning, and that could be treated more flexibly will depend on development goals. Norms and standards should be categorized according to the level of their obligatoriness. Norms, in order to avoid mistakes and weaknesses in planning, construction, neighborhood, and city finishing, should be and are creative instruments. If norms are the only measure to evaluate the quality of the urban environment, there is a risk for norms to become an opposite – a perfect list of all needs and functions that should not always result with a perfectly functional city. General norms can be implemented for holistic urban reconstructions and restorations, but they should be adapted to inherited specificities of the historical urban structure. The conclusion was that: "…when every institute will be equipped for contemporary planning and design with complete databases and research, there will be no need for norms, as we know them today. (Levi et al., 1978, pp. 8–12)

This attitude led, however, as we shall see in the next section, to complete a cacophony in the urban city form of contemporary Sarajevo.

Moreover, the project mentioned that the main problem is not in standardization but in the implementation (Levi et al., 1978, p. 31). The project is concluded with two main standards: protection standards (urban standard protection and protection from disasters) and equipment standards (transportation, energy, commu-

nal and communication infrastructure, and urban equipment) (Levi et al., 1978, pp. 47, 48).

In the additional wider list of the above-mentioned norms, all specific fields for standardization are included, such as:

- Neighborhood protection from noise
- Protection from air pollution
- Soil and water protection
- Aesthetic appearance and visual pollution
- Protection of historical complexes, historical heritage buildings, and natural rarities
- Protection from disasters
- Transport infrastructure
- Energy infrastructure
- Communal and communication infrastructure
- Urban equipment:
- Housing: Housing standards
- Education equipment
- Sanitary equipment
- Sport and recreation equipment
- Child protection equipment
- Commercial, services, and storehouse equipment
- Administration equipment
- Services
- Working zones in neighborhoods.

The decision on general technical conditions for the design and construction of residential buildings and apartments and the Project of Research and organization of drafting the urban norms on the content of neighborhoods were serious attempts to introduce higher standards and building quality in residential architecture and urban planning and a good preparation for its implementation in the City of Sarajevo Land-use Plan for the period 1986–2015 in the 1980s. However, the whole process did not evolve from this research project.

The underestimation of norms and standards and their importance in architectural design and urban planning in Yugoslavia shall aggravate toward a complete denial of the important regulation instruments in contemporary Bosnia-Herzegovina and Sarajevo.

2.5 Summary

In the 19th century, the European idea of order evolved into a concrete document in the form of a building code as we know it nowadays. In broader Europe, there is a distinction between two legal systems: European or “continental” legal systems (Romano-Germanic) and Anglo-Saxon systems.

The first building code in continental European and Romano-Germanic legislation was adopted in Paris in 1784 and then in Vienna in 1829. At the end of the 19th century, large European empire capitals, such as Paris with over 2.5 million inhabitants and Vienna with over 1 million, and small European capitals, such as Sarajevo with almost 40,000 inhabitants, had all building codes with the same binding content, which implied construction upon building permits, regulations considering construction lines in existing and new streets, land cessions and street fabrication, public buildings, and industrial buildings. The transformation of European cities through a building code directive was revolutionary because it improved the quality of life of their citizens. Streets became wider and had provisions for sidewalks. Frequent epidemics were eradicated with the introduction of infrastructure systems as street elements. Buildings received necessary insolation because of defined distances between them and the prescribed height in relation to the street width, construction, and fire and flood protection regulations. In the 1930s, when the first zoning plans for Vienna and Paris were adopted, they were synchronized with building codes. From then until today, continental European spatial systems practice coding and planning as a necessary cause for obtaining a building permit.

In 1878, Bosnia-Herzegovina was annexed to the Austro-Hungarian Empire, and Sarajevo started to transform to a western European city. Under 40 years of the Austro-Hungarian rule, it became the only Southeastern European city where the Occident meets the Orient in terms of its land-use planning, culture, and inhabitants. Only two years after the Annexation, in 1880, Sarajevo got their first building code and first regulatory plan. The second building code for the Capital City of Sarajevo was adopted in 1893. Since the coding system for Sarajevo was established, during the rule of the Austro-Hungarian Empire, it remained in the legislative system under the Kingdom of Serbs, Croats, and Slovenians. The new uniform building code for all counties of the Kingdom was enacted in 1936 along with a full set of laws and bylaws enabling its implementation. This building code defined building zones according to the level of densification and accordingly established the prescribed building ratio, street width, building height, and distances between buildings, although it was not specifically tailored for Sarajevo. The city did not have a regulatory plan for its whole territory neither.

After the Second World War, with the establishment of a new sociopolitical and economy system – socialism, in the Socialist Federal Republic Yugoslavia, the building code was temporarily replaced by the Construction Decision for Sarajevo County in 1957 and afterward was completely eradicated from the spatial planning system. The reason for eradicating the building code from the spatial planning legislation of the FPRY was most likely because: the code was classified as contradictory to the national liberation war inheritance, as well as decisions of municipality national councils and ad hoc instructions and commandments of the republic institutions (Antić D. et al., 1966, p. 610). Much later, in the 1980s, when a serious discussion on the spatial planning system in Sarajevo began in the academic circles, the building code was labelled as rigorous and bureaucratically narrow-minded. However, it was also admired for being respected and implemented and because of its extreme importance in preventing violations of public interest. In the 1960s, in parallel with the adoption of the first GUP, the first informal settlements arose. The GUP for Sarajevo (1965) came more than 30 years after the first zoning plans for Vienna, Paris, or Zurich.

The SRBiH Spatial Planning Law adopted in 1974 formally established the system that preconditions a building permit with the so-called urban permit, whose aim is to check the compliance of requested construction, the spatial planning documentation, and its provisions in the form of implementation decisions. Instead of introducing a building code, the Spatial Planning Law of 1974 defined four building régimes and a building ban, or, in other words, building rules and regulations according to the area coverage with corresponding hierarchical level of plans. It could be presumed that such a nebulous and superficial definition of the building regimes left space for a rather chaotic than ordered development of the city. The building permit procedures, based on such a system, depended on four diverse types of plans and became too complex. The decision on general technical conditions for the design and construction of residential buildings and apartments adopted by the City Assembly in 1976 and the Project of Research and organization of drafting the urban norms on content of neighborhoods, delivered by the Institute of Architecture, Urban, and Spatial Planning of the Faculty of Architecture in Sarajevo in 1978, were serious attempts to introduce higher standards and building quality in residential architecture and urban planning. However, the whole process did not evolve from this research project. The SRBiH Spatial Planning Law was amended in 1986 and 1990 due to the adoption of the City of Sarajevo Spatial Plan for the period 1986–2015 and land-use plans for the urban territories of Sarajevo, Hadžići, Trnovo, Ilijaš, and Pale for the period 1986–2015. The adoption of zoning plans (spatial plan and land-use plan) for the whole territory of the city came with a huge gap of almost 30 years from the adoption of the GUP and only a year before the dissolution of Yugoslavia and the

beginning of the war in Bosnia-Herzegovina. These events announced that the dichotomy between the planning and coding system in Sarajevo shall be continued in the future.

3 Building Permit Procedure in Contemporary Planning and Coding Systems

The third section introduces relevant continental European contemporary planning and coding practices and contemporary, post-war, and transitional SC planning system with special dedication to the absence of a building code and unawareness of local, regional professional community, and politicians in taking concrete steps toward enhancing the spatial planning systems not only in the SC but also in Bosnia-Herzegovina in its entirety.

The comparative-historical method was organized as an analysis of sequences that occur within the following cases:

- The Swiss Confederation Planning and Coding System (Zurich Building Ordinance)
- The Republic of Austria Planning and Coding System (Vienna building order)
- The Republic of Slovenia building code
- The French Republic form-based coding or morphological zoning coding theory
- SC planning system in the BiH legislative framework
- Absence of a building code in the SC.

The outputs of this method, as a part of the analysis of the research methodology outcomes and the proposed model for introducing the new building code for Sarajevo, shall be presented in the second part of the book.

Within Europe, we may speak about the following planning cultures: Scandinavian, British, Napoleonic, Germanic, and Eastern European (Knieling & Othengrafen, 2009, p. 364).

The Romano-Germanic legal systems are based on a set of written civil laws or “codes” (Kropf, 2012, p. 159). As a reference point to Sarajevo, regarding its urban history and cantonal constitution, two relevant Germanic planning and coding cultures are represented in this section: the Austrian and Swiss. We shall reflect briefly to the Romanic or to a more precise French planning and coding system and the new Slovenian building law because they have certain points of reference with the existing planning system of the SC. The fact that Romano-Germanic systems are interconnected historically is explained in Section 2. This liaison will be the basis for the comparative-historical methodological approach presented in Section 4.

3.1 Swiss Confederation Planning and Coding System

3.1.1 Political Framework and Spatial Conditions

The Swiss Confederation is not an EU member state. Switzerland is a federal state consisting of 26 cantons and 2396 municipalities. It is positioned in Central Europe with good connection with its European neighbors. The Trans-European Transport Network (TEN-T) corridors are intersecting and are tangential to Switzerland: Rhine–Alpine corridor is intersecting Switzerland, the North Sea Mediterranean is tangential to this country, and the Mediterranean corridor is close to its southern borders. Switzerland has 8.1 million inhabitants, and its biggest city is Zurich, with 1.2 million inhabitants. The basic facts on the specific spatial conditions of the Swiss Confederation are presented in Table 10.

> Switzerland is situated in the middle of Europe, in the region of the Central Alps. Its area amounts to 41.200 km². About 60% of the surface of the country is mountainous; only one-half of this area can be used for agricultural purpose…. The industrial centers are mainly in the middle part of the country, which means that there, the population density is very high. (Federal Office on Spatial Planning, 1987, p. 3)

Table 10 Basic facts on the spatial conditions of the Swiss Confederation

Location:	Central Europe
Topography	Jura, Swiss Plateau, Alpine foothills, Alps (40% of the area of the country), and southern side of the Alps
Number of inhabitants	8.1 mil.
Cities over a million inhabitants	Zurich with 1.2 mil.
GDP	€ 642 billion

(Ryser & Franchini, 2015)

There are three governmental levels in Switzerland: national, cantonal, and municipal. The Federal Office for Spatial Development has the power to enact the fundamental legislation at the national level. Cantonal planning offices elaborate and coordinate their own planning and building laws. Large cantons, such as Zurich, practice regional planning for a supra-municipal spatial planning tasks and local building authority controls land-use planning at the municipal level (Ryser & Franchini, 2015, p. 204) (Figure 13).

The role of different government levels in Switzerland's spatial planning system is described as follows:

> In practice, the national government has two primary roles. First, it enacts the framework law that structures the planning processes of the cantons.

> It also enacts legislation in other fields such as transportation, environmental protection, housing, and energy that has relevance for land-use planning. Typically, federal legislation in these areas provides a framework that is further specified by the cantonal legislation. Due to binding national guidelines, land-use planning in most Swiss cantons is structured similarly. Cantons exercise their responsibility for spatial planning mostly through the preparation of strategic regional plans. All cantons except Geneva and Basel-Stadt have delegated actual responsibility for land-use planning to municipalities, but they remain responsible for issuing building permits for projects that are located outside of the so-called building zones (i.e., areas designated as developable). (OECD, 2017, p. 203)

Due to Swiss' complex governmental architecture, it forms a decentralized model:

> Switzerland's form of direct democracy with an extreme federally structured fragmentation of power and distinctive municipal autonomy forms a unique situation in Europe. The supra-local spatial planning is the responsibility of the cantons, which vary in size, culture, and landscape as well as in the demands that face each canton. Under these circumstances, the political structure has advantages and disadvantages. A centrally controlled spatial planning policy is not possible. (ETH Zurich, 2008, p. 14)

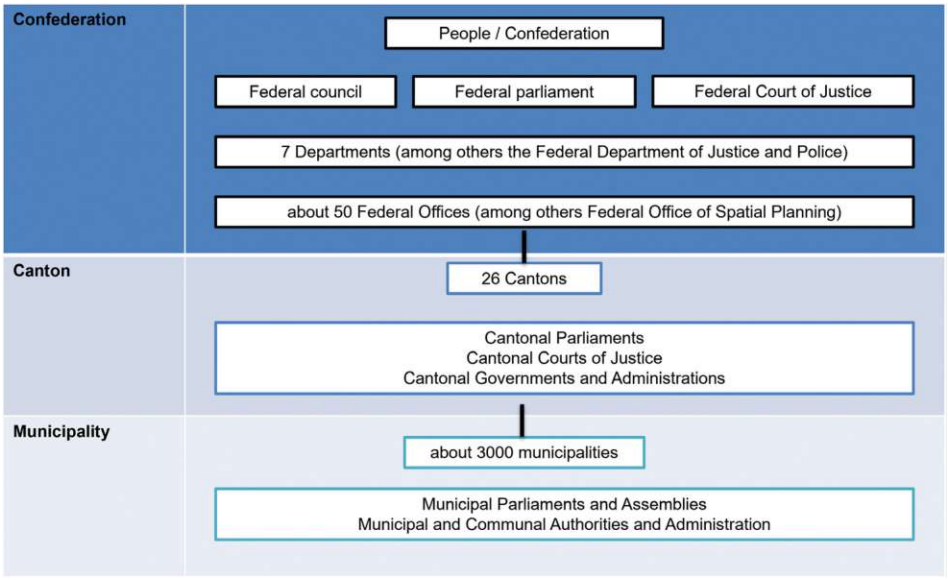


Figure 13 State Structure of Switzerland *(Federal Department of Justice and Police, 1987)*

Swiss Federal Office for Spatial Development (ARE) describes that the fragmented political system in Switzerland could also be understood as a challenge in

terms of the “high level of autonomy for spatial administrative bodies that offers a chance to develop tailored concepts and to follow individualized approaches” (ETH Zurich, 2008, p. 14).

3.1.2 Spatial Planning System

According to Article 75 of the Federal Constitution (1999):

> The Confederation shall lay down principles on spatial planning. These principles are binding on the cantons and serve to ensure the appropriate and economic use of the land and its properly ordered settlement. The Confederation shall encourage and coordinate the efforts of the cantons and shall cooperate with them. The Confederation and the cantons shall take account of the requirements of spatial planning in fulfilling their duties.

“The Swiss Federal Spatial Planning Law (1980) lays down the aims and principles of spatial planning for the whole Switzerland. Its primary aim is the economical use of the limited land area” (Ryser & Franchini, 2015, p. 204). The Spatial Planning Law consists of six titles. The First Title: In Article 1 of the Spatial Planning Law, three prevailing aims in the field of spatial planning are mentioned: economical use of the land, coordination of spatially effective activities, and settlement according to the desired development of the country. The Second Title: In Chapter 1, the establishment of guiding plans is regulated. Each canton must set up its own guiding plan, which are binding on all federal, cantonal, and municipal authorities (Figure 14). The guiding plans must be approved by the Federal Council. In Chapter 2, the Confederation is obliged to work out concepts and subject (sectoral) plans for spatially effective tasks and to collaborate with the cantons in the coordination as demanded by the Guiding Plans. In Chapter 3, land-use planning is regulated as the most important task of municipalities. Zoning plans are binding on everybody. To ensure their observation, a general permit for building constructions and installations is ordained by the Federal Law (Federal Office on Spatial Planning, 1987, pp. 6, 7). At the national level, Switzerland has a non-binding strategic plan titled Spatial Concept of Switzerland adopted in 2012, five sectoral plans, and two spatial concepts:

> Sectoral plans concern high-potential agricultural areas, transportation, the electricity grid, storage sites for nuclear waste, and the military. They designate areas for specific land uses within their thematic fields and are binding for subordinate plans. Sectoral concepts, which contain less detail than sectoral plans, are prepared for landscape planning and the planning of sports facilities. (OECD, 2017, p. 203)

At the cantonal level, structural plans are detailed strategic plans that describe the socioeconomic situations in cantons and include detailed objectives for the spatial development in cantons. They are very specific about the intended land use for certain parts of the canton and determine the location of public infrastructure. However, they do not contain land-use regulations that are binding for landowners.

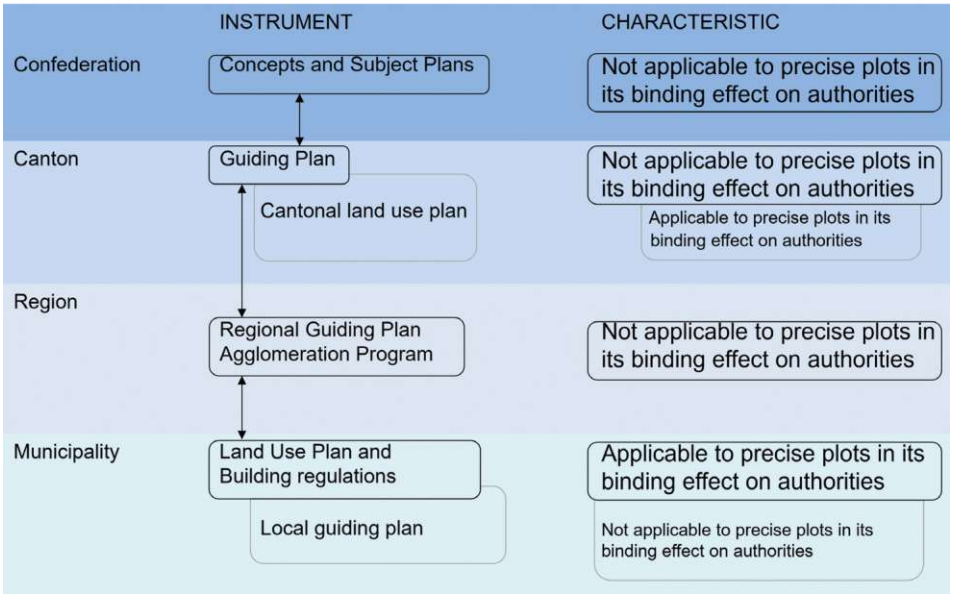


Figure 14 Federal spatial planning system – Spatial planning tools in Switzerland *(Swiss Planning Association, 2016)*

In general, land use is regulated by local land-use plans, which are prepared by municipalities except in the cantons of Geneva and Basel, where cantonal land-use plans are prepared. All municipalities are covered by them (map-based elements = 1:5,000 and 1:1,000). They typically define the limits of building zones and the different land-use zones within it, but they do not contain regulations on urban design. After the municipalities prepared them, local land-use plans must be approved by the canton. In certain cantons, local land-use plans may also need to be confirmed by a public referendum in the respective municipality.

Special land-use plans are prepared for areas where additional regulations, beyond general zoning, is required. Most commonly, special land-use plans define neighborhood layouts, architectural details of buildings, and other specific aspects required for the development. They may override local land-use plans. Beyond these aspects, they may also regulate other aspects of land use, if needed. Special land-use plans are defined in cantonal legislation. Therefore, their

details and their approval process vary from canton to canton. In addition to the above-mentioned plans, a large variety of other plans exist.

Primarily, these are strategic plans at all government levels and sectoral plans at the canton level. Typically, they cover issues, such as economic development, waste, wastewater, telecommunication, electricity grid, traffic, and environmental protection. Furthermore, certain national legislation has an explicit spatial dimension. Examples are laws creating an inventory of heritage sites or determining areas where hunting is forbidden.

Land-use trends in Switzerland

Switzerland is one of the more densely populated Organisation for Economic Co-operation and Development (OECD) countries. Land use is more constrained in Switzerland than in other countries because of its mountainous terrain, which is reflected in the high share of land that is neither developed nor used for agriculture or forestry. Since 2000, the percentage of developed lands has increased very little – at least insofar as can be observed on available satellite imageries. As the population has been growing strongly, the amount of developed land per capita has decreased by approximately 0.8% annually, the second highest decline in the OECD behind Luxembourg. The per capita use of developed lands is slightly below the OECD average.[1]

3.1.3 Building Code and Its Role in Spatial Planning Systems

A building code is a mandatory spatial planning instrument in Switzerland. It exists on a cantonal governmental level. Each canton establishes its own planning and construction law and building code. Zurich as the biggest city, which has the status of a canton and a city, has the Planning and Construction Law (PBG–Planungs- und Baugesetz) adopted in 1975, amended in 1997 and 2010, 2013, and 2015[2]. It also has a building code/ordinance (ABV–Allgemeine Bauverordnung) adopted in 1977 and completed with explanations of articles from PBG in sketches and amended with additional sketches in 1991 and measurement and calculation methods in 2017[3].

1 OECD calculations based on the Corine Land Cover dataset

2 Version according to G of 22 October 2012 (OS 68, 189; OJ 2011, 1161). In force since 1 June 2013.

3 Version according to RRB of 11 May 2016 (OS 72, 60; OJ 2016-05-27). In force since 1 March 2017.

3.1.4 Zurich Building Code

The Zurich Building Code, or more precisely the Building Ordinance, is a concise and clear 56-page document. It has 10 chapters and 34 articles. Its specificity is the Annex with explanatory sketches for the measurement and calculation methods according to the Planning and Construction Law (PBG) and Building Code (ABV).

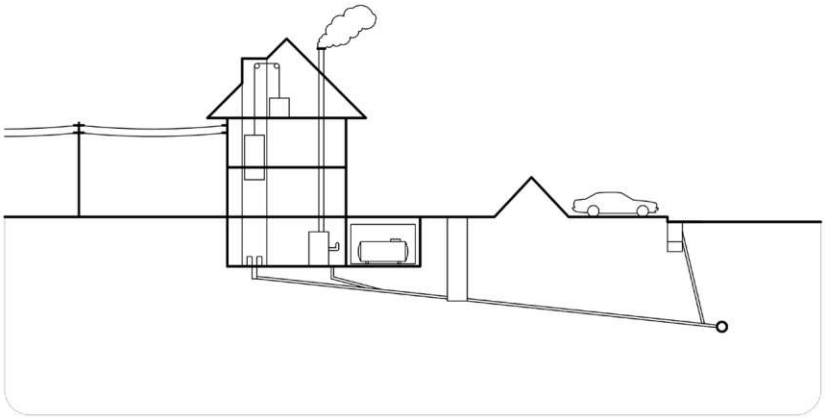


Figure 15 Technical equipment as explained in the Annex with explanatory sketches for the measurement and calculation methods according to the PBG and ABV *(Planning and Construction Law, 2013)*

For instance, in Chapter VII §28, the building length and width in ABV corresponds with §49 in PBG. Specific terms, such as equipment (§3 ABV; see Figure 15) or technical equipment (§4 ABV; see Figure 16), underground constructions (§2b ABV; see Figure 16) and some definitions from The Planning and Construction Law, such as the total building height (§281 PBG; see Figure 17) or façade height (§278 PBG; see Figure 17) for flat roof buildings and sloped roof buildings are explained in the sketches in the Annex. This feature makes the building code clear and explanatory to all stakeholders in the planning and construction processes.

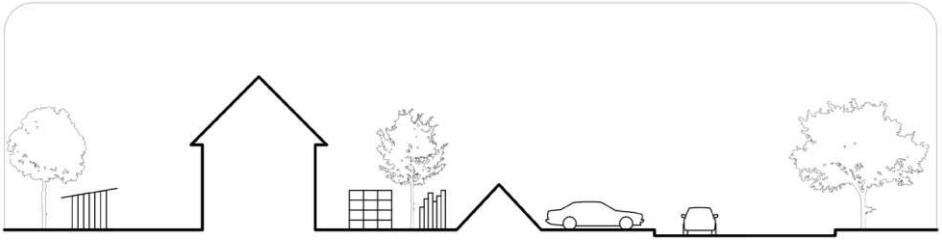


Figure 16 Equipment as explained in the Annex with explanatory sketches for the measurement and calculation methods according to the PBG and ABV *(Planning and Construction Law, 2013)*

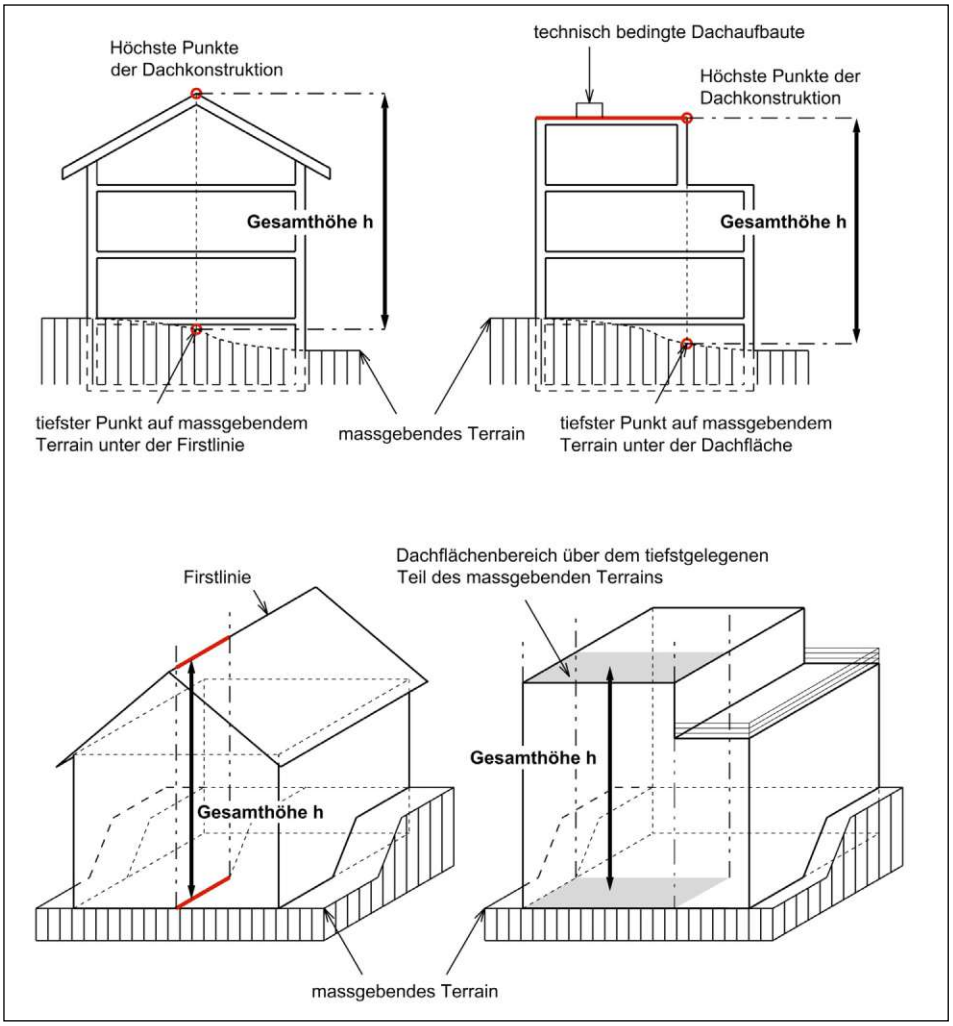


Figure 17 Total building height as explained in the Annex with explanatory sketches for the measurement and calculation methods according to the PBG and ABV *(Planning and Construction Law, 2013)*

The Zurich Building Ordinance, as mentioned above, corresponds directly with the cantonal planning and construction law, which is written on ninety-six pages with seven titles and transitional provisions, and 361 articles (Table 11).

Table 11 Content of Zurich Building Ordinance

Title I General provisions
Title II Planning law
1. Obligation to plan 2. Strategic planning

A. General provisions
B. Cantonal-level guiding plan
C. Regional-level guiding plan
D. Municipal-level guiding plan
E. Setting and approval

3. Land-use planning

A. Cantonal- and regional-level land-use plan
I. Agricultural zones
II. Free zones
III. Design plans for material extraction and material deposition
B. Building and zoning code
I. General provisions
II. Building zones
III. Recreational zones
IV. Reserved areas
V. Further stipulations of the building and zoning code
VI. Special building regulations and design plans

1. Special building regulations
2. Design plans

VII. Common provisions
C. Development (regulatory) plan
D. Construction and vertical alignment line
I. Construction lines
II. Vertical alignment line
III. Common provisions
E. Ski and sledding lines
F. Land security for public works
I. Execution project
II. Precautionary building ban

4. Neighborhood plan, border adjustment, and area rehabilitation

A. Neighborhood plan

1. Principles
2. Evaluation and allocation of land
3. Preparation procedure
4. Execution
5. Construction of the development facilities, equipment, and technical equipment: legal relationships
6. Procedural costs

B. Border adjustment
C. Territorial redevelopment
I. Requirements
II. Further provisions

Title III. Protection of natural and cultural heritage

Title IV Public building law

1. Building regulations
A. General provisions
B. Basic requirements for buildings and installations
C. Permitted structural uses of the land
I. Basic rules
II. Calculation figures (floor area ratio, green area ratio, and construction mass ratio)
III. Distances

1. Common provisions 2. Distances from territorial borders, forest, water bodies, and from installations secured by building lines 3. Distances from neighboring properties 4. Building distances
IV. Floors, roof height, facade height, and total height 1. Floor and roof height 2. Facade height 3. Total building height 4. High-rise buildings
V. Open and closed supra structures
VI. Further provisions on building appearance
D. Requirements for buildings and rooms
I. General provisions
Title IV Public building law
II. Housing
E. Reconstruction 2. Building law procedure
A. Application for building permit
B. Preservation of rights
C. Building law decision
D. Preliminary decisions
E. Simplified procedure
F. Construction procedure
Title V Legal protection
Title VI Penalties and mandatory application
Title VII Final provisions 1. Introductory provisions 2. Repeal and amendment of existing legislations 3. Transitional provisions 4. Enforcement provisions 5. Entry into force
- Transitional provisions G of September 1, 1991 (OS 51, 817)
- G of 8 June 1997 (OS 54, 268)
- G on the Subordination of the Tax Appeal Commissions and Building Appeals Commission under the Administrative Court from September 13, 2010 (OS 65, 960)
- Transitional Provision Amendments from October 28, 2013 (OS 69, 262)
- Transitional Provision Amendments from October 28, 2013 (OS 69, 262)
- Transitional Provision Amendments from September 14, 2015 (OS 72, 52)

(Zurich Building Code)

3.1.5 Building Permit Procedure

According to the Building Procedure Ordinance (BVV – Bauverfahrensverordnung) of Zurich, the cases where a building permit need not be obtained is defined (§1 and §2 BVV), where documents are mandatory when applying for a

building permit (§3 and §5 BVV), in which color certain design elements should be presented in an execution project (§4 BVV), who can sign the documents (§6 BVV), and whose obligation is to coordinate in the case of complex procedures involving various stakeholders (§8 BVV). The simplified procedure defined by BVV is limited to 30 days. §15 BVV defines and defends third-party interests. The document contains a table with specified cases of building permit procedures where the construction or alteration of buildings and installations needs to be issued by the local building authority and in the form of assessment (permit, concession, or approval) by other cantonal bodies (§318 PBG; §7 BVV). A building permit expires if the building project is not commenced within three years after the permit has been granted (§322 PBG). The calculation figures specified in the Building Procedure Ordinance are mandatory to be a part of a design project when applying for a building permit.

3.1.6 Planning and Coding as an Instrument of Creating a Land and Property Value

Article 5 of the Swiss Spatial Planning Act (RPG) of 2014 stipulates that “Planning benefits shall be provided at a rate of at least 20 percent. The compensation is provided through either infrastructure or its sale”.

This article is consenting changes in zoning plans through which certain land becomes a building land. Because the property owner gains from this process, it is his/her obligation to pay the compensation to the municipality. A private investor’s compensation, in such a manner, becomes a public gain for investments, such as infrastructure.

3.2 Republic of Austria Planning and Coding System

3.2.1 Political Framework and Spatial Conditions

The Republic of Austria is a member of the European Union since 1995. It is a federal state with three government levels: national, federal (provincial), and municipal. There are nine federated provinces (Ger. Länder): Burgenland, Carinthia, Lower Austria, Upper Austria, Salzburg, Styria, Tyrol, Vorarlberg, and Vienna. There are 15 statutory towns, 79 districts and sub-district, an external body of the district commission Liezen, and 2,098 municipalities. The city of Vienna is also a federal province and the capital of the Republic of Austria. The country is well positioned in the Central Europe and is well connected with its European neighbors (3 out of 9 TEN-T corridors cross the country: Scandinavian–Mediter-

ranean, Rhine–Danube, and Baltic–Adriatic). Mediterranean is tangential to the country, and future Orient/East–Mediterranean or Western Balkan plans to cross the country, a land with 8.8 million inhabitants (Table 12).

Table 12 Basic facts on the spatial conditions of the Republic of Austria

Location:	Central Europe
Topography Number of inhabitants Cities over a million inhabitants	From Alps to Pannonian Plain and the Danube Region 8.8 mil. in 2017 Vienna with 1.8 mil. in 2015
GDP	€ 370 billion in 2017

(Gruber, Kanonier, Pohn-Weidinger & Schindelegger, 2018)

Compared to the whole European market, its relatively small economy is strongly affecting markets in the wider region. Its capital city with 1.8 million inhabitants continues to be the scientific and cultural center in Central, Eastern, and Southeastern Europe over the centuries. It is ranked as the most livable city in the world in 2018 according to the Economist Intelligence Unit annual survey (BBC, 2019).

These specific spatial conditions, geostrategic position, and political conditions have shaped the current Austrian way of organization and management of the spatial planning system to be explained in detail in the following section.

3.2.2 Spatial Planning System

Spatial and land-use planning in Austria has a long and rich tradition based on historic facts and legislation, which was created in the 19th century. Its planning logic was based upon the building classification of urban blocks, networks of infrastructure and green areas, standardization and transparent and detailed regulation, and spatial planning processes. When Austria joined the EU on January 1, 1995, it underwent a new upgrading of one already well-established spatial planning system, characterized with stability and continuity:

> Without going into too much detail of the first laws passed with the reference to planning, the main origins are to be found in the amendment to the Constitutional Act 1925 (building matters are to remit of the Länder [federal provinces]), Vienna Building Code 1930 (zoning and development plans are defined by law) and the Housing development Act 1933 – introduced in Austria in 1939 (concept of “spatial planning” ([Ger.] Raumordnung), economic plan as a conceptual planning instrument.) After [...] 1945 housing development law remained valid as a law in the remit of Länder [federal provinces] and formed the basis for spatial planning law. [...] Another legal basis for local planning with the various building codes of the Länder [fed-

> eral provinces] and the cities that include the planning instruments of zoning plans, building regulations and land development plans. The ruling that has been handed down by the Constitutional court in 1954, VfSLg 2674/54 appointed the Länder [federal provinces] as assigned competence for general spatial planning legislation and execution, the Land [federal province] parliaments adopted spatial planning laws in the 1950s and 1960s. (Kanonier & Schindelegger, 2018, p. 70)

In 1973, all federal provinces replaced housing development laws with their own spatial planning legislation, which has been affected also by the "amendment to the Federal Constitutional Act from 1962, which established local spatial planning ([Ger.] örtliche Raumplanung) as an autonomous area of competence of the municipalities" (*Kanonier & Schindelegger,* 2018, p. 71).

In the late 1960s and the beginning of the 1970s, a new instrument was introduced to Austrian spatial planning, and it was a local planning program (Ger. örtliches Raumordnungsprogramm) with a strategic perspective at the local level. From the 1990s onward, local development concepts and schemes as non-binding documents became a key planning instrument of the local spatial planning. The environmental protection boom has begun in the1980s and continued through the 1990s with the start of the sustainability debate, which aimed to ensure that environmental aspects deserve the same treatment as social and economic factors.

The political aspects that affected Austria´s spatial planning was accession to the EU and the transitional processes of the Eastern and Southeastern European economies.

The1990s was also marked by a proactive land policy, the acquisition of building land plots by the municipalities, with the support of the federal provinces and the establishment of two new instruments: spatial planning contracts,[4] concluded between municipalities and landowners for the utilization of building lands in compliance with the land-use plan and development, and infrastructure costs that need to be paid by landowners for infrastructure and development charges and infrastructure tax.

The mid-1990s was marked by more strict legal limitations considering the mobilization of the building land, whereas the 2000s was marked with the implementation of EU regulations, regulations considering shopping centers as the most often and detailed regulated building form in spatial planning laws, with greater significance on regional and cooperative planning and the "soft planning" approach.

---

4 Spatial planning contracts exist in all federal provinces. The legal framework for spatial contracts is tight.

EU and national levels

Austria's spatial planning law has direct references to EU legislations, even though the EU has no comprehensive spatial planning competence. To implement some EU policies, several directives are incorporated in Austrian legislation at the national level, such as the Directive on the Assessment and Management of Environmental Noise (Directive 2002/49/EC) and Directive on the Assessment of the Effects of Certain Plans and Programs on the Environment (Directive 2001/42/EC): "according to which, (spatial) plans and programs that are likely to have major environmental impacts must be subjected to a strategic environmental assessment" (Kanonier & Schindelegger, 2018, p. 62). In addition, the SEVESO III Directive (Directive 2012/18/EU) aims to prevent major industrial accidents.

> Spatial planning is not a common EU policy, and the debate regarding spatial development is traditionally conducted on the multilateral or bilateral level between states. Its nature at the EU level is predominantly informal, and it serves primarily as guidance (e.g., within the scope of the Territorial Agenda). (Gruber & Pohn-Weidinger, 2018, p. 30)

Territorial Agenda 2020 is not a binding document, but it is a framework for European and national strategic approaches. The European dimension of spatial and regional policies is closely related to the national regional policy. "The term regional policy started to be used in Austria with a very specific definition only relatively late at the beginning of the 1970s" (Gruber et al., 2018, p. 42). That is, to achieve national strategic approaches of the regional policy, the Austrian Conference on Spatial Planning (ÖROK) was established, in 1971, by the federal government. It is an important body for spatial development and spatial planning in Austria, which prepares the Austrian Spatial Development Concept (ÖREK) every 10 years. ÖROK and ÖREK partnerships include spatial components and themes, such as "urban regions" and "smart specialization." The agenda Urban Region in Austria was published as a framework for the implementation of the Austrian Spatial Development Concept through the Cooperation Platform Urban Region. EU cohesion policy programmers in Austria emphasized cooperation projects between cities and their catchment areas. "SMART Cities" initiatives are being implemented currently at the national and EU levels. At the transnational level, the "Joint Program Initiative – Urban Europe aims to systematically investigate urbanization issues to integrate new technology achievements with the latest findings from the social sciences, spatial studies, and economics. Austria plays a leading role in this initiative" (Gruber et al., 2018, p. 31). European instruments are embedded in Austria's regional policy:

> For the first time, cohesion policy funds are being brought together under the umbrella of the European Structural and Investment Funds (ESI

> Funds) with the funds for rural development and for maritime and fisheries policy. The Partnership Agreement (PA) – in Austria STRAT.AT 2020 – is the strategic framework that forms the link to the EUROPE 2020 objectives and programmes, and is embedded in the fund-specific objectives. (Gruber & Pohn-Weidinger, 2018, p. 33).

Four major programs of the European funds cover key areas and objectives defined by the EUROPE 2020: The European Agricultural Fund for Rural Development (EARDF), Program for Regional Development (ERDF), Program Investment in Growth and Employment (ESF), and European Maritime and Fisheries Fund Program (EMFF) (Figure 18).

Figure 18 European investment funds in Austria (2014–2020) *(Adapted from Österreichische Raumordnungskonferenz ÖROK, 2014 as cited in Gruber & Pohn-Weidinger, 2018, p. 34)*

> For the entire period 2014–2020, Austria has an indicative amount at its disposal of approximately EUR 5.18 billion from the European Structural and Investment Funds (incl. European Territorial Cooperation), while throughout Europe, the funds earmarked for this purpose are around EUR 469 billion. [...] Some three quarters of the funds are allocated to the European Agricultural Fund for Rural Development, with one quarter of the EU funds being used for the objectives of EU cohesion policy. (Gruber & Pohn-Weidinger, 2018, p. 34).

Austria is eligible to various European funds when implementing the partnership agreement “Territorial Agenda of the European Union 2020” (TA 2020 Strategy). The four major European funds that are already mentioned above support 11

thematic objectives classified in three major goals: intelligent growth, sustainable growth, and inclusive growth (Table 13).

Table 13 Thematic objectives (TOs)

Intelligent Growth	Sustainable Growth	Inclusive Growth
1. Research, technology, development, and innovation	4. Reduction in CO_2 emissions	8. Employment and labor force
2. Competitiveness of SMEs	5. Adaptation to climate change	9. Social inclusion/ combating poverty
3. Information and communication technology	6. Environmental protection/efficient use of resources	10. Education and lifelong learning
	7. Sustainable transport network infrastructure	11. Efficient public administration

Europe 2020 strategy. (Adapted from European Comission, 2015 as cited in Gruber & Pohn-Weidinger, 2018, p. 34)

The cross-border and transnational perspective are of special importance for Austria. When entering the EU, Austria joined the European Territorial Cooperation established in 1990 (at the time with the community initiative INTERREG). Today, Austria takes part in different interregional and network programs, such as INTERREG EUROPE for the spread of innovative and successful approaches to the EU regional policy, ESPON 2020 for European territorial monitoring and spatial research, URBACT thematic networks organized by cities, and INTERACT that serves to support the managing bodies for cooperation programs.

Austria participates in two out of four EU Macro-Regional Strategies: Danube region and the Alpine region. Danube region's macro-regional strategy affects EU member countries, such as Germany, Austria, Check Republic, Slovakia, Slovenia, Croatia, Hungary, Romania, and Bulgaria, and non-EU member countries, such as Bosnia-Herzegovina, Serbia, Montenegro, Moldova, and Ukraine.

A single EU market without competitive distortions is the objective of the community competition rules. Regarding this objective and regulatory framework for structural and regional policies in Austria, the ceilings for the maximum state aid are defined for the period 2014–2020: "uniform 10% for large companies, 20% for medium-sized companies, and 30% for small companies in the Regional assisted areas in Austria 2014-2020 pursuant to Article 107 (3) EU State Aid Law " (Gruber & Pohn-Weidinger, 2018, p. 38).

Federal level

The federal government is responsible for sectoral planning.

> The foundation for the distribution of areas of competence for planning was established by the Constitution of the First Republic and the amendments to it of 1925 that distributed the areas of competence in detail among the federal government, Länder [federal provinces] and municipalities. The federal government is responsible for legislation and for execution of all administrative matters assigned to it by the Federal Constitutional Act (B-VG). Competence for legislation and implementation is shared by the federal government and the Länder [federal provinces]. (Gruber et al., 2018, p. 10)

Therefore, the federal government's responsibilities are the legislation and execution of key sectoral plans of spatial relevance. Apart from binding determinations, different informal concepts and plans were prepared by the federal government. In Austria, there is no federal law for spatial planning; instead,

> [p]ursuant to a decision by the Constitutional Court of 1954, spatial planning is not a matter belonging to a specific sphere of administration, but rather a matter that concerns many sectors. The different authorities at the federal, Land [federal] and municipal level have planning remits. (Gruber et al., 2018, p. 10)

Here, it is important to emphasize the role of ÖROK, as a key coordinator between the representatives of the federal government, land governments, and interest group representatives with the federal chancellor acting as the chairperson. The coordination required at the federal level between the federal government and federal provinces takes place at an informal level.

> With the so-called Art. 15a Federal Constitutional Act Agreement (BVG Agreement), a formal instrument has been created for cooperation between the federal government and the Länder [federal provinces]. Originally used for concrete programmes carried out cooperatively, today it serves to define the roles and the tasks of the federal government and Länder [federal provinces], e.g., in the context of EU cohesion policy. (Gruber & Pohn-Weidinger, 2018, p. 42)

The following sectoral spatial departments are in the competence of the federal government: forestry, water management, transport routes (e.g., railways and federal roads), navigation, aviation, energy, and gas lines.

Until the 1990s, cooperative programs were jointly implemented by the federal government and federal provinces, but in the mid-1990s, federal provinces became regional policy actors.

Provincial level (Ger. Länder)

Federal provinces take care of sectoral and regional planning. A federal province is responsible for sectoral planning in the following areas: transport – state (Länder) roads and nature conservation. All federal provinces, except Vienna, make a distinction between regional and local spatial planning, even though some federal provinces have additionally strengthened their regional level by introducing regional associations.

According to legislation of federal provinces, land government and municipalities must collect data on the natural, economic, social, and cultural situations and on their respective changes and record and investigate the status of a region, its development, and factors of influence as a basis for their planning measures in a spatial planning land registry. “In accordance with the Vienna Building Code (§2a (2) WBO), the city administration must create and keep a database that records data on the plots of land and on buildings required for urban planning purposes” (Kanonier & Schindelegger, 2018, p. 88). Based on the statutory provisions, all federal provinces must maintain a spatial planning land register or a geographic information system (e.g., KAGIS, DORIS, VOGIS, SAGIS, and TIRIS) that contain, among other things, the following data:

- Map materials for planning (aerial photos, etc.);
- Valid regional and local spatial plans, in particular, the zoning plans of the municipalities;
- Regional restrictions to use based on federal and [province] laws;
- Location and capacities of regional infrastructure facilities;
- Location, type and size of protected areas and hazard zones. (Kanonier & Schindelegger, 2018, p. 88)

In some federal provinces, an evaluation of soil functions has been implemented and is available to the public in the GIS. For the Alpine region, the so-called white zone inventory “provides a comprehensive description of nature landscapes and cultivated areas with sparse development in Vorarlberg, including their uses to serve as a basis for planning, especially for spatially relevant development” (Kanonier & Schindelegger, 2018, p. 89).

The federal province prepares planning laws that contain objectives and instruments for regional and local spatial planning, which is governed by the municipalities. “In accordance with the legality principle, planning bodies are only permitted to act based on an authorization granted by law. Planning acts are implemented primarily in building codes” (Gruber et al., 2018, p. 10).

The federal province defines the framework for strategic local development concepts. They determine the instruments of regional planning, planning types, con-

tent, legal effects, and procedures for their preparation and amendment in their spatial planning laws. Generally, the following are the binding instruments of federal provinces:

- “Spatial planning or development programs of the Länder [federal provinces] that cover the entire territory of a Land [province],
- Regional spatial planning or development programs for individual planning areas,
- Sectoral spatial planning or development programs for certain sectors” (Kanonier & Schindelegger, 2018, p. 89).

Non-binding planning documents are quite significant for regional spatial planning, and they may differ from concepts, content, and spatial structure.

Spatial planning instruments and spatial planning laws for all federal provinces and their classification to those that apply for the entire federal province, regional, sectoral, and conceptual instruments are shown in Table 14.

Table 14 Instruments of regional spatial planning in spatial planning laws in Austria

federal province	Applies to the entire federal province	Regional	Sectoral	Conceptual instruments
Burgenland §1–§10 Bgld RplG	Land development plan (§2a) Development program (§7)	Development program for individual landing sites (§7)	-	
Carinthia §3 Ktn ROG	Development program for the entire national territory (§3 Abs. 2)	Regional development program (§3 Abs. 3)	Sectoral program (§3 Abs. 4)	
Lower Austria §3 ff NÖ ROG	Land development plan (§3 Abs.1)	Regional spatial planning program (§10)	Spatial planning program for functional areas (§11)	Supra-local spatial planning and development concepts Regional master planning (§12)
Upper Austria §11 OÖ ROG	Land development program (§11 Abs. 3)	Regional spatial planning program (§11 Abs. 3)	Spatial planning program for functional areas (§11 Abs. 3)	Regional development models (§4 Abs. 3) Intercommunal spatial development concepts (§6)

federal province	Applies to the entire federal province	Regional	Sectoral	Conceptual instruments
Salzburg §8 ff Slbg ROG	Land development program (§9)	Regional program (§10)	Appendices on spatially related subject areas in the regional development microscopy (§9 Abs. 1 last sentence) Site ordinances for large commercial enterprises (§14)	Regional development concepts through regional associations (§10)
Styria §11 ff Stk ROG	Land development program (§12)	Regional development program (§13) Subregional development program (11 Abs. 4 Z 3)	Sectoral spatial program (§11 Abs. Z 2)	Development models (§4) and regional development program (§5)
Tyrol §7 ff TROG	Land development program for the entire territory (§7 Abs. 4)	Regional planning program for planning areas (§7 Abs. 4)	Regional planning program for specialist topics (§7 Abs. 3) Regional planning program for EKZ[a] (§8)	Spatial development plans (integral or sectoral plans) (§12)
Vorarlberg W§6 ff Vbg RplIG	Land spatial plans for the entire land territory (§6 Abs. 2)	Regional plans for individual parts of the country (§6 Abs. 2)	State area plans for certain functional areas	
Vienna Urban Development, Urban Planning, and Building Code				Urban development plan and sectoral concepts (STEP[b] 2025)

[a] *Tiroler Einkaufszentrenprogramm,* [b] *Stadtentwicklungsplan (Kanonier & Schindelegger, 2018, p. 90)*

All nine federal provinces have their own spatial development strategies accompanied by sectoral development strategies and SMART specialization strategies (see Table 15). The spatial development strategy is to set key sectoral development goals, mostly, for a period of 20 years. They serve as guidelines for regional, cross-sectoral, and sectoral policies. Regional development is based on an NUTS III level spatial orientation framework incorporated in development principles and strategies: “The development principles are normally designed to cover several sectors and topics, and are therefore, much broader than the sectoral

strategies at the [federal provinces] and federal level." (Gruber & Pohn-Weidiger, 2018, p. 49).

Table 15 Strategy concepts of federal provinces

federal province	Spatial Development Strategies	**Sectoral Development Strategies, Smart Specialization Strategies (Selection)**
Burgenland	Development Strategy 2020 Regional Development Plan 2011	RTI–Strategy Burgenland 2025 Tourism Strategy 2022+
Carinthia	Development program for the entire national territory	Economic Strategy for Carinthia 2013-2020 RTI–Strategy RTI–Strategy 2020 Future through Innovation
Lower Austria	NÖ Regional Development Concept 2004	Economic and Tourism Strategy Lower Austria 2020 RTI Strategy and RTI Program Lower Austria Digitization Strategy Lower Austria
Upper Austria	Regional Planning Program 2017 State Development Program (under development)	Strategic economic and research microscopy OÖ 2020 State Tourism Strategy 2022
Salzburg	Regional Development Program 2003	Economic and Innovation Strategy Salzburg 2025 Strategic Plan Tourism Salzburg 2020
Styria	Land Development Program 2009 Regional Development Model	State Tourism Strategy 2022
Tyrol	Land Development Program 2009,	Economic and Tourism Strategy 2025 Research Strategy Styria 2020
Vorarlberg	State spatial plans for the entire region Territory and spatial image for Vorarlberg (under development)	Science and Research Strategy Vorarlberg 2020 Economic and Tourism Model Vorarlberg
Vienna	Urban Development Plan (STEP)	Smart City Wien/Framework strategy Wiener RTI Strategy-Innovative Vienna 2020

(Gruber & Pohn-Weidiger, 2018, p. 46)

Regional policy is led by various agencies at the federal and regional levels. Every federal province has its regional development agency (see Table 16). The task of these agencies is to mobilize and provide advisory services to project organizers and regional stakeholders.

Regional policies based on vertical and horizontal hierarchical coordination and cooperation in Austria resulted with the development of the entire territory:

> Therefore, today only a very limited classical "regional policy" exists – in the sense of taking measures to counteract trends in structurally disad-

> vantaged regions – but rather financial assistance is made available for development in all types of regions. [...] Today, this multi-level-governance system is the “policy framework for financial assistance for regional development in Austria”. (Gruber & Pohn-Weidiger, 2018, p. 51)

The development of all regions on an equal basis is the key for implementing the cohesion policy and cooperative planning.

Table 16 Regional Development Agencies of the federal provinces (Selection)

federal province	Agencies	Regional Development Agencies
Burgenland	Burgenland Economy	Regional management Burgenland
Carinthia	Carinthia Economic Development Fund Carinthia Business settlement and investment	Regional management organizations in the regions
Lower Austria	ecoplus Lower Austria Business Agency Agencies in the field of financing and partnership	NÖ. Regional. GmbH
Upper Austria	Business Agency	Regional management
Salzburg	Salzburg Innovations and Technology Transfer Agency	Alliances and associations in the regions
Styria	Styrian Economic Development Corporation	Regional management organizations in the large regions in Styria
Tyrol	Tyrol Location Agency, Planned Regional Coordination Office for Research and Innovation	Regional management associations at the regional level
Vorarlberg	Vorarlberg Business Location	Land Office of Vorarlberg for Future Affairs Societies and Associations in the Regions
Vienna	Vienna Business Agency	Local support offices and district management offices

(Gruber & Pohn-Weidiger, 2018, p. 47)

Municipal level

The municipalities in Austria are responsible for local spatial planning. They are the central planning level:

> The principle of abstract standard municipality applies. This means that all municipalities regardless of their size, population or resources must fulfill the same sovereign tasks. [...] The municipalities are independent economic entities and have the right to own all types of assets within the limits defined by the general federal and [federal province] laws [...] and define their own budgets. (Kanonier & Schindelegger, 2018, p. 64)

Before analyzing in detail the municipal's level planning procedures, we must understand it in the context of the multilevel spatial planning hierarchy in Austria. The figure 19 shows the spatial planning instruments at various planning levels. As shown in the table, the actual planning of permissible land uses is performed through zoning plans (zoning categories). Zoning plans are prepared by the municipalities, but they must clearly mark the federal government and federal province planning.

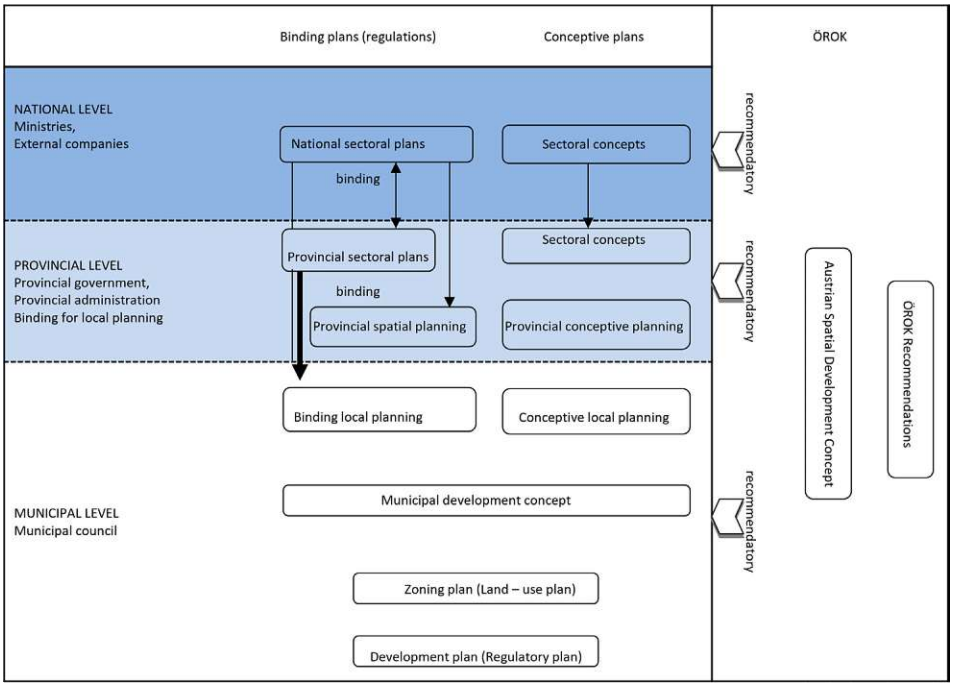


Figure 19 Relationship between planning instruments at various government planning levels *(Kanonier & Schindelegger, 2018, p. 77)*

The zoning plan (Ger. Flächenwidmungsplan) is usually drafted on a 1:5,000 scale in a digital form:

> As a rule, the zoning plan must clearly mark regional planning measures for all surfaces with an accuracy of detail down to the plots of land and define the zoning types based on the official digital cadastral register (DKM), in some cases based on ortho-photos. (Kanonier & Schindelegger, 2018, p. 105)

Zoning plans may vary from province to province in their content. According to the spatial planning laws in Salzburg (§43 Slbg ROG), the zoning plan must identify the following:

1. areas that are subject to restricted use based on federal and Land [federal province] laws, such as:

a) Forests in the meaning of the Forestry Act, and separately protective forests,

b) Natural monuments and areas subject to nature conservation rules,

c) Protected townscapes and historic monuments and regions,

d) Special protection areas under water laws,

e) Protected areas with mineral springs, resort districts,

f) Mining areas and similar under the Mineral Raw Materials Act [...],

g) Protective areas for roads and road planning areas,

h) Protective areas for utilities,

i) Areas for railways and cable cars where building is prohibited as well as safety zones for airports,

j) Safety strips for high-voltage lines,

k) Closed military zones,

l) Hazardous zones pursuant to the Munition and Explosives Act (Schieß- und Sprengmittelgesetz);

2. Hazardous zones and functional areas for forestry planning and water management;

3. Flood run-off areas pursuant to water laws;

4. Areas necessary for flood run-off and retention;

5. Suspected contaminated sites and legacy sites pursuant to the Act on the Financing and Implementation of the Remediation of Contaminated Sites [...]. (Kanonier & Schindelegger, 2018, p. 106)

The main contents of spatial planning laws are the zoning categories within the framework of the applicable law:

- Building lands (for residential purposes (maximum of two or more dwellings, secondary residences or holiday flats, and subsidy housing), commerce, industry, mixed-use areas, core areas, special zoning, and reserved areas)
- Traffic areas
- Undeveloped lands/farmlands (building restrictions apply for undeveloped areas – for farming. Recreation, sports, camping sites, small garden complexes, wind farms, aggradation areas, raw material extraction sites, and landfill areas).

All spatial planning laws subdivide the basic categories into further zoning and use types. The separation by the function of the building land is supplemented by a differentiation based on environmental impacts or protection from emissions.

A negative impact due to noise must also be taken into consideration when assessing the suitability of certain areas for a building land (Kanonier & Schindelegger, 2018, p. 109).

Zoning planning stages are defined by law as follows:

- Announcement of the intention to create or to change a zoning plan
- Basic research, interest considerations, and preparation of the first draft
- Strategic environmental planning procedures
- Presentation of the draft
- Possibility of submitting written statements of opinions
- Deliberations on statements received
- Resolution of the municipal council
- Promulgation of a zoning plan or of the changes to it.

Screening procedures and strategic environmental assessment

The strategic environmental assessment is, in general, a part of the preparation and amendment process for local development concepts and zoning plans. Meanwhile, for development plans, this is the case only in some federal provinces. For example, the draft for an amendment of a zoning plan must be exposed to public hearing with the possibility of submitting written statements of opinion, together with environmental reports. The planning authorities must consider the environmental reports and the respective statements of opinion in the zoning decision process. A summary declaration must explain how these have been considered.

In all provinces, development plans (Ger. Bebauungsplan) are hierarchically subordinated to local development concepts and zoning plans. They are usually drafted on a 1:1,000 or 1:2,000 scale. Their content is as follows:

- Scope of application: Demarcation of a planning area,
- Building lines [...] roads and distances from building to the property line,
- Building height [and] building classes,
- Building methods and the measure of building use,
- Traffic areas of the municipality [...],
- Markings: Content of the zoning plan [and] property boundaries. (Kanonier & Schindelegger, 2018, pp. 111, 112)

Limited-period zoning as a building land is a measure that provides “sanctions, such as rezoning of building land back to original status without compensation or charges” (Kanonier & Schindelegger, 2018, p. 116) if the land is not developed according to the plan within the deadline. The collection of infrastructure charges is mandatory after the issuance of building permits.

Informal planning

As we have mainly discussed the formal planning processes, it is very important to mention informal planning processes, which are increasing and finding

new cooperative forms between interested stakeholders: “The City of Vienna has prepared a new guidebook on participation entitled [...] (Practice Manual – Developing the City Together) that complies the methods and measures needed for the participation processes” (Kanonier & Schindelegger, 2018, p. 128). In various federal provinces, regions, and municipalities, local Agenda 21 is the framework for participation processes.

Changes in local spatial plans

“Municipalities are not permitted to zone land as building land indiscriminately (“building land minimisation mandate“), but must estimate building land needs for a certain planning period [of time]“ (Kanonier & Schindelegger, 2018, p.109). In another word, building land designated by the specific zoning may be a subject of correction in cases when due to concrete projects arise that it is not permissible to build due to environmental standards and environmental noise, among others. Corrections in the form of rezoning are permitted but require special conditions.

Changes in a plan are permissible, only with well-thought-out and logical consideration of interest based on basic research and analysis conducted by the authorities.

> [A] municipality may (continue to) zone an area as undeveloped land, although it is suitable as building land without exceeding its discretionary powers in an arbitrary manner. In this respect, property owners do not have a statutory right to specific zoning. (Kanonier & Schindelegger, 2018, p. 110).

Development moratorium

Municipalities may define a time-limited development moratorium for certain areas before issuing or amending local spatial plans, particularly zoning plans. A development moratorium loses effect when the amended plans for the areas concerned take effect or at latest two to three years after entering into force. Pursuant to the Vienna Building Code (§8(1) WBO), areas of the city that are not covered by development plans are subject to a development moratorium until such development plans are issued (Kanonier & Schindelegger, 2018, p. 130).

To summarize, the overview of the federal provinces and local spatial planning instruments in all nine federal provinces are given in Table 17.

Table 17 Instruments of regional spatial planning in Austria

Federal province Building Code	Strategic instruments	Zoning plans	Development plans
Burgenland Bgld RplG 1969 LEP 2011	Local development concept (ÖEK)	Zoning plan (§12–§20)	Development plan and partial development plan (§21–§27)
Carinthia Ktn GplG 1995	Local development concept (§2)	Zoning plan (§1) Development plan (§24–§31b) Integrated zoning and development plan (§31a)	
Lower Austria NÖ ROG 2014	Local spatial planning program (§13) Zoning plan (§14–§22) Local development concept (§13 Abs. 2 und 3)	Development plan (Section IV §29–§36)	
Upper Austria OÖ ROG 1994	Zoning plan with local development concept (§18–§30a)	Development plan (§31–§38)	
Salzburg Slbg ROG 2009	Spatial development concept (§23–§26)	Zoning plan (§27–§49)	Development plan (§50–§64) Ground level (§61) Extended ground level (§62) Extended level (§63)
Styria Stk ROG 2010	Local development concept (§21–§24) Joint local development concept (§23)	Zoning plan (§25–§39) Development zoning plan (§26 Abs. 4)	Development plan (§40, §41)
Tyrol TROG 2016	Local regional planning concept (§31–§34)	Zoning plan (§35–§53)	Development plan (§54–§62)
Vorarlberg Vlbg RPG 1996	Spatial development concept (§11)	Zoning plan (§12–§27)	Development plan (§28–§38)
Vienna WBO 1930		Zoning and development plan (§2–§12)	

(Kanonier & Schindelegger, 2018, p. 102)

Land-use trends and challenges in Austria

Austria has above-average land consumption but a below-average growth in developed land. In urban and intermediate regions, the level of growth in developed lands has been below the population growth, whereas in rural regions, the growth

of developed lands is faster than the population growth, resulting in an increased per capita land consumption in these areas. In particular, the core parts of metropolitan areas experienced a strong population growth without a corresponding increase in developed lands. By contrast, commuting zones of metropolitan areas saw smaller increases in the population and somewhat higher rates of growth of developed lands.[5]

The trend in spatial planning in Austria is moving toward a more regulation and greater differentiation. In practice, execution and application will become more difficult, and expert knowledge is of enormous importance. At the same time, the increasing digitalization of planning materials, such as planning acts, allows these materials to be available in a transparent form to the broad public. Moreover, the regulation procedures have been migrated to web-based systems (e.g., electronic zoning plan).

Austrian challenges for the future development ofresult from the current trends and tendencies, such as regional disparities, global competition, population growth, demographic change, climate change, and loss of farming land. “Therefore, the significance of governance-based informal planning processes as a supplement to the instruments of spatial planning is growing” (Gruber et al., 2018, p. 12).

3.2.3 Building Code and its Role in the Spatial Planning System

The building code is a mandatory spatial planning implementation instrument in Austria. It exists on the regional level in all nine federal provinces. The first City/federal province that introduced this kind of document in Austria was Vienna (see Subheading 2.1.2). As previously mentioned, planning acts are implemented primarily in building codes. Its function is to unify all spatial planning acts in a single document with clear provisions and regulations regarding spatial planning, environmental protection, and construction.

3.2.4 Vienna Building Code

Vienna as the capital city and a federal province is the exception case in Austria regarding the spatial planning and construction legislation because the planning and construction are performed according to the Vienna Urban Development, Urban Planning, and Building Code and not upon spatial planning and construction law as in another federal provinces.

5 OECD calculations based on the European Environment Agency 2012.

In Subheading 2.1.2, we have introduced the first Vienna building code and its content. In this subheading, we shall observe the main elements of the valid Vienna Building Code (StF LGBl. Nr. 11/1930 idF 71/2018).

The Viennese State Parliament has the competence to adopt the building code. The document has 12 sections (Table 18). The preamble contains seven articles considering general definitions and amendments of the building code in 1976, 1989, and 2007 and mandatory regulation acts.

The first section “Town planning” relates to zoning plans (land-use plans) and their amendments, energy plans, the content of the listed plans, described defined zones, and the procedure of adoption.

The second section “Modification of property boundaries” defines the procedure for the requirement of the license/notification, building requirements, and restrictions: procurement of building land – property purchases, building land consolidation, changes in the land register and rezoning.

The third section “Expropriations” defines permissible expropriations and the expropriation procedure.

The fourth section “Other ownership restrictions” defines the obligations of landowners regarding the authorities when maintaining or constructing infrastructure, construction sites, and building numbers, among others.

The fifth section “Resident benefits” defines a complex set of compensations mandatory for the municipality in the case of expanding the traffic area and obligations for residents to build and maintain roads and sidewalks and reimbursement of costs.

The sixth section “Indemnities” explains compensation policies; special provisions in the case of amendments of development plans due to narrowing, widening, or modification of the traffic areas; and redemption of real estate.

The seventh section “Formal requirements for building projects” defines the building permit procedure, beginning of construction, and deviations from the approved construction projects.

The eight section “Structural usability of the building height” introduces definitions of the building classification related to the permissible building heights in zoning plans (1:5,000), construction methods, structures, the incidence of light, build-up area, building height, and building outline with dimensions and all the other provisions related to development plans (1:2,000/1:1,000).

The ninth section “Building regulations” defines detailed planning provisions regarding mechanical strength and stability, fire protection, hygiene, health and en-

vironmental protection, user safety and accessibility, sound insulation and energy saving, and thermal insulation.

The tenth section “Rules considering the execution, use, and maintenance of the works” defines the role of contractor, use of neighboring land, laying of external cables, construction supervision, notice of the completion of construction, auditing a construction site diary, spatial planning registry, use and maintenance of buildings and irregular constructions, demolition, and responsibilities of a landowner.

The last two sections “Announcements “and “Authorities: Parties and stakeholders “conclude the document with the ultimate step in the planning and construction process, which is inscription and deletion in land registry and competencies and obligations of the authorities (e.g., transmission of data) and other stakeholders, subjective public neighborhood rights, construction penalties, and right to appeal.

Here, it is important to make a digression for the purposes of this research and to mention that even though the SC does not have a building code document, since the building permit procedure is the function of the Spatial Planning Law (Službene novine Kantona Sarajevo, 2017), we shall make a comparison with the Vienna Building Code (Table 18). It represents the spatial planning and construction act in a single document to focus on the paragraphs that are absent in the cantonal law, regarding the building permit procedure, which will be in the focus of our research analysis in the next section.

As we may conclude from Table 18, particularly interesting for the potential new SC building code might be the sections, chapters, and paragraphs of the WBO marked as absent in the SC Spatial Planning Law:

- Reference to previously valid spatial planning legislation in the preamble
- Spatial-planning registry
- Building land mobilization instruments
- Energy spatial plans
- Description and restrictions for zones defined by the zoning plan
- Description and restrictions for zones defined by the development plan
- Public good and land owners’ property rights and obligations
- Structural usability of building sites
- Inscription and deletion in the land registry.

Reference to previously valid spatial planning legislation is essential for the continuity in planning. Accordingly, the preamble of the WBO (1930) contains references to the building codes of 1883, 1890, 1920, 1927 and 1928 to previous plans (i.e., General Settlement Plan, WBO amendments of 1976 and 1989, feder-

al laws for federal roads, Austrian Central Statistical Office for the standard rate, Vienna Garage Act of 1957, and Urban Design Act of 1996).

The basis for sustainable spatial planning is defined with the spatial planning registry and the system of creating and management of inter-sectoral databases in the GIS.

The Viennese Building Code refers to spatial planning documentation – zoning and development plans by explaining each of the zones from the plan with the restrictions to it. Following the hierarchical logic of the order of plans, which we have understood from the previous chapter (zoning plan, development plan, and architecture design projects), the Viennese Building Code document introduces the rules for each of the plans in the sequence accordingly. Hence, in the first section, we have provisions from the EU level (directives) and national level, defined analytical basis for zoning plans, defined advisory council for urban planning and design, content of the zoning and development plans, permissible uses, protected zones, residential zones, big-scale construction projects zones, multi-purpose building projects, shopping malls, skyscrapers, and building ban.

Public good and land owners' property rights and obligations in the planning and execution of the plans process are clearly defined.

Section eight "Structural usability of the building sites" defines regulations considering construction in the zones defined by zoning and development plans.

Finally, the document is concluded with the obligation and explanation of the process of inscription and deletion in the land registry.

Table 18 Comparison of the content of the Viennese Building Code and Sarajevo Canton Spatial Planning Law

Vienna Building Code (WBO 1930)		**Sarajevo Canton Spatial Planning Law**
Preamble	Refers to Building Codes of 1883, 1890, 1920, 1927, and 1928 Refers to previous plans (General Settlement Plan) Refers to WBO amendments of 1976 and 1989 Refers to Federal laws for federal roads, Austrian Central Statistical Office for the standard rate, Vienna Garage Act of 1957, Urban Design Act of 1996	Does not exist No connection to previous legislation in the Preamble
(i) Town planning	Adoption and amendments of zoning and development plans	Section II Chapter IV Preparation, drafting, and adopting spatial planning documents §32–§40

Vienna Building Code (WBO 1930)		Sarajevo Canton Spatial Planning Law
	Measures taken by the municipality as a holder of private rights (spatial planning contracts)	Does not exist
	Procedure for adopting and amending zoning and development plans	§34 Decision on drafting or amending spatial planning documentation
	Basics for urban planning development (Spatial planning Registry)	Does not exist
	Energy spatial plans	Does not exist
	Advisory council for urban planning and design	Does not exist. Regulated by the cantonal law but by decisions of the local government level. The decision on creating the Sarajevo City Mayor's Advisory Council for Urban planning, Ecology and Design (Sarajevo Canton Official Gazette no. 32/17), Decision on creating Municipality Centre Sarajevo Mayor's Advisory Council for Spatial and Urban planning
	Content of the zoning plans	§20 Sarajevo Canton Land-use Plan
	Content of the development plans	§23 Regulatory plan
	Permissible uses	Does not exist
	Protected zones	§2, restrictions not defined in detail as in WBO
	Residential zones	Does not exist
	Zones for big-scale projects	Does not exist
	Shopping malls	Does not exist
	Multipurpose building project	Does not exist
	Shopping streets	Does not exist
	Skyscrapers	Does not exist
	Building ban	Section II Chapter II Building ban §8
	Announcement of building regulation Legal effects of building regulation Demarcation of the alignment lines	Does not exist in that form, but as Section II Chapter IV §51 Location Information and §54 Urban permit
(ii) Modification of property boundaries	A) Departments – required for the notification for the creation of building sites and lots, modification of building sites and lots, transfer of land to the public good, and alteration of land in forest and protected zones	Does not exist in that form, but vice versa for transfer of public good to restricted areas, and alteration of forest and protected zones to building land
	Undeveloped areas	§9

Vienna Building Code (WBO 1930)		Sarajevo Canton Spatial Planning Law
	Display and application requirements	Does not exist in that form, but as, but in Section II Chapter V – Arrangement of building land
	Assessment of the departmental project	Does not exist
	Land assignments to traffic areas in departments in building land	Does not exist in that form, but as Section II Chapter V Building permit–§69 obligation to be connected to traffic
	Assignment of land to traffic areas in the case of departments of construction management in agriculture land and specific areas	Does not exist in that form
	Building bans	Does not exist
	Expiry of the validity of the departmental notification	Does not exist
	B) Environment – building land consolidation, change in the Spatial planning registry, special provisions on mass distribution, rezoning, burdens, and legal disputes during the rezoning procedure	Does not exist in that form, but as, but in Section II Chapter I – Spatial changes and modifications
	C) Border adjustment	Does not exist
(iii) Expropri-ations		Does not exist. Expropriation Law (Federation BiH Official Gazette no. 70/2007, 36/2010, 25/2012, 8/2015 – Decision of Constitutional Court no. 34/2016)
(iv) Other ownership restrictions	Technical preliminary work Toleration of landowners toward public institutions Buildings and apartment numeration	Does not exist. Decree on Registry of spatial units (Sarajevo Canton Official Gazette no. 2/18)
(v) Resident benefits	Compensation for the assignment of land to traffic areas and reimbursement of costs Obligation of residents to build and maintain roads Sidewalk construction, reimbursement of costs, and additional payments	Does not exist.

Vienna Building Code (WBO 1930)		**Sarajevo Canton Spatial Planning Law**
(vi) Indemnities	Compensation policies Special provisions in the case of development plan amendments due to narrowing, widening, abandonment, or modification of the traffic areas Redemption of real estate	Does not exist.
(vii) Formal requirements for building projects	Application for building permit	Section III Chapter V – Building permit §68–§84 and Section III Chapter VII – Investment and technical documentation §95–§105
	Authorization of installations	
	Construction notification	
	Permit-free construction projects	
	Evidence for the building permit procedure	
	Blueprints	
	Signing of the construction plans: responsibility in the building permit procedure	
	Review of the construction project	
	Exceptions to the statutory building regulations	
	Deviations from the provisions of the zoning plan	
	Building negotiations and building permit	
	Simplified building permit procedure	
	Building permit procedure for small-scale structures	
	Permits for temporary buildings	
	Permit for long existing buildings (<30 years)	
	Special building permits	
	Temporary facilities for the accommodation of persons	
	Start of construction	
	Deviations from the approved construction projects	
	Validity	
(viii) Structural usability of the building sites	Building class classification and permissible building height	Does not exist
	Construction methods: structural usability	
	Structures	
	Insolation	
	Built-up area	
	Building height and building outline; dimensioning	
	Outbuilding	

Vienna Building Code (WBO 1930)		Sarajevo Canton Spatial Planning Law
	Components above the construction line or street alignment line	
	Components in front of the construction line and front gardens	
	Exterior design of buildings	
	Enclosures	
(ix) Building regulations	Definitions	Section III Chapter VI – Technical characteristics of buildings ion §85–§94
	General provisions	
	Mechanical strength and stability	
	Fire protection	
	Hygiene, health, and environmental protection	
	User safety and accessibility	
	Sound insulation and energy saving and thermal insulation.	
	Other requirements for buildings, components, and installations	
	Compliance with building regulations	
(x) Rules considering the execution, use, and maintenance of the work.	Role of contractor	Section III Chapter VIII – Stakeholders in project design and execution §106–§111 Section III Chapter IX – Construction site §112–§115 Section III Chapter X – Building use permit §116–§125 Section VI – GIS Registry Section IV Chapter I – Use and maintenance of buildings Use §126 Section IV Chapter II – Demolition §127–§131
	Use of neighboring land and laying of external cables	
	Construction supervision	
	Notice of the completion of construction	
	Auditing a construction site diary	
	Spatial planning registry	
	Use and maintenance of buildings and irregular constructions	
	Disassembling of house canals: Demolition Responsibilities of a landowner	
(xi) Announcements	Inscription and deletion in the land registry	Does not exist
(xii) Authorities: Parties and stakeholders	Competencies and obligations of the authorities (e.g., transmission of data) and other stakeholders Subjective public neighborhood rights Construction penalties Right to appeal	Section VII – Cantonal, city, and municipality levels Section VIII – Inspection Section IX – Penalty clause Section X – Transitional provisions

(Adapted from Sarajevo Canton Spatial Planning Law (Službene novine Kantona Sarajevo, 2017) and Vienna Building Code 1930)

Recent and planned reforms in the system of land-use planning

In general, the responsibility of the federated states for spatial planning was established in 1920 when the constitution was approved. Relevant legislative changes since then have occurred at the level of the federated states. More recent changes on the national level primarily occurred through the approval of subsequent versions of the Austrian Spatial Development Concepts in 1981, 1991, 2001 and 2011. The most recent version places a strong emphasis on the implementation of plans through thematic partnerships ("ÖROK partnerships"), regional governance, and integrated planning for urban agglomerations.

3.2.5 Building Permit Procedure

Magistrate's Office No. 37 of the City of Vienna is responsible for all issues considering building research, regulation, guidelines, and standards and issuing building permits. The accumulation principle determines that one procedure can be subjected to several laws and several permits. However, according to the concentration principle, these different laws and permits are subject to one procedure and one notification. The building code corresponds to the following laws:

- Waste legislation
- Labor law
- Tree protection legislation
- Historical preservation
- Railways and aviation legislation
- Shipping law
- Energy law
- Telecommunications law
- Law on fire protection
- Forestry law
- Commercial law
- Nature conservation
- Law on public assembly
- Water law
- Right of way
- Civil law and others (Leithner, 2019).

Viennese Building Code provides an overview of valid rules, as a basis for obtaining a building permit. Depending on preconditions, the WBO defines the following building permit procedures:

- Building permit procedure proper (Section 60)
- Simplified procedure (Section 70a)
- For small-scale structures (Section 70b)
- For temporary buildings (Section 71)
- For long existing buildings (Section 71a)
- Special building permits (Section 71b).

Neighbors and residents have rights and obligations defined for the building permit procedure.

Additional regulations that relate to the WBO are the Vienna Building Technology Regulation (Ger. Wiener Bautechnikverordnung (WBTW)) and the Austrian Institute for Building Technology Guidelines (Ger. OIB-Richtlinien). The OIB guidelines serve to harmonize the structural engineering regulations in Austria. The federal states may utilize the OIB guidelines in their building codes. The important bylaws to the WBO are as follows:

- Vienna Garage Act 2008 (WGarG 2008)
- Vienna Lift Act
- Vienna Building Act
- Vienna Canal Act
- Viennese Allotment Law
- Vienna Oil Firing Act.

Building permits expire if the building project is not commenced within four years after the permit has been granted or if the execution of the works is interrupted for more than two years. It can be extended on the application in justified exceptional cases (Section §74 WBO).

3.2.6 Planning and Coding as an Instrument of Creating a Land and Property Value

Two new planning instruments were established in the 1990s by the municipalities, with the support of the federal provinces: spatial planning contracts concluded between municipalities and landowners for the utilization of building lands in compliance with land-use plans and development and infrastructure costs that need to be paid by landowners for infrastructure and development charges and infrastructure taxes.

Property owners whose properties are zoned as a building land or that are likely to be zoned as a building land will probably not enter any obligations under building land guarantee contracts because there is no added value for them from these contracts. Therefore, contracts are effective mainly in

the case of new zoning of building land but not for combatting the excessive surplus of building land in municipalities. (Kanonier & Schindelegger, 2018, p. 116).

3.3 Republic of Slovenia

The SR Slovenia shared with the SR Bosnia-Herzegovina spatial planning legislative framework, while both republics were part of the SFRY (1945–1991).

In particular, the Republic of Slovenia, an EU member state, as a part of the major reforms adopted the new spatial planning act and the building code of 2017 (OECD, 2017). The building code in this case is a mistranslated construction law on a national level. The main concern of the Slovenian construction law is the protection of a public interest (§2 of the building law). Another curiosity is the regulation of technical guidelines, similar to the Austrian model, in §26 of the construction law and "other normative documents," such as technical guidelines for construction (TSG), defined European standard (SIST EN), the original Slovenian document on standardization (SIST), defined international standard (SIST ISO), and defined foreign standard (e.g., SIST DIN).

3.4 French Republic–Form-Based Coding or Morphological Zoning Coding Theory

Our theoretical journey began with the Paris building code, which affected the creation of the Vienna building code. Therefore, we shall conclude the comparative-historical analysis with the contemporary coding methodology in the French spatial planning system.

While the urban code (Fr. Code de l'Urbanisme) and national urban regulation (Fr. Règlement National d'Urbanisme) provide the overall framework and 'default' detailed regulations, the application of planning at the level of a region [13 regions], department [96 departments], and municipality [36.529 municipalities] are conducted through locally produced zoning plans. In accordance with the Solidarity and Urban Renewal Act (Fr. Loi Solidarité et Renouvellement Urbains–SRU) from December 13, 2000, these include:

- The territorial cohesion scheme (Fr. Schéma de Cohérence Territoriale–SCOT) is a strategic plan.
- The local land-use plan (Fr. Plan Local d'Urbanisme–PLU) is a zoning plan in a scale of 1:5,000.
- The municipal map (Fr. Carte Communale) is a zoning plan in a scale of 1:5,000.

Each municipal council, or an intercommunal group, is obliged to prepare a plan local d'Urbanisme (which replaced the Plan d'Occupation des Sols). Smaller single municipalities may elect to prepare the less elaborate Carte Communale.

- The key components of the PLU include:
- Analysis and rationale
- Planning and sustainable development objectives
- Specific planning objectives
- Plan
- Regulation (Fr. Règlement)
- Annexes (e.g., utility easements and noise exclusion zones) (Kropf, 2012, pp. 163, 164).

The PLU is the main planning instrument for development in the French planning system, and it is this level on which design codes are operating within the French system. Coding is the main instrument for development control.

Like in the Sarajevo spatial planning legislation, the French land-use or zoning plan (Fr. Plan Local d'Urbanisme) contains the written regulations of the Règlement and regulatory plan (Fr. Plan de Zonage). However, unlike Sarajevo, French cities have an urban code (Fr. Code de l'Urbanisme or the Urban Code), which sets general rules.

Table 19 Structure of Règlement

I.	Permissible land use. a. Types of permissible land use b. Types of land use that are subject to specific conditions.
II.	Conditions for land use
III.	Access and public highways
IV.	Services
V.	Ground conditions
VI.	Position of buildings relative to public highways
VII.	Position of buildings relative to side boundaries
VIII.	Position of buildings relative to each other within a plot
IX.	Building ratio
X.	Maximum building height
XI.	Facades
XII.	Car parking
XIII.	Open and green spaces (planting)
XIV.	Maximum land-to-building ratio
XV.	Maximum land-to-building ratio

Zoning Plan of the City of Paris's Règlement (Adapted from Mairie de Paris, 1989, Institute for Canton Planning, Pelja-Tabori, own presentation)

The Règlement is the complementary document to the plan that defines the building regulation. It has its mandatory structure of three main sections and 14 articles (Table 19). In addition to the main structure of the Règlement, there are several underlying principles that are important: public street and private property, border line (limit), buildable area, relative position, and definition of form typologies (Kropf, 2012, pp. 165–170).

The Règlement of the Plan Local d'Urbanisme de la Ville de Paris defines regulations for each zone (e.g., U.A., U.C., and U.F.) represented within the borders of a certain plan (e.g., 1º = the zone U.A., where the "Beaujon" Plan is located). Regulations include the relationship of the building section height toward the main street width, concerning the view rights (Fr. Droits de vues), maximum building height, modifications of existing buildings, and possibilities of reconstruction (see Figure 20).

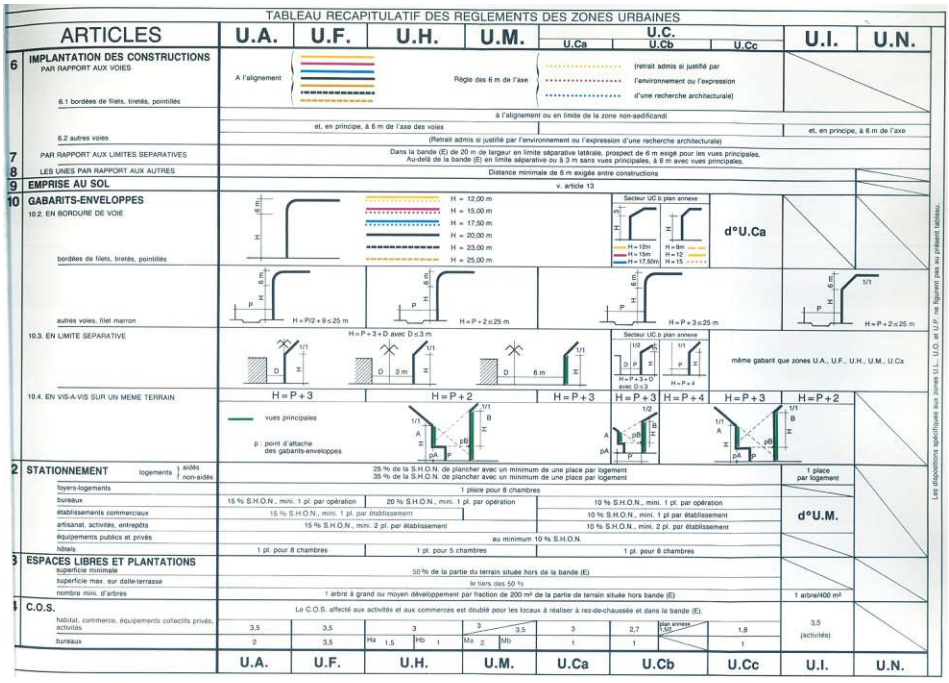


Figure 20 Zoning plan of the City of Paris's Règlement *(Mairie de Paris, 1989)*

More particular regulations and calculation sketches, such as distances between buildings, or mandatory insolation angle defining the building height and building section are presented in the Règlement document for each zone (see Figure 21). Typo-morphological zoning is combined with spatial planning documentation.

> Both systems define generic types of form in terms of the relative position of elements and the relation of part-to-whole, which generates a hierarchy of levels of scale [...]. The correspondence between the two lies in the ge-

neric structure of the systems rather than the specific content of the codes. The strength of both is the capacity to describe or prescribe a wide range of forms with a consistent degree of detail regardless of the specific forms. (Kropf, 2012, p. 173)

The French planning system recognizes a “typo-morpho” analysis as a part of the preparation process for the land-use plan. The characteristics for each zone are used for codification of the same zone:

The typo-morphological descriptions were fairly easily translated into the prescriptions of the codes with the aim of maintaining the character of the area […]. The more innovative step was to use the characteristics of existing areas as the basis for the codes for new areas, either within the existing built-up area (resulting in the transformation of existing forms) or for the extension of the urban territory. New development could be built according to the positive and relevant characteristics of the historic core of the settlement. This is a direct means of ‘learning from history. (Kropf, 2012, p. 173)

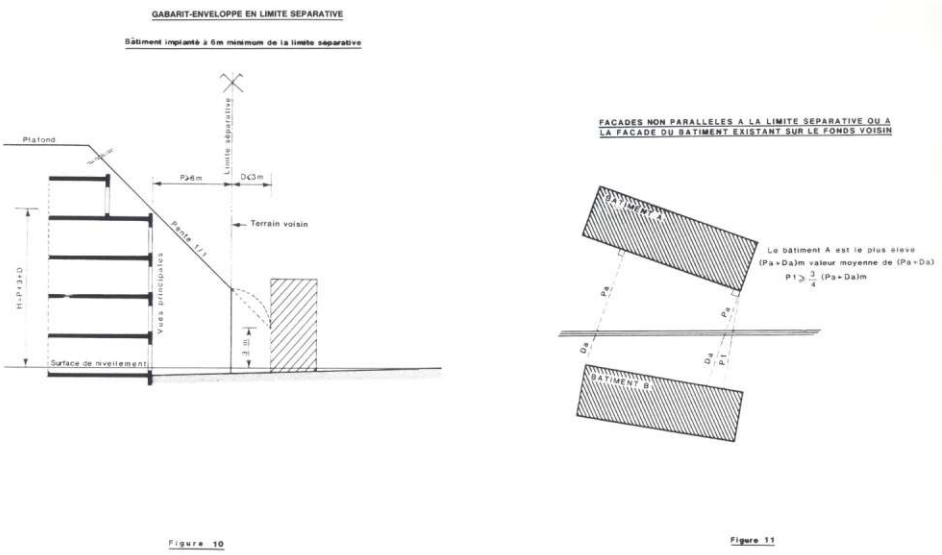


Figure 21 Zoning plan of the City of Paris’s Règlement, building distances, and insulation angles *(Mairie de Paris, 1989)*

The form-based approach to coding takes into account the existing forma urbis and transforms it to a rule, which makes the process of coding rooted in the genius loci of the city and its codification designed and adapted to local building conditions:

The typo-morphological approach makes explicit use of the type as a basis for codes at the various levels of scale. As elaborated by Caniggia

et al., the type is in essence a repeated arrangement of common elements with sociocultural roots. (Canigga & Maffei, 2001, as cited in Kropf, 2012; Castex et al., 1977, as cited in Kropf, 2012; Castex et al., 1980, as cited in Kropf, 2012)

American New Urbanists developed a form-based code theory to oppose Euclidian zoning codes. Form-based codes include the following elements:

- Regulatory plan
- Building form standards (architectural design standards and sign standards)
- Public space standards (streetscape standards)
- Administration
- Definitions/annotated glossary (Parolek et al., 2008).

The main differences between traditional codes and form-based codes are as follows: Conventional codes are auto-oriented and organized around single-use zones. Their use is primary; they are reactive to individual development proposals and have proscriptive regulations that define what is not permitted; and they regulate to create buildings. By contrast, form-based codes are compact development-oriented and based on spatial organizing principles that reinforce urban hierarchy. Physical form and character are primary, whereas use is secondary. They are initiative-taking community visioning, and they have prescriptive regulations describing what is required. Finally, they are regulated to create places, not buildings (Table 20).

Table 20 Comparison of zoning codes and form-based code characteristics

Conventional planning and zoning codes	**Form-based codes**
Auto-oriented, segregated land-use planning principles	Mixed use, walkable, and compact development-oriented principles
Organized around single-use zones	Based on spatial organizing principles that identify and reinforce an urban hierarchy, such as the rural-to-urban transect
Use is primary	Physical form and character are primary, with secondary attention to use
Reactive to individual development proposals	Initiative-taking community visioning
Proscriptive regulations, regulating what is not. Permitted, and unpredictable numeric parameters, like density and FAR	Prescriptive regulations, describing what is required, such as build-to lines and combined min/max building heights
Regulates to create buildings	Regulates to create places

(Parolek D., Parolek K., & Crawford P.C., 2008)

The form-based coding and Règlement document may be particularly useful for the Sarajevo case study and the fact that existing decisions of implementation do

not contain regulations structured and defined by the law. Zones containing regulations as an additional layer in land-use plans do not exist in the SC because building regimes correspond only to land-use planning documentation. The conclusions shall be taken into account and delivered in Sections 5 and 6.

3.5 Sarajevo Canton Planning System in the BiH Legislative Framework

The first part of this section will provide an overview of the SC political framework, whereas in the second part, the spatial planning legislative framework in the SC will be described in detail.

3.5.1 Political Framework and Spatial Conditions

"Until April 5, most of Sarajevo's citizens – Muslims, Serbs, Croats, Yugoslavs, and Jews alike had clung to the complacent conviction that war could never happen in their city."
Silber & Little
With the time distance, I may declare that we were so naïve …

The Yugoslav wars culminated with the siege of Sarajevo, which lasted from April 1992 to November 1995. It was "the worst conflict Europe has seen since 1945, with more than 250,000 deaths and two million people displaced" (Benkova, 2016, p. 1).

Donia (2006), in his book "Sarajevo, A Biography," precisely describes the unbearable lightness of surprise of global and regional audience with the war that changed lives and being of ex-Yugoslavia region for good:

> The Bosnian War of 1992-5 horrified and captivated the global human community like no other conflict in half a century. Many were shocked because people were dying and suffering in a part of Europe where most believed that slaughter would never again be countenanced. Bosnian Serb nationalists, benefiting from the superior weaponry they received from the JNA [Yugoslav National Army], resurrected the mediaeval siege in the service of modern nationalism, producing a welter of ironies. The daily violence was conducted under the scrutiny of international civil servants, aid workers, "peacekeepers," journalists, and scholars (including this author) who could travel with relative ease on conveyances not available to the local population. (Donia, 2006, p. 287)

The siege lasted for four horrible years and left physical consequences and many open questions that will affect decades to come. The Dayton Peace Agreement

(UN General Assembly Security Council, 1995) was formalized on November 21, 1995, in Dayton, Ohio, and signed in Paris, almost a month later. The Agreement, signed by the presidents of the Republic of Bosnia-Herzegovina, Republic of Croatia, and Federal Republic of Yugoslavia, “brought an end to the tragic conflict in the region” (UN General Assembly Security Council, 1995, p. 2) by subdividing the Republic of Bosnia-Herzegovina into two entities: the Federation of Bosnia-Herzegovina (FBiH) and Republika Srpska (RS) and a special unit – Brčko District (BD) (see Figure 22).

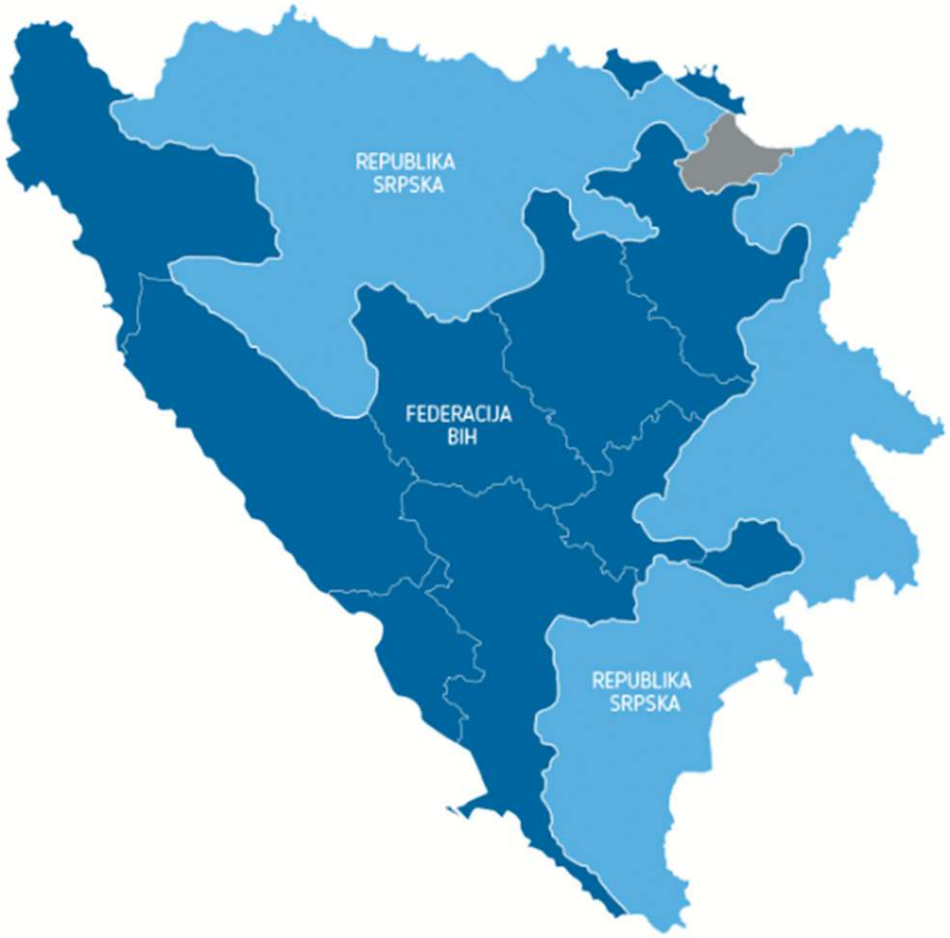


Figure 22 Federation of BiH (dark blue) and Republika Srpska (light blue) with Brčko District (grey) *(https://een.ba/)*

The entities were divided with the “inter-entity boundary line” (UN General Assembly Security Council, 1995, p. 47). The Agreement included 11 annexes (p. 4) (Table 21). Annex 4 of the Constitution states that “Recalling the Basic Principles agreed in Geneva on September 8, 1995, and in New York on September 26, 1995, Bosniacs, Croats, and Serbs, as constituent peoples (along with others)

and citizens of Bosnia-Herzegovina hereby determine that the Constitution of Bosnia-Herzegovina is as follows […]" (UN General Assembly Security Council, 1995, Annex 4, p. 59).

Table 21 Content of the Dayton Peace Agreement

Annex 1-A	Agreement on the Military Aspects of the Peace Settlement with the following: Appendix B to Annex I-A: Agreement between the Republic of Bosnia-Herzegovina and the North Atlantic Treaty Organization (NATO) Concerning the Status of NATO and its Personnel. Agreement between the Republic of Croatia and the North Atlantic Treaty Organization (NATO) Concerning the Status of NATO and its Personnel. Agreement between the Federal Republic of Yugoslavia and the North Atlantic Treaty Organization (NATO) Concerning Transit Arrangements for Peace Plan Operations
Annex 1-B	Agreement on Regional Stabilization
Annex 2	Agreement on Inter-Entity Boundary Line and Related Issues Appendix to Annex 2: 1:600,000 scale UNPROFOR road map and a 1:50,000 scale Topographic Line Map
Annex 3	Agreement on Elections Attachment to Annex 3: Document of the Second Meeting of the Conference on the Human Dimension of the Conference on Security and Cooperation in Europe, Copenhagen, 1990 (§7 and 8)
Annex 4	Constitution Annex I – Additional Human Rights Agreements to be Applied in BiH. Annex II – Transitional Arrangements
Annex 5	Agreement on Arbitration
Annex 6	Agreement on Human Rights
Annex 7	Agreement on Refugees and Displaced Persons
Annex 8	Agreement on the Commission to Preserve National Monuments
Annex 9	Agreement on Bosnia-Herzegovina Public Corporations
Annex 10	Agreement on Civilian Implementation
Annex 11	Agreement on the International Police Task Force

(UN General Assembly Security Council, 1995)

Ethnic cleansing was legitimized by having, as a consequence of war, Bosniacs and Croats as the majority in the Federation and Serbs as the majority in the Republika Srpska. This "neo-medieval order concept of territorialism" (Faludi, 2018, pp. 2, 3) when translated to human rights has produced inequality that resulted in lawsuits against the state of Bosnia-Herzegovina, which became prerequisites for the EU integration process, to be mentioned later in this paragraph.

The siege was over four years:

> The long siege and war came to an end during the first months of 1996, but the consequences of armed conflict have hung like a pall over the city

> for years since, in addition to war losses and damage, the city has had to cope with holdovers from the social past, including social ownership, powerful syndicate organizations, and a complex legal system that favored the entrenched bureaucracy. Other than the considerable early progress in physical reconstruction, most developments toward a new post-war life for the city gained momentum only with the arrival of the 21st century. The city's emergence from the shadow of war has been slow, incremental, and often set back by obstruction from nationalists in both Republika Srpska and the Federation of Bosnia-Herzegovina. The war dealt a severe blow to the city's common life, notwithstanding the efforts of many brave Sarajevans to keep it alive during the siege. The contrast with recovery after the Second World War could not have been greater. The triumphant Partisans had given Sarajevans a clear if idealized vision of a new society and a transformed city to be constructed in the aftermath of the war and liberation. In 1996, however, there was no sense of victory, no inspiring vision to compel popular engagement in remarking the city. (Donia, 2006, p. 335)

The destruction was massive, and it included all physical structures and infrastructure networks:

> The city received more than its share of the $ 5 billion pledged by the international community to aid the recovery of post-war Bosnia-Herzegovina. International civil servants oversaw the restoration of gas, electric, and telephone services to the city, with most of the work done by local workers and enterprises. (Corruption immediately became an issue, as funds found their way into the pockets of local profiteers with the aid of well-placed political operatives). (Donia, 2006, p. 343)

According to the Dayton Agreement, the governing structure of Bosnia-Herzegovina was strongly decentralized: "with most government powers held at the entity level and below" (O´Brien, 2010, p. 335). This, among other causes, brought to the autonomy aspirations of Republika Srpska and disabled cooperation between the entities on the state level. The Federation of Bosnia-Herzegovina is divided into 10 cantons, while Republika Srpska does not have this kind of meso-government level and is subdivided into municipalities (Figure 23). The different governmental levels within Bosnia-Herzegovina are described in detail in Table 22.

In Article I, point five of the Constitution, Sarajevo was chosen to be the capital city of Bosnia-Herzegovina (UN General Assembly Security Council, 1995, p. 60), even though "its significance is diminished by the very weak central government defined in the Dayton Agreement" (Donia, 2006, p. 336).

The former City of Sarajevo is divided with the inter-entity line (see Figure 24). The SC covers an area of 1,277 km² or 60.92% of the former City of Sarajevo's

administrative territory (2,096 km²). Another part of the former City of Sarajevo is in the Republika Srpska, which is called East Sarajevo. Parts of the municipalities (i.e., Stari Grad, Novo Sarajevo, Novi Grad, Ilidža, Trnovo, and the whole municipality of Pale) belong today to the City of East Sarajevo. The SC has its constitution upon which it consisted of nine municipalities (Ustav Kantona, 1996/2017, p. 2) (see Figure 24). Today, the City of Sarajevo administratively consists of four central municipalities (Stari Grad, Centar, Novo Sarajevo, and Novi Grad) (Ustav Kantona, 1996/2017), which covers 141.5 km² (Figure 24).

Figure 23 Ten cantons of the Federation of BiH *(https://commons.wikimedia.org/wiki/File:Bih_cantons_en.png)*

The joint actions of the SC and East Sarajevo, as inter-municipal cooperation, was organized by the Sarajevo Economic Regional Development Agency (SERDA).[6] The agency was established in 2001 to make "an administrative and legal framework for the realization of initial activities in the realization of the concept

6 The Sarajevo Economic Region consists of 26 municipalities. The idea of the Sarajevo Region was born in the early 1980s (see Subheading 3.5.6.)

of economic reintegration and development of the Sarajevo Economic Region" (SERDA, 2019).

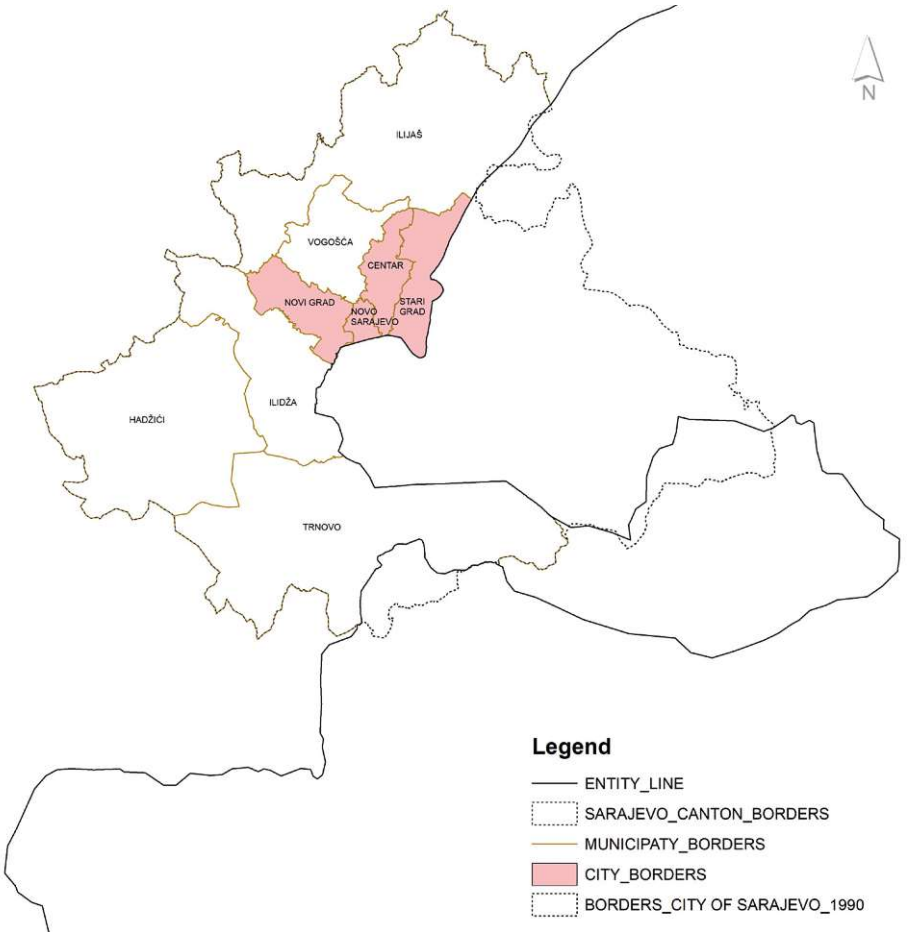


Figure 24 Canton Sarajevo with its nine municipalities. Present City of Sarajevo – four out of nine municipalities (red) and area of former City of Sarajevo – today East Sarajevo (outline border – dot line) *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Table 22 Government levels in BiH

National	State	
Sub-national	Entity	Federation of BiH (FBiH)
		Republika Srpska (RS)
	District	Brčko District (BD)
Regional	Cantons	10 Cantons (FBiH)
Local	City	17 (FBiH 9, RS 8)
	Municipality	144 (FBiH 79, RS 64, BD 1)

(Federal Institute for Statistics and the Republika Srpska Institute for Statistics)

Table 23 Governmental pyramid on the territory of Sarajevo Canton and East Sarajevo

Sub-national	(Entity Level)	Federation BiH	Republika Srpska
Regional	(Cantonal level)	Sarajevo Canton (Municipalities: Stari Grad, Centar, Novo Sarajevo, Novi Grad, Vogošća, Ilidža, Ilijaš, Hadžići, Trnovo)	No meso-level subdivision*
Local level	City level	City of Sarajevo (Municipalities: Stari Grad, Centar, Novo Sarajevo, Novi Grad)	City of East Sarajevo (Sokolac, Pale, Istočni Stari Grad, Istočno Novo Sarajevo, Istočna Ilidža i Trnovo)
	Municipality level	9 Municipalities	6 Municipalities

**Nadin et al., 2018, p. 15 (Pelja-Tabori, own presentation)*

The operational coverage of municipalities in which the SERDA is active is growing continuously from its establishment until today: “In the second phase, the Memorandum on Mutual Co-operation between the municipalities of the Sarajevo Economic Region, SC and the City of East Sarajevo was signed” (SERDA, 2019). Despite the existence of the SERDA and its projects, regional planning between the SC and East Sarajevo is not happening due to the absence of a legislative framework for cross-border planning and sectoral planning in the sector of infrastructure and environmental protection.

Table 24 Bosnia-Herzegovina in relation to EU Enlargement Step

Step	**Accords**	**Bosnia**
Pre-Adhesion Agreement	Stabilization and Association Process	1999
	Potential Candidate	2003
	Stabilization and Association Agreement (SAA)	2007–2015
	Program signed PHARE, ISPRA, SAPARD, poi IPA	2007
	Candidate Status	…
Screening	Started Screening Step	…
Negotiation	Chapter Discussed Period	…
Adhesion	Treaty adhesion signed	…

(Nadin et al., 2018)

Donia (2006) wrote that

> The combination of obsolescence, nationalist obstruction, corruption, legal ambiguity, and political uncertainty has precluded the rejuvenation of Sarajevo’s economy. Even though the city has reaped the benefits of the international presence for the past decade, Sarajevans today earn only a small fraction of what they did in 1970 and are correspondingly impover-

> ished. Despite some progress, the dearth of economic prospects inhibits advances in other areas of the city's life. (Donia, 2006, p. 336)

With the implementation of the Dayton Agreement, it became clear that not all are equal before the law and entitled without any discrimination to the equal protection of the law. The constitution neglected and jeopardized the rights of others, as defined in the Agreement, which was brought to the Sejdic and Finci Case vs. Bosnia-Herzegovina decided by the Grand Chamber of the European Court of Human Rights on December 22, 2009 (Application nos. 27996/06 and 34836/06). The implementation of the court's judgement requires an amendment to the Dayton Constitution.

> The execution of the Sejdić-Finci judgement of the European Court of Human Rights is a key prerequisite as it promotes equal political rights for all BiH citizens. Its implementation would not mean automatic accession to the EU but would be a significant step in that direction. Since the judgement's delivery in 2009, however, little has been done to address this complex issue. (Brljavac, 2011)

Alongside a layer of divided country and divided city, Bosnia-Herzegovina and Sarajevo are parts of the ambiguous EU perspective since the application to join the EU in 2016 (Benkova, 2016, p. 3).

> The Commission adopted its Opinion (Avis) on the EU membership application of the country in May 2019, identifying 14 key priorities for the country to fulfil in view of opening EU accession negotiations. The EU Council endorsed the Opinion and key priorities in December 2019. The Opinion constitutes a comprehensive roadmap for deep reforms in the areas of democracy/functionality, the rule of law, fundamental rights, and public administration reform. (European Commission, n.d)

This unfortunate position of a potential applicant and a divided country contributes to the already three decades of stagnation or the status quo in which scars from the war are not so evident anymore. However, the rule of law has not yet been established yet as a basis for the reformed spatial planning system adapted to the market economy on the one hand and social dignity and permanent building peace on another. The question of whether the "eternal applicant label is the responsibility of the EU or the political elites of Bosnia-Herzegovina" remains unanswered. One is certain – Bosnia-Herzegovina is a special case:

> Bearing in mind the fact that Bosnia-Herzegovina is seriously lagging behind other countries from the Western Balkans on the way to EU membership, it seems that Bosnia is a 'special case' or a sui generis country for the EU officials. (Brljavac, 2011, p. 1)

The integration process definitely went to a blind diverticulum:

> Although it was thought that the process of European integration, which started in the aftermath of the war in 1995, would bring political stability, economic prosperity, and social harmony to Bosnia-Herzegovina, it has not happened so far. In other words, most of the strategies that the EU has used in Bosnia has ended in failure, except for a new state agency, police reform, and visa liberalization. (Brljavac, 2011, p. 2)

The requests in the form of EU conditionality should have boosted internal reforms, but in Bosnia-Herzegovina case, it fixed the positions of the ruling elites:

> while many expected that Europeanising reform process will have a critical impact on the crisis-driven Western Balkans region and especially Bosnia as its very unstable part, the entire process resulted in fixed positions of ethno-nationalists that are ready for Brussels only at a declaratory level. (Brljavac, 2011, p. 8)

The result is the so-called Bosnian paralysis: “leaving Bosnians to explore the options that befall a failed state – located within Europe but on the margins of its prosperity and unity – is to simply acknowledge a bankruptcy policy” (Abramovitz & Hooper, 2010, as cited in Brljavac, 2011).

The dissonance between European values as a starting point for reforms or fulfilling EU conditions for membership and the opposing interests of the constitutive elites should at one point come to an end, which would mean a new fresh start for the country.

As the time or more precisely as decades pass, Bosnia-Herzegovina shall be in a different position from, like Slovenia that joined the EU in 2004, because “the wasted time” has its expression in adoption costs and benefits:

> It should be noted that political and administrative adoption costs are generally higher for current candidates than in, for instance, the previous CEE cases, and that state capture has become more entrenched than in the previous accession rounds. This is why local elites reminisce about the time when the EU’s pre-Lisbon enlargement approach was less challenging and that the current membership criteria are more dynamic and filled with many “non-codified” principles, which seem unrealistic and unattainable. In that sense, maintenance and promotion of GNR for BiH political elites heavily rely on the norm reception by other regional actors in the region and their respective actions. BiH’s compliance with the proposed transformative outcomes, in most cases, comes as either imitation or following others, but not from the norm quality itself. The norm as such is usually bypassed, ignored, or contested. BiH political elites have previously developed a pattern of utilizing push-back strategies that diminish the

> overall impact of the externally driven initiatives in the long-term and which dishearten further political mobilization from below. (Schimmelfenning & Sedelmeier, 2020, Hasić & Karabegović, 2018, Hasić et al., 2020 as cited in Brljavac, 2011)

As a conclusion, we shall bridge between the norm quality of the proposed transformative outcomes and building code, which is the focus of this research. If Bosnia-Herzegovina reaches a point of establishing a norm quality and begins reforms for the sake of its own well-being and not because it is obliged to, the areas of the rule of law and public administration shall be of particular interest for the creation of the new building code, as explained in Section 5.3.

3.5.2 Spatial Planning System

Bosnia-Herzegovina as a potential candidate for EU membership since 2016 may have EU spatial concept documents as guidelines for sectoral planning, although the spatial planning system would have far reached benefits if the country would reach candidate status. The structure of Bosnia-Herzegovina spatial planning system follows its governmental vertical division into two entities (the Federation of Bosnia-Herzegovina and Republika Srpska) and the Brčko District. The horizontal hierarchy defines that the FBiH consisted of 10 cantons with 9 cities and 79 municipalities, the RS consisted of 8 cities and 64 municipalities, and BD consisted of 1 municipality. Sarajevo and Tuzla are cantons and cities. Meanwhile, Sarajevo has the status of a capital city.

Table 25 General data about Bosnia-Herzegovina

Location:	Southeast Europe
Topography Number of inhabitants Cities over a million inhabitants	From Dinaric Alps to the Adriatic Sea 3.5 mil Sarajevo 302.899
GDP	$ 50 billion

(Federalni zavod za statistiku, 2019)

According to the Bosnia-Herzegovina Constitution, spatial planning is the responsibility of the entities and is not on a national level (Nadin et al., 2018, pp. 63–65). According to Annex II of Annex 4, Article 2 of the BiH Constitution – Continuation of Laws:

> All laws, regulations, and judicial rules of procedure in effect within the territory of Bosnia-Herzegovina when the Constitution enters into force shall remain in effect if consistent with the Constitution, until otherwise is determined by a competent governmental body of Bosnia-Herzegovina

UN General Assembly Security Council. (UN General Assembly Security Council, 1995, p. 76).

This Article enabled some Yugoslav sectoral laws to remain in force even today. According to the Federation of BiH Constitution, federation responsibilities are, among others, defining the economic policy, including planning, reconstruction, and land use on a federal level (Chapter III Article 1, paragraph d). In Article 2, paragraph c of the Federal Constitution, joint federal and cantonal responsibilities are, among others, "environmental protection policy" (Službene novine Federacije BiH, 1994, p. 4).

Sub-national (FBiH and RS) and regional (cantons) governmental levels enact laws and by-laws in the spatial planning sector. Laws and bylaws (i.e., decisions, decrees, and rulebooks) on the federal level are adopted by the federal parliament; on the cantonal level by the cantonal government; on the city level by the city council; and on the municipality level by the municipality council. In sectors with shared responsibilities between the Federation and Canton, laws and by-laws are enacted on both levels and must be harmonized with higher government levels (Table 26). At the bottom of the government pyramid in FBiH, RS, and BD, there are local governments (cities and municipalities) with their responsibilities in the spatial planning process according to the law on local self-government (Službene novine Kantona Sarajevo, 2000), the Spatial Planning Law (Službene novine Kantona Sarajevo, 2017), and the decree on uniform methodology for producing spatial planning documentation (Službene novine Federacije BiH, 2004).

In the present Bosnia-Herzegovina, each entity and all 10 cantons in FBiH have their own legislation framework, which makes a "rather uncoordinated system, both vertically and horizontally" (Nadin et al., 2018, p. 17). There is no national and entity strategy or a concept as a guideline for inter-entity and inter-cantonal cooperation. The spatial planning law and construction law are on the federal level, whereas cantons practice two models of spatial planning and construction legislation. One is the spatial planning and construction law as a single act, and the other is the spatial planning law and construction law as two separate acts.

Five cantons in FBiH have a spatial planning and construction law as a single document as follows:

- Bosnian–Podrinje Canton Goražde Spatial Planning and Construction Law (2009)
- Tuzla Canton Spatial Planning and Construction Law (2011, 2013, and 2016)
- Una–Sana Canton Spatial Planning and Construction Law (2013)
- Zenica–Doboj Spatial Planning and Construction Law (2014)
- Posavina Canton Spatial Planning and Construction Law (2015).

Table 26 Spatial planning legislation in Sarajevo Canton

Governmental Level	Name and No. of Official Gazette	Law
Federation of Bosnia-Herzegovina	FBiH Official Gazette no. 02/06, 72/07, 32/08, 4/10, 13/10 and 45/10	Spatial Planning Law and Land use on the FBiH Level
	no. 55/02	Construction law on the FBiH Level
	no. 33/03, 38/09	Law on Environmental Protection
	no. 33/03	Law on the Environmental Protection Fund of F BiH
	no. 33/03 and 72/09	Law on Waste Management
	no. 66/13	Law on Nature Protection
	no. 70/06	Law on Waters
	33/03 and 4/10	Law on Air Protection
	no. 66/13	Law on Electric Energy
	no. 70/13, 5/14	Law on Renewable Energy Sources and Efficient Cogeneration
	no. 63/04, 50/07	Decree on a uniform methodology for producing spatial planning documentation
	no. 101/15 and 1/16	Decree on the Conditions for Discharging Wastewater into the Environment and the Public Sewage System
	no. 43/07	Decree on Hazardous and Harmful Substances in Waters
	no. 12/05	Rulebook on Air Quality Monitoring
	no. 12/05	Rulebook on Limit Values of Emissions of Pollutants in the Air (F BiH Official Gazette
	no. 19/04	Rulebook on Plants and Facilities for which the Environmental Impact Assessment is Compulsory
	no. 82/07	Rulebook on Plant and Pollution Register
	No. 65/06	Rulebook on the Content and Methods of Drafting the Management Plan for Protected Areas
Sarajevo Canton	Sarajevo Canton Official Gazette no. 24/17, 1/18	Spatial Planning Law
	41/08	Law on the Environmental Protection Fund of Sarajevo Canton
	18/10	Law on Waters of SC
	14/16, 43/16, 19/17, and 10/17	Law on Communal/utility Services
	30/17, 46/17	Law on Traffic Regulations in the Sarajevo Canton
	23/16	Law on Protection against Noise
	5/99, consolidated text 14/00, 4/02	Land-use Plan for Sarajevo Urban territory for the period 1986-2015 (Municipalities: Stari Grad, Centar, Novo Sarajevo, Novi Grad, Ilidža and Vogošća)

Governmental Level	Name and No. of Official Gazette	Law
		Land-use Plan for Hadžići Urban territory for the period 1986-2015 Land-use Plan for Ilijaš Urban territory for the period 1986-2015 Land-use Plan for Trnovo Urban territory for the period 1986-2015 Land-use Plan for Pale Urban territory for the period 1986-2015
	37/14	Land-use Plan amendments for Sarajevo Urban territory for the period 1986-2015 (Stari Grad, Centar, Novo Sarajevo, Novi Grad, Ilidža and Vogošća)
	9/00, 26/05	Land-use Plan for Ilijaš Urban territory for the period 1986-2015
	26/06	Sarajevo Canton Spatial Plan for the period 2003–2023
	4/11	Phase “A” Sarajevo Canton Spatial Plan Amendments for the period 2003–2023.
	22/17	Phase “B” Sarajevo Canton Spatial Plan Amendments for the period 2003–2023.
	5/00	Decree on urban and technical conditions, space standards and norms for barrier-free environment, accessibility requirements, and standards for disabled persons who use technical and orthopedics aids
	6/06, 18/07, 18/08, 35/12, 51/15	Decision on the legalization of buildings constructed without building permits and temporary buildings

Moreover, four cantons in FBiH have recently adopted construction laws as separate acts from spatial planning law:

- Herzegovina–Neretva Canton Construction Law (2013)
- West Herzegovina Canton Construction Law (2013)
- Central Bosnia Canton Construction Law (2014)
- Canton 10 Construction Law (2016).

Based on the above-mentioned data, all these cantonal acts have been enacted recently in the last nine years. The SC is the only canton that does not have neither a construction law as a separate act nor a spatial planning and construction law as a single act. It has only the Spatial Planning Law (2017), which is officially the legislative inheritance of the SRBiH and was amended for the first time during the war (Službeni list RBiH, 1994). The amendments implied the nulling of urban, building, and building control permits if issued contrary to the law or in the case of inspection and economic offences.

Table 27 Content of the Sarajevo Canton Spatial Planning Law of 1999, 2005, and 2017

Content	1999	2005	2017
(i)	General provisions		
(ii)	Spatial organization		Town planning
(iii)	Environmental protection	Planning	Spatial planning documentation implementation
(iv)	Planning	Spatial planning documentation	Building use and maintenance
(v)	Parcellation and building land arrangement		Service center for Spatial planning and construction department
(vi)	Building Permission		Information system for spatial planning database
(vii)	Construction	Investment and technical documentation	Delegating assignments from cantonal government to city and municipalities
(viii)	Documentation service	Construction	Inspection supervision
(ix)	Inspection supervision	Permission of use of a building	Penalty provisions
(x)	Penalty provisions	Building demolition	Transitional and final provisions
(xi)	Transitional and final provisions	Documentation service	
(xii)		Delegating assignments from cantonal government to city and municipalities	
(xiii)		Inspection supervision	
(xiv)		Penalty provisions	
(xv)		Transitional and final provisions	

(Službene Novine Kantona Sarajevo, 1999; Službene Novine Kantona Sarajevo, 2005; Službene Novine Kantona Sarajevo, 2017)

According to the SC Constitution, Article 12, (§ d) “among Canton’s exclusive responsibilities are determining housing policy, including enacting regulations, which consider construction and urban context of residential buildings” and (§ f) “enacting regulations on land use” (Službene novine Kantona Sarajevo, 1996, p. 4). According to Article 13, § c of the Constitution, the SC has joint responsi-

bilities with the Federation of BiH in "environmental protection policy." In 1999, for the first time after the war, the SC government adopted the Spatial Planning Law (Službene novine Kantona Sarajevo, 1999). It relied on the former Republic Spatial Planning Law (Službeni list SRBiH, 1974) but in a reduced form because it did not include some of the sections from the original law (Tables 27 and 28). In 2005, the SC government adopted a new Spatial Planning Law (Službene novine Kantona Sarajevo, 2005), which was basically founded on the Spatial Planning Law of 1999. If we compare the law from 2005 to the Socialist Republic Spatial Planning Law of 1974, we may conclude that the following sections are reformulated or missing (Table 28):

- Section "Basis of urban planning and spatial organization" is reformulated to "Spatial organization."
- Section "Environmental protection and improvement" is missing.
- Section "Spatial planning" is reformulated to "Planning."
- Section "Residential area and building construction" are missing.
- Section "Institutions and stakeholders" is missing.

The missing sections indicate the changes that the law has undergone due to the transition, which contributed to the further weakening of the spatial planning implementation. The elements of the Spatial Planning Law of 1974 that were eradicated in the new law are as follows: outbuilding and industrial buildings, expropriation procedure, building land utilization, compensation for building land utilization, socialist-associated labor unions as contractors, environmental protection, construction of buildings and neighborhoods, historic and art buildings, committee for spatial planning and environmental protection, and committee inspection. The elements introduced with the new Spatial Planning Law in 2005 focusing on advertisements, registering, and demolition of illegal buildings are the content of project program (for areas not covered with development plans), content of zoning plan, plan correction, and building construction (Table 28). In 2017, the SC passed a new Spatial Planning Law (Službene novine Kantona Sarajevo, 2017), which basically follows the cantonal Spatial Planning Law of 2005 and modifies it mostly in the matter of greater competencies of the municipalities, eradicates plan corrections, and introduces the location information that urban permit is a prerequisite of a building permit procedure (Tables 27 and 28). The spatial planning law does not introduce certain essential definitions and departments for the market economy, such as property rights, protection of public good rights, and specificities for construction according to spatial planning documentation – spatial plans, land-use plans, and regulatory plans.

Table 28 Comparative elements of the Sarajevo Canton Spatial Planning Law of 1999, 2005, and 2017

Content	1999	2005	2017
Urban areas and areas beyond urban area	§6	§8	§9
Obligation of issuing building permission	§116, §120	§66	§68
Building and land policy based on plans	§72	§5	§5
Technical documentation			
(Executive project)	§110–§115	§108–§116	§95–§105
Spatial planning principles	-	-	§4
Permissible uses	§3 Building land Farmland Woods Water areas Protected and recreation areas Infrastructure systems Exploitation field Reserved areas	§4 Building land Farmland Woods Water areas Protected and recreation areas Infrastructure systems Exploitation field Reserved areas	§5 Building land Farmland Woods Water areas Protected and recreation areas Infrastructure systems Exploitation field Other areas and reserved areas
Built-up area (Building ratio)	§21, §22	§20, §21	§22 (zoning plan)
Building régimes	§5	§6	§7
Alignment (Regulatory) line, building line, levelling line	§92, §96	§94	§2
Content of spatial plan	§35–§42	§28–§30, §34	§17–§18
Content of spatial plan of areas with special features	§43	§31, §35,	§19
Content of land-use plan	§44	§31–§32, §36	§20
Content of the project program		§32	-
Content of the regulatory plan	§45	§28, §32, §37	§17, §23
Content of the urban project	§46–§47	§38	§24

Content	1999	2005	2017
Content of the parcellation plan	-	§56	§26
Content of the zoning plan	-	-	§7, §17, §22, §25
Plan amendment	§55	§45	§39–§40
Plan correction	-	§46	-
Professional opinion	§86	§81	§54, §55
Temporary facilities for the accommodation of persons	-	-	§11
Building land regulation (preparation and equipment) of land	§64–§71	§58–§65	§42–§45
Compensation for expenditures of building land regulation	§70	§63	§46
Parceling	§60–§62	§54–§56	§26
Regulating building land (preparation and equipment)	§64–69	§58–§63	§41–§45
Contractor obligations	§125	§119, §121–§125, §130	§109
Building construction	-	§117	-
Installations / Infrastructure	§66	§7, §67, §69, §81, §110, §133, §157	§13
Environmental protection	§17–§34	§92	§4, §18, §52, §57, §67, §73, §93, §127
Protected areas	§24–§26	§24–§26	§2
Urban standard protection	§21	§20	-
Protection régimes	§28 building heritage, §31 natural heritage		
Strategic environmental assessment	-	-	§2
Energy certificate	-	-	§2
Sustainable development	-	-	§2

Content	1999	2005	2017
Protection from natural disasters and war actions	§26	§23, §92	§20, §67,
Development planning documentation	§35–§59	§27–§53	§16–§31
Constructions according to technical norms and standards	§111	§101	§97, §110, §111, §169
Fire protection and security measures	See Environmental protection	§20, §108, §110, §115, §129,	§87
Barrier-free design of buildings	§92	§90, §114, §172	§180
Building ban	§5		§8
Advertisements	-	§78	§2
Temporary buildings	§83	§77	§84
Building in phases	-	-	§82
Additions	§76–§77	§70–§71	§2
Building in waster city area	See Building régimes	§80	§65
Location information	-	-	§51–§53
Planning/urban permission	§84–§101	§79–§97	§54–§67
Fences	-	-	§2
Historic and art buildings	See Environmental protection	§25, §127	§60
Protection of neighbor rights		-	§22, §51, §59, §67, §87, §107, §109, §122, §124, §126, §127, §150, §151, §164, §169
Building maintenance	§80	§74	§2, §85, §126,
Institutional competencies	-	§159–§160	§25
Delegating assignments from canton. Gov. to city and municipalities	§138	§151	§141, §142
Building permission	§102–§108	§98–§107	§68–§84
Permission-free building projects	-	-	§69

Content	1999	2005	2017
Location and Urban permission for simple structures	-	-	§51, §54
Relation of illegal buildings	§109	§169, §170	-
Registering and demolition of illegal buildings		§149, §153	§81, §139, §144, §147, §154
Demolition	§82, §135–§137	§76, §144–§147, §158	§2, §85,
Spatial Information System	-	§148–§150	§138–§140
Inspection supervision	§140–§150	§152–§157	§143–§157
Building use permission	§127–§128	§131–§132	§116–§125
Committee inspection	§129–§134	§133–§142	§119–§120
Penalty provisions and appeal	§151–§153	§161–§164	§159–§175
Final provisions	§154–§161	§165–§174	§176–§183

(Službene Novine Kantona Sarajevo, 1999; Službene Novine Kantona Sarajevo, 2005; Službene Novine Kantona Sarajevo, 2017)

The spatial planning instrument hierarchy in the SC follows three governmental levels and accordingly establishes zoning and development plans (Figure 25). Zoning plans (spatial and land-use plans) are passed by the SC Government, whereas regulatory plans are passed by the City of Sarajevo (if the city is a plan preparation holder or the territory of a plan is covering more than one municipality) or/and the canton municipalities. Urban projects are the exclusive responsibility of the municipalities because this kind of detailed planning documentation is performed on the most detailed planning scale (1:500). 75.4% of the SC urban territory (Figure 26) is covered by regulatory plans (see Figure 27), and 4.14% of the SC territory was covered with regulatory plans in 2006.

All plans have graphical and textual parts. The elements and the content of the graphical and textual parts of the spatial planning documentation are defined by the decree on uniform methodology for producing spatial planning documentation (Službene novine Federacije BiH, 2004). The textual parts of spatial planning documentation are as follows:

- Text of a plan
- Decisions on plan implementation
- Decision on plan adoption.

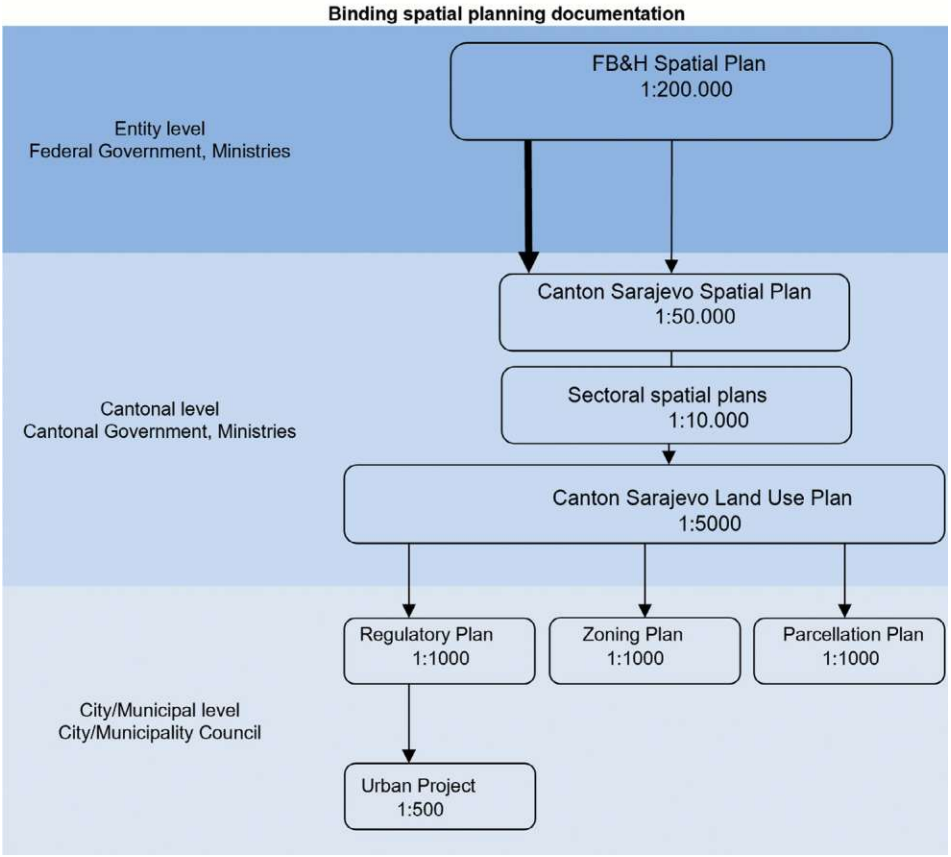


Figure 25 Spatial planning instrument hierarchy in Sarajevo Canton *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

All plans have graphical and textual parts. The elements and the content of the graphical and textual parts of the spatial planning documentation are defined by the decree on uniform methodology for producing spatial planning documentation

For our research, it is important to emphasize that the decision on plan implementation is written by an urban planner who prepares a plan. The decision on plan implementation does not have a binding structure and the content defined by the law. The graphical parts of a plan vary in accordance with the spatial planning documentation level and type of a plan, and their binding structure is prescribed by the law. As explained previously in Section 2.3, a building regulation, defined by the Spatial Planning Law, in a form so-called four building regimes accompanies zoning and development plans, in the same manner as in the former Republic Spatial Planning Law (1974). The only difference is that the building ban is not a part of the regulation in the new Spatial Planning Law (2017). The four building regime regulation is the only building regulation in the absence of a building code,

and therefore it shall be a part of the qualitative procedural land-use planning implementation analysis in Section 4.2.1.

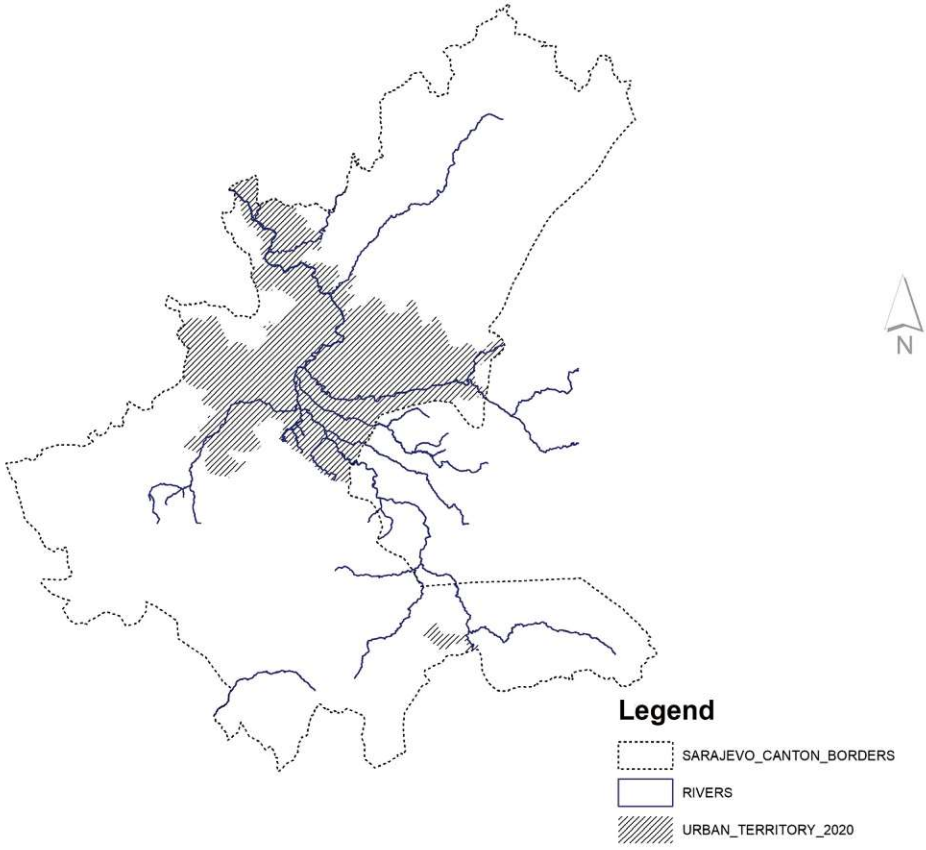


Figure 26 Canton Sarajevo urban territory *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Finally, as we could conclude from the analysis of the political and spatial conditions in the Canton, although the territory, socioeconomic, and political frameworks of Sarajevo have been significantly changed after the war, albeit the sociopolitical and economic constitutions have changed, the spatial planning system had not undergone major reforms to enable effective and integrative planning and planning implementation. This issue shall be a starting point for proposing a new model for a building code in the SC.

Finally, as we could conclude from the analysis of the political and spatial conditions in the Canton, although the territory, socioeconomic, and political frameworks of Sarajevo have been significantly changed after the war, albeit the sociopolitical and economic constitutions have changed, the spatial planning system had not undergone major reforms to enable effective and integrative planning

and planning implementation. This issue shall be a starting point for proposing a new model for a building code in the SC.

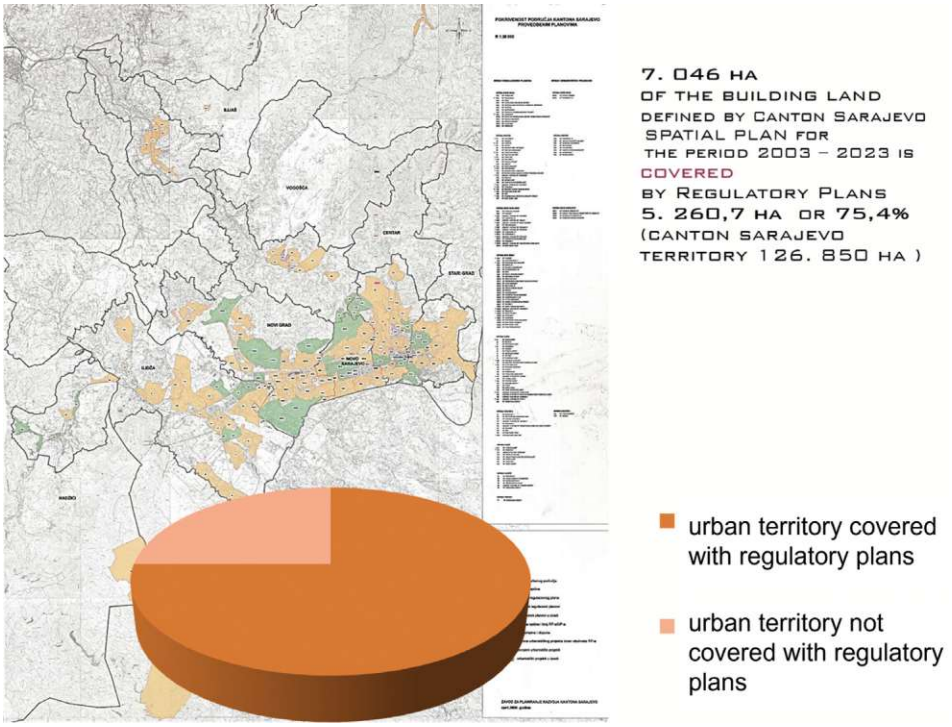


Figure 27 Coverage of the Canton urban territory area with detailed spatial planning documentation *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

3.5.3 Frequency of Renewing Spatial Planning Instruments

The frequency of renewing the spatial planning tools in the SC according to the law is as follows:

- Development planning documentation – in general every 20 years
- Detailed planning documentation – in general every 10 to 5 years, but recently often not defined.

However, the analysis on the accuracy of development spatial planning tools according to the available data indicates different figures or, to be more precise, more frequent changes than those provided by the law (Tables 29 and 30).

From Table 29, we may conclude that the republic spatial plan has been renewed after 30 years, regarding the fact that after the recent war, there was a difference in the territorial, socioeconomic, and political structure of the evaluated area,

which is not the Bosnia-Herzegovina but the entity area. An important particularity is that the FBiH spatial plan is not adopted even though in the procedure since 2008 (see Table 29). The SC spatial plan has been renewed after 20 years and then amended several times after the adoption in 2006. SC land-use plans are currently in procedure for renewal after 30 years. In recent years, due to certain regulation "innovations" ("correction of a regulatory plan" and "regulatory plan amendments in a summary procedure") defined by the Spatial Planning Law of 2005, a phenomena of frequent detailed planning procedure renewal occurs (see Table 30).

Table 29 Analysis of the accuracy of the development spatial planning documentation

Period	Spatial plans*	Spatial plan amendments*	Land-use plans*	Land-use plan amendments*
1945–1990 (SFRY)			GUP for Sarajevo (1965)	
	Spatial plan of an area with specific features for the XIV Winter Olympic Games in Sarajevo 1984 (1979)			
	Socialist Republic of Bosnia-Herzegovina Spatial plan for the period 1981–2000 (1982)			
	City of Sarajevo Spatial Plan for the period 1986–2015 (1986)	---	Land-Use Plan for Sarajevo Urban territory for the period 1986–2015 (1990)	
			Land-Use Plan for Hadzici Urban territory for the period 1986–2015 (1990)	
			Land-Use Plan for Ilijas	Land-Use Plan for Sarajevo Urban territory Amendments (1997)
			Urban territory for the period 1986–2015 (1990)	

Period	Spatial plans*	Spatial plan amendments*	Land-use plans*	Land-use plan amendments*
			Land-Use Plan for Trnovo Urban territory for the period 1986–2015 (1990)	
			Land-Use Plan for Pale Urban territory for the period 1986–2015 (1990)	
1992– (Republic Bosnia-Herzegovina)	Sarajevo Canton Spatial Plan for the period 2003–2023 (2006)			Land-Use Plan for Ilijas Urban territory Amendments for the period 1986–2015 (2000/2005)
	Federation of BiH Spatial Plan for the period 2008–2028 (Not adopted)	Phase “A” Sarajevo Canton Spatial Plan Amendments for the period 2003–2023 (2011)	Decision for the preparation of the Land-Use Plan for Sarajevo Urban territory; Decision for the preparation of the Land-Use Plan for Hadžići Urban territory; Decision for the preparation of the Land-Use Plan for Ilijaš Urban territory; Decision on preparation of the Land-Use Plan for Trnovo for the period 2016–2036 (2016)	
	Spatial Plan of an area with specific features for the protected landscape Bijambare (2009/2010)			
	Spatial Plan of an area with specific features for the Natural Heritage Waterfall Skakavac (2016)			

Period	Spatial plans*	Spatial plan amendments*	Land-use plans*	Land-use plan amendments*
	Decision on preparation of the Spatial Plan of an area with specific features for the Protected landscape ”Trebević” (2016)			
	Decision on the preparation of the Spatial Plan of an area with specific features for the Regional Waste Management Centre Smiljevici (2017, not sustained)			
	Spatial Plan of an area with special features that has the importance of the Federation BiH “Highway on Corridor Vc” (2017)	Phase “B” Sarajevo Canton Spatial Plan Amendments for the period 2003–2023 (2017)		

**Year of approval is indicated in the brackets.*

The table does not indicate the production years of the detailed spatial planning documentation in the SC. The correlation between the year of adoption of a new law (2005) that enabled plan corrections and the frequency of their adoption until their eradication from the law (2017) can easily be found and is shown on the graph represented in the quantitative procedural land-use implementation outcomes (see Subheading 4.2.2). In particular, “corrections” were eradicated from the Spatial Planning Law of 2017, yet in practice, they are replaced by the form of amendments of detailed planning documentation.

However, it is not only the legal act but its “implementation” that allows frequent spatial planning tool renewals, which in the end leads to vertical and horizontal discoordination between diverse levels of spatial planning tools and instruments. One of the reasons for the above phenomena is a spatial planning system established with weak and uncontrolled implementation of spatial legislation, with no implementation instruments and mechanisms.

Table 30 Analysis of the detailed spatial planning documentation production in Sarajevo Canton in the years 1996–2017

Level of Government	Number of Approved Regulatory plans	Number of Regulatory plans in the Approval Process	Number of Approved Urban Projects	Number of Urban Projects in the Approval Process	Number of Approved Parcellation Plans	Number of Approved Detailed Planning Documentation (RP and UP) Corrections	Number of Approved Regulatory Plan Amendments	Number of Regulatory Plans Amendments in the Approval Process	Number of Urban Project Amendments
Sarajevo Canton	16	2	5						
City of Sarajevo	61	18					29	5	
Municipality Center		6	15	11		80	1	1	
Municipality Hadžići	4	3	2	1				2	
Municipality Ilidža	14	9	4	3		15	13	2	
Municipality Ilijaš	24	3	2		2	14	3	2	
Municipality Novi Grad	2	1	9	7		42	2		
Municipality Novo Sarajevo	1		8	8		27	1	1	
Municipality Stari Grad	1		7	1		7			1
Municipality Trnovo	3	1	3	3	3	9	1	1	4
Municipality Vogošća	5	9		4		6	2	2	
Total	131	52	55	38	5	200	52	16	5

(Adapted from Kanton Sarajevo, 2018)

3.5.4 Building Permit Procedure

The building permit procedure is preconditioned by obtaining an urban permit according to the Spatial Planning Law (2017). Zoning and development plans appended with decisions on plan implementation, professional opinions issued by the Institute for Canton Planning, and the conditions defined by special regulations are the bases for obtaining an urban permit.

Urban permits can be issued, according to the law, on three governmental levels as follows:

- By a local authority for buildings with a gross building area up to 10,000 m².
- By the Cantonal Ministry of Spatial Planning, Construction, and Environmental protection for buildings with a gross building area of more than 10,000 m, for buildings that represent the interest of the canton, and for buildings that are on the territory of more than one municipality that are a part of the canton.
- By the Mayor of the City of Sarajevo for buildings built on more than one municipality and for buildings that represent the interest of the city, according to Articles 48, 54–67, and 141 of the Spatial Planning Law (Službene novine Kantona Sarajevo, 2017).

According to §59 of the Spatial Planning Law (2017), the content of the urban permit is as follows:

- Borders of a proprietary land on a building plot with a building location
- Plan extract or professional opinion issued by the Institute for Canton Planning
- Urban and technical conditions
- Data about purpose, location, and building design
- Public utility company's assessment
- Conditions and obligations contained in environmental permits
- Obligations in a matter of engineering–geological and geomechanical soil testing
- Obligations in relation to neighbors and other persons
- Obligations in a matter of payment for construction land regulate
- Conditions on construction land regulation in cases when it is not previously regulated
- Conditions for other constructions and fences
- Obligations in relation to disabled persons
- Others.

According to §67 of the Spatial Planning Law (2017), technical conditions for obtaining the urban permit are prescribed as follows:

- Purpose of a building
- Size and shape of a plot
- Regulating and construction lines
- Floor area ratio and building coverage area
- Technical indicators of a building (e.g., plan and number of floors)
- Building height and distance from other plots
- Conditions for the architectural design of a building
- Car parking or garage areas according to urban standards
- Conditions for construction plots and green space regulation, especially obligations and access methods to a public road and network installation
- Environmental protection conditions
- Conditions for natural and artificial hazard prevention
- Conditions for a barrier-free environment for disabled persons
- Others.

As mentioned above, urban permits, as a precondition for building permit, are issued based on urban and technical conditions interpreted by municipality individuals and their aesthetic criteria and ability to understand spatial planning documents and valid legislation. This condition makes the entire process challengeable in the matter of objectivity and rationality. There is no rule book nor a planning implementation act that could easily be understood by authorities and citizens in a complex process of spatial and land-use planning documentation implementation and, more importantly, that will make the building permit procedure transparent and objective and based on equal rights for all interested stakeholders. The existence of a building code on the cantonal level for each city would certainly give a solution that would contribute to the extinguishing of deviations of legal forms, such as professional opinion. In 1991, Aganović commented and qualified that

> a professional and a social alibi for illegal procedures, brought in the municipalities […] which is provided by 'special' or 'professional boards', in every municipality separately, without a uniformed impact of the city on these processes, notwithstanding all passed spatial planning documentation of various government levels and responsible institutions. (Aganović, 1991, p. 67).

The qualitative procedural land-use planning implementation analysis shall take into account all segments of the building permit procedure when analyzing its shortcomings.

3.5.5 Informal Settlements

The phenomena of informal settlements will be shortly mentioned in this research because it is not our focus and because it can be a subject for a separate elaboration and research.

Informal settlements are the phenomena known in the context of Southern and Southeastern Europe in countries, such as Italy, Greece, Turkey, Slovenia, Serbia, Croatia, North Macedonia, Kosovo, Albania, Bulgaria, and Romania.

Italian author, architect, and urban planner Marvi Maggio (1999) published the article entitled "Urbanization and informal building in the Mediterranean context," as a part of his post-doctoral studies, elaborating the informal settlement phenomena in the Mediterranean context. In the article, he analyzed causes and consequences for informal construction and gives the proposal of the urbanization mechanism and the viable solutions:

> Terrains that are used in the process of illegal construction are characterized by low market value, inaccessibility, and rejection by the official market. Illegal building and informal settlements could be a response to one part of a demand that cannot be institutionalized through legal mechanisms and rules. That is how a parallel market is born, linked to the legal market, which utilizes private and public terrains that are not designated for construction for assorted reasons. Afterwards, the official market makes use of that urbanization and replaces its inhabitants, which makes profit for this kind of construction favorable for individual and the expenditures are the obligation of a community. (Maggio, 1999, p. 7)

Maggio emphasized the importance of social factors and finds them the root of informal settlement phenomena:

> The requalification of informal settlements implies simultaneous action on social and economic factors. The emphasis should be on social questions, which are the cause of illegal building and its (social questions) connection to existing cities. The capitalist city market does not offer apartments for rent that can be affordable to people with low wages; nor social services and common spaces for social interaction and the possibility of cultural expression; nor involvement in the planning process, management, and maintenance of the settlements by their inhabitants; nor the financial possibilities that enable development and transformation of buildings in time, in correlation with needs and not the possible savings; nor widening the possibilities to choose between various patterns of housing spatial organization, especially in the social context of large metropolitan areas, which are in constant transformation and contradiction. (Maggio, 1999, p. 7)

We may accept Marvi's hypothesis to address the informal settlements to a social neglecting or social denial of certain categories of population by the state and official housing policies, among others, but we cannot connect it only to a capitalist city market, as Maggio did, because, in Sarajevo, we are witnesses that the informal settlement phenomena began during the socialist state:

> The quiet legalization of illegally built residential areas through their subsequent connection to the infrastructure is a planning practice that has been going on for years. Even the socialist state could not meet the demands of the rapidly growing city through municipal projects alone, although, on average, 2,000 apartments were built each year. In the 1970s and 1980s, a similar number of houses were built annually on the hills around Sarajevo as individual initiatives. […] According to estimations of municipal inspectorates, 3,882 apartments were built informally in the period 1981–1985. (Službeni list SRBiH, 1986, p. 32)

Hence, on every three apartments built by the state, there was one built informally by private owners. Informal settlements occurred in Sarajevo for the first time in the 1960s, shortly after the City Assembly had adopted the GUP, in the slope areas close to the city urban core area and plain area of the Sarajevo field in the western parts of the city. In the same period, with the development of the industry and because of the agrarian reform, a massive population migrated to the city. Such a great augmentation of employment and migration to the city could not follow up with the appropriate rhythm of housing construction. Faced with the inability to solve their housing problem legally, many migrated inhabitants started to build their family houses informally (Zavod za planiranje razvoja grada Sarajeva, 1985, p. 26). The city did not react against the construction of informal settlements, which implied achieving social peace without offering specific social policies for this problem. The City of Sarajevo Assembly accepted "The recovery program for slope parts of the city" and "The recovery program for plain parts of the city" done by the Institute for the City of Sarajevo Planning in 1974 (Skupština grada Sarajeva, 1974). The urban sociology survey "The impact of general and particular determinations on the occurrence and development of informal settlements in Sarajevo" was performed by the Yugoslav Institute for Urban Development and Housing in coordination with the Institute for the City of Sarajevo Planning in 1985 (Jugoslovenski institut za urbanizam i stanovanje Beograd i Zavod za prostorno planiranje razvoja grada Sarajeva, 1985). These vast studies diagnosed the problem well, but with no solution how to solve it. The only solution was the recovery of these areas, which was the acceptance of the status quo.

During the war, Midhat Aganović, managing director of the City of Sarajevo Development Institute in the 1970s and the Institute for the City of Sarajevo Planning in the 1980s, wrote in the magazine Architecture that the "urban situation" of the

city was “aggravated” already at the beginning of the 1980s and “became dramatic before the war” (Aganović, 1993, p. 112). Difficult urban conditions were reflected in the following, according to Aganović: “Merciless usurping the urban space; enormous increase in housing construction prizes; lack of adequate land policy; informal housing; absence of information transparency; arrogant behaviour of some public service companies; terrible situation with urban sanction” (Aganović, 1993, p. 112).

The process of informal settlements sprawl in the post-war period, although emerged by the necessity of refugees from various parts of the country to settle again:

> During the war, between 1992 and 1995, a refugee crisis originated because of episodes of ethnic cleansing, causing thousands of people to forcibly leave their homes and become known as internally displaced persons in Sarajevo after occupying apartments that had been abandoned. (Donia, 2006, as cited in Martin-Diaz et al., 2018)

Forcibly displaced people begun to solve their existential urge to have a home in the outskirts of Sarajevo, in the areas with cheaper prices of land and mostly in an informal way.

> Although these constructions were seen as a method of creating stability and consolidating a new life in a less hostile social, political, and economic environment, these constructions developed on the slopes of Sarajevo also implied a degradation in terms of urban life as many of them took place in areas with steep slopes at a high geomorphological risk [...]. (Martin-Diaz et al., 2018, pp. 60–69)

Nevertheless, the “carpet of houses” – located near the loud, pulsating inner city yet at the same time screened from it – offers high qualities. Small houses with the view are the Balkans’ equivalent to individual home ownership in the city. This has recently been described by the term rurban (Jessen et al., 2008, p. 168). The large rurban housing areas in Sarajevo might be understood as a misinterpretation of “mahalas,”[7] as an organic architecture that is being built spontaneously without a formal plan and according to unwritten rules and agreements between neighbors to “have a view” or “right of insolation,” a good portion of green and open space and a built area on a single plot:

> So-called mahalas are traditional small-scale residential areas with a strong sense of neighborhood and a circulation system of narrow, irregular streets. The arrangement of houses uses the topography in such a manner that they are all guaranteed private outdoor areas and a view of the lively

7 Mahala neighborhood in the Ottoman Empire period

> city. Each building establishes the constraints – the "design parameters" – for all that follow. (Jessen et al., 2008, p. 167)

The unique and positive aspects of "mahalas" have been transformed into uncontrolled housing areas sprawling in the city, with unhygienic conditions in (primarily absence of a sewage system) and limited technical conditions (e.g., irregular street width, no sidewalks or irregular sidewalk width, and irregular fire protection conditions).

However, the number of houses in informal settlements is continuously growing, supported by, among other factors, continuous renewal of developing and detailed spatial planning tools in the areas and by the decision on the legalization of buildings constructed without building permits and temporary buildings (Službene novine Kantona Sarajevo, 2006). Regulatory plans in these areas are losing its regulatory character but are more likely to be sanction plans, as informal settlements are an epiphenomenal process of urban development (Martin-Diaz et al., 2018, pp. 60–69).

The problem of informal settlements is formalized through the legalization process, which became the only "housing policy" for these areas. However,

> legalization had limited effect as some basic services are still absent or only appear occasionally on the slopes, even though the implementation of these regulation plans is to provide standardised infrastructure for illegally constructed settlements. Thus, these spaces are maintained within the domain of 'grey spaces' despite abandoning the domain of informality. (Legrand, 2013, as cited in Martin-Diaz et al., 2018, pp. 60–69)

Beside the social, economic, and political aspects of the phenomena, informal settlements may be connected to spatial planning documentation frequent renewal and to the absence of certain rules and regulations for the areas in which informal settlements are erected. The solution for this phenomenon was given in the City of Sarajevo Council report in 1991: "proper exploitation and channelizing of enormous potentials of private investments and initiatives should be given through uniform and rigorous criteria at the city level" (Aganović, 1991, p. 70). The safety aspect should be considered because of geomorphological hazards in the "informal areas," urban hygiene standards, and other urban standards that need to be established for these areas, such as communal infrastructure, streets with a sidewalk network, social infrastructure, and public green areas. Informal settlements need to become a part of a comprehensive legal approach in the form of legal acts to enable spatial planning implementation.

3.5.6 Absence of a Building Code

As elaborated in Section 2, Sarajevo did not have a building code since 1936. The attempts to create sectoral norms and standards for the city or its segments, such as the housing standards in 1976, cannot be considered a systematic and comprehensive response to the rapid urban development of the city, where the population grew almost seven times in 50 years (1941–1991) and with all changes that have happened in 50 years in different urban design segments, from the size of a neighborhood, street width, building heights, building materials to building types, and building equipment.

The last time a building code was mentioned and commented among the city's spatial planners and professionals was at the "Sarajevo Town and Region in Time and Space in the Year 2000th Symposium," which took place in Sarajevo on April 23 and 24, 1981 and was organized by the Bosnia-Herzegovina Academy of Sciences and Arts, of University of Sarajevo and Town Council of Sarajevo.

> Fortunately, Austro-Hungary hasn't interfered in old parts of the city, apart for exceptional cases. The rigorous 'Building Code for the City of Sarajevo' has actually been implemented, bureaucratically narrow-minded, but at least respected, which prevented more serious violations of the public interests. (Aganović, 1981)

The severe criticism of the building code document was moderated with the recognition of this document's main objective – protection of the public interest.

Before we proceed with further analysis, we shall make a digression and observe the city's spatial development context when it reached its development peek:

> The main spatial planning document in the 1980s was 'The Program for Construction and Spatial Development of the City for the period 1971–1985', which was the basis for 6 strategic projects, mostly done in coordination with professionals and institutions from other centers in Yugoslavia and in Europe:
>
> - The Environmental Protection Project
> - Transformation of the city's development axis from east–west to north–south direction
> - Sanitation[8] of more than 600 ha of the city area covered with informal settlements
> - Supporting the industrial urban development concept of the city by providing the construction of residential areas on larger spatial units

8 The term "sanitation" is used instead of the term "regulation" since the considered neighborhoods were built informally.

- Improving the social urban living standard by executing the main public buildings, financed by the city's self-contribution funds, with the participation of the Republic and future users (i.e., investors of these buildings)
- Organization of the Olympic Games. (Aganović, 1981, p. 127)

One more topic was raised at the Symposium, i.e., the development regionalization of the Sarajevo region, which implied 26 municipalities (Bošnjović, 1981, as cited in the Bosnia-Herzegovina Academy of Sciences and Arts, University of Sarajevo, and Town Council of Sarajevo, 1981, p. 58). This topic (development regionalization) was elaborated in all reports at the Symposium from various aspects, such as economy, urban planning, ecology, and human and natural environment health protection. The regional development of Bosnia-Herzegovina and the context of Sarajevo in a regional network will remain an accurate topic of the new millennium (Taubman, 1964; Ćuković, 1974; Hadžiomerović, 1981; Osmanković, 2001; Osmanković, 2002).

The above-mentioned six project areas (environmental protection, longitudinal vs. transversal axis development, informal settlements, transformation of industrial zones, public space, and development of the Olympic Mountains) will paradoxically remain Sarajevo's main obstacles toward integrative development in the 21st century.

After the urban development peek that Sarajevo has reached, urban decay has started. It was precisely described in a report written by the former managing director of the Institute for the City of Sarajevo Planning Midhat Aganović, released by the City Council in 1991. Not going into the details, it should only be mentioned that Aganović has written about the necessity to introduce urban standards: "Mentioned deformities in the city's spatial development are caused by the absence of urban norms, the absence of scientific work, and the professional interest for this problem" (Aganović, 1991, p. 15). The author continued that:

> Standards, norms, and other regulations on the preparation and equipment of residential areas, which are being implemented in the city are highly beyond our realistic economic possibilities. The city does not have any urban standard. Our residential areas and apartments in those areas, which have been built in the recent years, are not any different from the neighborhoods built in the European countries, whose GDP are even ten times bigger than our GDP. (Aganović, 1991, p. 20)

Aganović rightly made the connection between the standards and the economy, but, more importantly, he made the comparison between the standards in Sarajevo and those in European countries, which is one of the main premises of this research.

The author was precise about the root of the problem: “Every municipality, upon its own standards, or with no standards at all alienates those values, without which urban life can hardly be performed” (Aganović, 1991, p. 35). The author considered public spaces, parks, and plants, important when speaking the urban quality life.

In particular, Aganović was terrified that

> in our society and in the city, the awareness of the necessity to create and to enact uniform standards and norms in the field of spatial, urban planning, and housing that would be the expression of our objective possibilities and needs appropriated to the reached and planned level of the overall development, hasn’t matured yet. That is why we cannot be surprised that enormous financial means have been invested in pretentious solutions that have accompanied our planner’s efforts and aspirations to accomplish, in the recent 20 years, urban and communal standards of advanced societies, whose GDP is beyond $20,000. (Aganović, 1991, p. 86)

In the end, Aganovic concluded that

> to ensure the function of all integral parts of the City’s complex and unique organism, the city should take the responsibility to create the development planning documentation, surveys, expertise, analysis, norms, standards, and other enactments related to the city’s life and development. (Aganović, 1991, p. 104)

Midhat Aganović, as one of the city’s key figures in the field of spatial and urban planning during the socialist period, was concerned with Sarajevo’s future development at the beginning of the 1990s. The situation aggravated with the war destruction and post-war reconstruction of the wounded urban tissue and the society. However, the main problems of the urban development remain until today. In 1999, the Federal Ministry of Spatial Planning and Environmental Protection with the International Management Group (IMG) published a manual of standard building specifications for architectural norms and standards for the execution of works of construction, reconstruction, sanction, and adaptation (Table 31).

After overviewing the content of the manual, published in 1999, and analyzing the manual itself, we can conclude that its purpose was to summarize and make a database of all valid construction norms and planning praxis in Bosnia-Herzegovina in both entities. The manual was the only attempt in the post-war years in Sarajevo to make, at least, as a brochure, a comprehensive overview of all the sectoral standards and binding procedures. In the post-war and transitional period, there were no attempts for new standardization in building design and certainly no initiatives for sectoral reforms.

Table 31 Content of the manual

I. General		
	a. Building	i. Buildings ii. Houses iii. Residential areas iv. Public buildings v. Complexes vi. Devices and equipment vii. Plant viii. Industrial, energy, and special-purpose buildings
	b. Construction – Execution – Construction Industry	
	c. Carrying structure	
	d. Construction systems	
	e. Labels, measures, and conventions	
	f. Costs	
II.	Spatial planning and environment	
III.	Spatial conditions	
IV.	Conditions for bearing structure and bearing structure elements	
		i. Structure elements
V.	Building physics	
VI.	Conditions for building elements	
VII.	Conditions for finishing work and surface work.	
VIII.	Conditions for water and sewage installations	
IX.	Technical conditions for electrical installations	
X.	Technical conditions for thermodynamic installations	
XI.	Gas installations	
XII.	Technical conditions for executing ventilating, heating, cooling, and air-conditioning plants	
XIII.	Lifts	
XIV.	Hygienic and technical conditions	
XV.	Conditions for disabled persons	
XVI.	General conditions for construction	
XVII.	Control of construction	
XVIII.	Relations of participants in construction	
XIX.	Audit and legal procedures	
XX.	Cultural heritage	

(Federalno ministarstvo prostornog uređenja i zaštite okoliša & IMG, 1999)

Spatial planning tools in the SC currently do not recognize building code as a mandatory document. The so-called decisions of implementation, which are mandatory elements of every spatial planning document textual part, are not unified in its form for all spatial planning documentations. They are written by planners and cannot create a systematic elaboration of all the factors of an urban form.

The creation of an urban form is one of the purposes of a building code. The urban form is "a synthesis between architecture and planning, or a third dimension" (Aganović, 1991, p. 213)

Stühlinger defined two different levels of building standards that influence a city's image or form: hard factors, such as building dimensions and street width, and soft factors, such as details of the surface design elements, e.g., paving or façade openings and protrudes (Hagen, 2015). Accordingly, we may conclude that this basic distinction can be used for creating a building code document.

All city elements contribute to its urban image: "Very often, the unjustifiably neglected details (park benches, fountains, squares, street illumination, and sculptures) can contribute significantly to a nicer and more humane way of living and the overall beauty of a city landscape" (Aganović, 1991, p. 213).

Bublin was among only a few authors, in the post-war years, who have recognized the need to "institutionalize the legislative and managerial environment for the preparation and realization of development programs and plans" (Bublin, 2008, p. 212). However, he did not specifically mention the building code, yet it may be interpreted as a clue in that direction: "in contemporary developed societies, cities are institutionalized, which means the existence of certain public institutions with transparent work. These cities have codified their laws, city regulations, and standards, which is a basis for city functioning and development" (Bublin, 2008, p. 212).

A building code is as an instrument of controlled spatial and urban development because "cities, as the most complex social systems, may function and develop only if properly managed, since the practice of spontaneous development no longer works out" (Bublin, 2008, p. 212). There is a relationship between a building code, as a public policy instrument, and land-use planning: "There are a number of public policy instruments that can affect land use. Most important among them are land-use regulations imposed through the land-use planning process and environmental and building code regulations" (OECD, 2017, p. 9). The importance of a building code is sublimated in the following sentence:

> At present, public policy uses primarily two mechanisms to internationally influence land use; it allocates public investments across space, and it restricts how individuals and businesses are permitted to use land. Its main

> instruments are the spatial and land-use planning process and environmental and building code regulations. (OECD, 2017, p. 17)

Unfortunately, only Aganović and Bublin wrote about the urge for coding and standardization, one already in the 1990s and another in the early 2000s. For 20 years, there is a silence and absence of constructive critics in professional circles about planning and coding issues, which need to be broken.

3.6 Summary

Two continental contemporary spatial planning systems were selected to be examined in this research because of their relevance to the Sarajevo Canton spatial planning system, the Austrian and Swiss case studies. Austria, as an EU state, has historical reference and importance for the Sarajevo coding and planning system, whereas the Swiss Confederation, as a non-EU state, has cantonal competencies for spatial planning. Both countries govern spatial planning on three levels: national, cantonal, and federal or municipal. The instruments of spatial and land-use planning are being adopted on four levels in Switzerland: concepts and sectoral plans on the confederation level; guiding plans and cantonal land-use plans on the cantonal level; regional guiding plans and agglomeration plans on the regional level; and land-use plans and building regulations on the municipal level. Compared to Switzerland, in Austria, as an EU member state since 1995, the instruments of spatial and land-use planning are adopted on five levels: First, EU documents, as guidelines for spatial planning and directives according to which the national strategic document is drafted, are all adopted on the European level. Second, national sectoral plans are adopted on the national level. Third, provincial sectoral plans and spatial development strategies and development programs (non-binding) are adopted on the federal level. Fourth, regional plans are coordinated by the regional development agencies of the federal provinces. Fifth, development concepts, zoning plans, and development plans are adopted on the municipal level. Building regulations and spatial planning laws are on the federal level and differ for all nine federal states. The capital of the two countries have a special status: Zurich is a canton and Vienna is a federal state. In the Zurich Canton, a building permit is a function of the law on planning and construction, building code, and building procedure ordinance. In Vienna, the building permit procedure is the function of the Vienna urban development, urban planning, and building code, established in 1930, and Austria's Institute for Building Technology Guidelines and other regulations considering parking, lift, and fire protection, among others. The Zurich Building Code is highly descriptive and appended with sketches, whereas the Viennese Building Code is amended yearly, with new elements according to the novelties in building technologies,

environmental norms, and directives of the EU. In the Swiss Confederation's and Austria's spatial planning systems, planning and coding are instruments for creating a land and property value. Two more case studies, i.e., French and Slovenian, are relevant for Sarajevo. First, the French planning and coding system's land-use plans have a written part (regulation), which needs to be in line with the Urban Code and National Urban Regulation that provides the overall guidelines and "default" detailed regulations. The regulation might be compared to the so-called decisions on plan implementation in the Sarajevo Canton, yet its linkage to the building code needs to be established. Second, the Slovenian example is important for Sarajevo because of the common spatial planning system during the former Yugoslavia and similar challenges in the transition period. Slovenia adopted a new spatial planning law and construction law as a part of major reforms in 2017. Although Slovenia did not have a building code, the new construction law corresponds with technical guidelines for construction and various standards.

Bosnia-Herzegovina, after the dissolution of Yugoslavia, became an independent state in 1992 and faced the most brutal war at the end of the 20th century. For the citizens who remained in their city, the siege of Sarajevo lasted for four brutal years without food, electricity, water, medicines, and continuous everyday shelling and sniper attacks. The Dayton Peace Agreement was reached in 1995 but the country was divided, as was its capital city Sarajevo. The structure of Bosnia-Herzegovina's spatial planning system follows its governmental vertical division into two entities (the Federation of Bosnia-Herzegovina and Republika Srpska) and the Brčko District. The horizontal hierarchy defines that the FBiH consisted of cantons, cities, and municipalities, and the RS consisted of cities and municipalities. A special case of Bosnia-Herzegovina is its potential candidacy for EU membership since 2016. This implies the use of EU spatial concept documents as guidelines for sectoral planning, although the spatial planning system would have far reached benefits if the country would reach the candidate status. Meanwhile, the entity line divides the former City of Sarajevo into the Sarajevo Canton and East Sarajevo with no cross-entity planning strategies between the two cities or other cities in the wider regional context. Spatial planning is a shared competency of entities and cantons. Therefore, for the Sarajevo Canton, the main binding sectoral laws are the spatial planning law, construction law, and decree on uniform methodology for producing spatial planning documentation on the federal level and the Sarajevo Canton Spatial Planning Law on the cantonal level. Sarajevo is the only canton in FBiH that has no construction law. The instruments of spatial and planning are being adopted on three levels: spatial plan on the entity and cantonal levels, land-use plans on the cantonal level and zoning, regulatory, parcellation plans, and urban projects on the municipal level. Non-binding planning instruments do not exist. The socialist Spatial Planning Law of 1974 has undergone major transformations due to political and transitional changes in

1994, 1999, 2005, and 2017, but its essence remained. Therefore, the changes that the original law has undergone due to the transition and the post-war period were not significant for its enhancement and, in certain segments, contributed to the further weakening of the spatial planning implementation. The building permit procedure, according to the Spatial Planning Law, is still a function of an urban permit. The problems of spatial and land-use planning implementation, which began in the period of the Socialist Republic BiH, remained and became more severe since the whole socioeconomic and political milieu has changed after the doom of Yugoslavia, recent war, and post-war transition in Bosnia-Herzegovina. These problems implied overlapping competences in spatial planning, incoherency, and obsolescence of zoning plans, and the lack of informal documents produced as a result of inter-entity cooperation on one side and exceedingly frequent changes in development plans on another, further sprawl of informal settlements after the recent war, and absence of a coding system, technical guidelines, and standards for building and urban design. The post-war and transitional legislative novelty are decisions on legalization enacted in 2006, 2007, 2008, 2012, and 2015, which introduced a new form of procedure, supplementary urban permit procedure, and supplementary building permit procedure, which bypassed the proper building permit procedure and contributed to its further derogation. In other words, it is finally formally legitimate to build without building permits. The second part of the book brings a vast analysis of the research methodology outcomes to arrive to a complete scientific gnosis and propose a model for a new cantonal building code for Sarajevo.

PART III

Toward the New Building Code

4 Evaluation of the Building Permit Procedure in the Sarajevo Canton

"Notwithstanding its natural advantages of location and geology, Sarajevo has been developed primarily by individuals and groups determined to shape its future. The governing authorities of three regimes / Ottoman, Habsburg, and Communist – have facilitated the city's growth. However, Sarajevans themselves have invariably adapted a broader vision to the city's specific circumstances and provided the commitment, resources, and energy to shape their urban environment."
Donia

The research causal hypothetical framework was examined through the comparative-historical method, empirical–analytical method, case study method, questionnaire, interview, and Delphi method. The correlation between these groups of data will approve or disprove the causal hypothesis in this research.

4.1 Outcomes of the Comparative-Historical Method

The comparative method was used in this research to compare the same or similar facts, phenomena, or relations and determine their similarities or differences. These facts include the spatial planning systems, building code documents, spatial planning laws, building laws, and building permit procedures. According to Zvonarević, comparative-historical methods serve to fill the gaps of the empirical and analytical methods and to synthetize and generalize the gnosis for a complete scientific opinion (Zelenika, 2000, p. 321). According to Mahoney the comparative-historical analysis is a field of research characterized by the use of a systematic comparison and the analysis of processes over time to explain large-scale outcomes, such as revolutions, political regimes, and welfare states (Mahoney, 2004, p. 81). Mahoney, when analyzing the best method for testing necessary and sufficient causation, mentioned that the most widely used is "a dichotomous logic in which X is a necessary cause of Y, when the following statement is true: 'Y only if X'" (Mahoney, 2004, p. 86). According to George and Bennett,

> when variables are measured categorically in comparative-historical analysis, perhaps the most widely used method is 'typological theory'. Typological theory involves the construction of typologies whose cells represent different values on independent and dependent variables. Different theoretical types are systematically matched to determine whether cases follow patterns of correspondence consistent with necessary or sufficient causation. (George & Bennett, 2005, as cited in Mahoney, 2004, p. 86)

Mahoney claims that “Comparative-historical research is defined in part by the analysis of sequences of events that occur within cases” (Mahoney, 2004, p. 88), and his claim was supported by George and Bennett, according to whom, “Process analysis generates leverage in part by allowing researchers to examine the specific mechanisms through which an independent variable exerts an effect on a dependent variable” (George & Bennett, 2005, as cited in Mahoney, 2004, p. 88).

The comparative-historical method in this research was combined with the case study method. “Sequence arguments assume that the temporal location of events affects their impact on outcomes of interest” (Mahoney, 2004, p. 91), which in our case is a variable of a building code document.

If we assume that in a continental European spatial planning system, the spatial planning law (S) and building code (B) are necessary causes for obtaining a building permit (P), i.e., S+B = P, then we need to develop indicators to measure and score the building code variable in different temporal sequences. The indicators include common indicators (i.e., city type (capital city) and governmental level responsible for building permit issuing) and sequence-specific indicators (sociopolitical structure, spatial planning system, absence of building code, and building permit procedure deviations) to avoid inappropriately categorizing the sequences as similar. The scoring of indicators is “matched to assess whether cases follow the patterns of correspondence consistent with necessary and sufficient causation” (Mahoney, 2004, p. 87).

A Boolean approach to the qualitative comparison (Ragin, 1987) is used as a scoring method. “There are two conditions in the Boolean algebra: TRUE (or present) and FALSE (or absent). These two states are represented in base 2:1 indicates the presence, and 0 indicates the absence” (Ragin, 1987, p. 86). The basic Boolean operations, i.e., AND (conjunction), OR (disjunction), and NOT (negation), are used for the qualitative comparison of the above-mentioned case studies.

The comparative-historical analysis in Sequence 1 (the First Romano-Germanic Building Codes) conducted for the three case studies of Paris, Vienna, and Sarajevo, in terms of the existence of the building regulation in 1784, where related street classes to the maximum building height based on the basic Boolean operations indicate a disjunction (Table 32).

Table 32 The Comparative-historical analysis in Sequence 1: Content of the building regulation for Paris in 1784

Content	Paris 1784 regulation	Vienna	Sarajevo
Street classes	1	0	0
Max. building heights	1	0	0

Based on the Basic Boolean operations, the comparative-historical analysis results in Sequence 1 conducted for the three cities for the first building code until 1829 indicate a disjunction (see Table 33).

Table 33 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris/Vienna in 1829

Content	Paris	Vienna 1829 BC (Building code)	Sarajevo
Determination of the course of proceedings to be observed before undertaking a construction	1	1	0
Building regulations	1	1	0
Construction rules	1	1	0

Based on the Basic Boolean operations, the comparative-historical analysis in Sequence 1 conducted for the three cities for the content of the building code of 1859, indicates a disjunction, with the conjunction for the case studies of Paris and Vienna (see Table 34).

Table 34 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris in 1859/Vienna in 1829

Content	Paris 1859 BC	Vienna 1859 BC	Sarajevo
Building permit	1	1	0
Construction regulations	1	1	0
Industrial buildings	1	1	0
Completion of building considering regulations	1	1	0
Transitional and final provisions: Penalty clause	1	1	0
Implementation of a building code considering competencies of the authorities	1	1	0

The comparative-historical analysis in Sequence 1 conducted for the three cities for the content of the building code until 1868, based on the Basic Boolean operations, indicates the disjunction of the above-mentioned case studies, with the conjunction for the case studies of Paris and Vienna (see Table 35).

Table 35 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris/Vienna in 1868

Content	Paris	Vienna 1868 BC	Sarajevo
Building permit	1	1	0
Construction regulations	1	1	0

Content	Paris	Vienna 1868 BC	Sarajevo
Industrial buildings	1	1	0
Completion of building considering regulations	1	1	0
Transitional and final provisions: Penalty clause	1	1	0
Implementation of a building code considering competencies of the authorities	1	1	0

The comparative-historical analysis in Sequence 1 conducted for the three cities for the content of the building code in the 1880s, based on the basic Boolean operations, indicates the conjunction of all three above-mentioned case studies (see Table 36).

Table 36 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris in 1884/Vienna in 1883/Sarajevo in 1880

Content	Paris 1884 BC	Vienna 1883 BC	Sarajevo 1880 BC
Building line and existing streets, alleys, and square level definition	1	1	1
Building line and new street, alleys, and square level definition: building site selection	1	1	1
Land cessions and street fabrication	1	1	1
Building permits	1	1	1
Construction regulations	1	1	1
Public buildings	1	1	1
Industrial buildings	1	1	1
Determination of a special kind of obstruction and facilitation under facilitated			
conditions (excluding industrial buildings)	1	1	1
Completion of building considering regulations	1	1	1
Transitional and final provisions: Penalty clause	1	1	1
Implementation of a building code considering competencies of the authorities	1	1	1

The comparative-historical analysis in Sequence 1 conducted for the three cities for the content of the building code in 1902/1890/1893, based on the Basic Boolean operations, indicates the conjunction of the above-mentioned case studies (see Table 37).

Table 37 The Comparative-historical analysis in Sequence 1: Content of the building code for Paris in 1902/Vienna in 1890/Sarajevo in 1893

Content	Paris 1902 Decree	Vienna 1890 BC Amendments	Sarajevo 1893 BC
Building line and existing street, alleys, and square level definition	1	1	1
Building line and new street, alleys, and square level definition: building site selection	1	1	1
Land cessions and street fabrication	1	1	1
Building permits	1	1	1
Construction regulations	1	1	1
Public buildings	1	1	1
Industrial buildings	1	1	1
Determination of a special kind of obstruction and facilitation under facilitated conditions (excluding industrial buildings)	1	1	1
Completion of buildings considering the regulations	1	1	1
Transitional and final provisions: Penalty clause	1	1	1
Implementation of a building code considering the competencies of the authorities	1	1	1

The comparative-historical analysis in Sequence 1 conducted for the three cities in 1902/1890/1893 indicates a significantly smaller number of inhabitants in Sarajevo and a significantly smaller territory of Sarajevo during the same period. All the three cities were a part of the empires, and they were all capital cities with established building/planning authorities responsible for issuing building permits (see Table 38).

Table 38 The Comparative-historical analysis in Sequence 1: Sociopolitical parameters for Paris in 1902/Vienna in 1890/Sarajevo in 1893

Content	Paris 1902 Decree	Vienna 1890 BO Amendments	Sarajevo 1893 BO
Number of inhabitants	2,715.000	1,317.897 mil.	38.083
Municipal territory	86.9 km²	178.12 km²	11.75 km²
Government	Empire	Empire	Empire
City type	Capital city	Capital city	Capital city
First planning offices	Planning commission	1894 General regulation office	Building Authority 1880

The comparative-historical analysis of Sequence 2 (the building code in the Kingdom of Yugoslavia) was conducted only for the City of Sarajevo because the same building code and other sectoral laws applied to the cities and towns within the counties of the Kingdom of Serbs, Croats, and Slovenians[1], and based on the basic Boolean operations, shows a conjunction of all the mentioned case studies within the Kingdom (Table 39).

Table 39 Sequence 2: Content of the building code for Sarajevo in 1936

Content	Sarajevo and other cities and towns 1936 BC
Provisions on the building site	1
Provisions on the execution of buildings: 1. Technical regulations 2. Hygiene regulations 3. Aesthetic provisions	1
Safety provisions (buildings)	1
More detailed provisions on issuing building permits, building committee, and inspection supervision	1
Action (commission inspection, execution, penalty measures, and appeal)	1
Final provisions	1

Table 40 Sequence 2: Spatial planning legislation for Sarajevo in 1930s

Spatial planning legislation	Sarajevo and other cities and towns 1936 BC
Construction Law (1932)	1
Decree to determinate the cities and towns to which the first part of the construction law would apply (1932)	1
Urban planning code (1932)	1
General directives on the Detailed Plan Execution Decree Drafting (1932)	1
Code on building distances in the cities and the towns (1933)	1
Code on building zones in the cities (1933)	1
Code on volume and delimitation of building actions (1936)	1
Building Code (1936)	1
Tax and Levy Code (1938)	1

The comparative-historical analysis of Sequence 3 (Absence of a building code during Yugoslavia) conducted on the content of the Sarajevo County construction decision and SRBiH Spatial Planning Law, based on the Basic Boolean operations, indicates a prevalent disjunction of the above-mentioned case studies (Table 41).

1 1936 Building code applied for the cities and towns within the following counties: Beograd, I. Dravska banovina (Ljubljana), II. Savska banovina (Zagreb), III. Vrbaska banovina (Banja Luka), IV. Primorska banovina (Split), V. Drinska banovina (Sarajevo), VII. Zetska banovina (Cetinje), VIII Dunavska banovina (Novi Sad), VIII. Moravska banovina (Niš), IX. Vardarska banovina (Skopje)

Table 41 Sequence 3: Content of the Construction Decision and the Spatial Planning Law

Content	Construction Decision for Sarajevo County 1957	SR BiH Spatial Planning Law 1974 (13/74, 34/86 and 14/91)
General provisions	0	1
Basis of urban planning and spatial organization	0	1
Environmental protection and improvement	0	1
Spatial planning	0	1
Parcellation and building land arrangements	1	1
Building Permit	1	1
Residential areas and building construction	1	1
Institutions and stakeholders	1	1
Penalty provisions	1	1

The comparative-historical analysis of Sequence 4 (Contemporary spatial planning systems) was conducted for the following cities under case study: Capital City and SC, as a focus of the research; the Capital City Vienna as a role model city for the first Sarajevo building code documents; and the Capital City and Canton Zurich as a city within a country with a cantonal governmental model. The analysis indicates well-positioned cities within Europe. TEN-T Revision (2020) includes all the three countries and the three examined cities. Bosnia-Herzegovina has almost third the population of Austria and Switzerland, a size of a country between Austria and Switzerland. Unlike Zurich, Sarajevo and Vienna are capital cities, with Sarajevo being particularly smaller in terms of the population number. The significant difference among them is their GDP per capita. Governmental levels are complex in all the three countries and examined cities. A spatial planning law exists in all the three countries on the federal and regional levels. A building code does not exist in BiH and Sarajevo. Development costs are defined differently in all the three case studies (Table 42).

A comparative-historical analysis of the chosen case study cities, i.e., Paris, Vienna, and Sarajevo, was conducted on the basis of correlations between those cities. The Paris Building Code was the role model for the first Vienna building code, and the Vienna Building Code was the role model for the Sarajevo Building Code, when it was a part of the Austro-Hungarian Empire. Based on the analysis, the formative years for the creation of a building code in the case study cities were in the time framework between 1784 and 1930. There were regulations in all the three cities before the examined time framework, yet it did not result with

a building code document that would serve as a basis for building codes, which exist in two out of the three examined cities until today.

Table 42 Sequence 4: Spatial planning system characteristics in Sarajevo, Vienna and Zurich

Characteristics	Sarajevo	Vienna	Zurich
Location	Bosnia-Herzegovina South-East Europe	Republic of Austria Central Europe	Swiss Confederation Central Europe
Topography	From the Dinaric Alps to the Adriatic Sea	From Alps to Pannonian plain and the Danube Region	Jura, Swiss Plateau, Alpine foothills, Alps (40% of the area of the country), and on the southern side of the Alps
TEN-T corridors Revision (2020)	Western Balkans	Scandinavian-Mediterranean, Rhine-Danube, Baltic-Adriatic Sea, Western Balkans	North Sea Alpine
Number of inhabitants	3.3 mil.	8.8 mil.	8.1 mil.
Area	51.200 km²	83.900 km²	41.200 km²
Cities over a million inhabitants	- Sarajevo - 438.443 (2013)	Vienna 1.8 mil.	Zurich 1.2 mil.
City status	Capital city	Capital city	-
GDP	€ 20 billion	€ 370 billion	€ 642 billion
Governmental level	3 (federal, cantonal/ city, municipal)	3 (federal, federal provinces/city, municipal)	3 (confederal, cantonal/ city, municipal)
Spatial planning law on the federal/confederal level	Spatial Planning Law and Land Use at the FBiH Level (2006)	Constitutional Court (1954), -	The Swiss Federal Spatial Planning Law (1980)
Spatial planning law on the federal provinces/ cantonal level	Sarajevo Canton Spatial Planning Law (2017)	Vienna Urban Development, Urban Planning, and Building Code (WBO 1930)	Planning and Construction Law (PBG) adopted in (1975, amended in 1997 and 2010, 2013, and 2015)
Building code on the federal provinces/ cantonal level	-		Building Code/Ordinance (ABV) (adopted in 1977 and completed with explanations of articles from PBG in sketches, amended with additional sketches in 1991 and the measurement and calculation methods in 2017)

Characteristics	Sarajevo	Vienna	Zurich
Building permit procedure as a function of	Sarajevo Canton Spatial Planning Law (2017)	Vienna building code WBO (1930)	Building Procedure Ordinance (BVV) for Canton Zurich
Defined development costs of plans	Article 68 of the Federation BiH Law on building land (2003,2005) stipulates that planning benefits shall be provided at a rate of 1%–6%		Article 5 of The Swiss Spatial Planning Act (RPG, 2014) stipulates that planning benefits shall be provided at a rate of at least 20%

The outcomes of the method show that Paris and Vienna continually practiced a spatial planning system in which building permits are a function of a building code. Paris has that continuity since 1784 and Vienna since 1829 until today. Unlike Paris and Vienna, Sarajevo lost that continuity in the time framework 1945–1991 while practicing a socialist spatial planning system. The analysis of the contemporary spatial planning systems in the three case study cities confirms the continuity of the existence of a building code document as a function of a building permit procedure in Vienna and Zurich, unlike Sarajevo, where the building permit procedure is a function of the spatial planning law (see Figure 28). In the next section, we shall examine the planning and coding systems in contemporary Switzerland, Austria, France, and Slovenia to understand the building permit procedures in these case studies, the SC planning system in the Bosnia and Herzegovina legislative framework, and the causes and consequences of the absence of a building code.

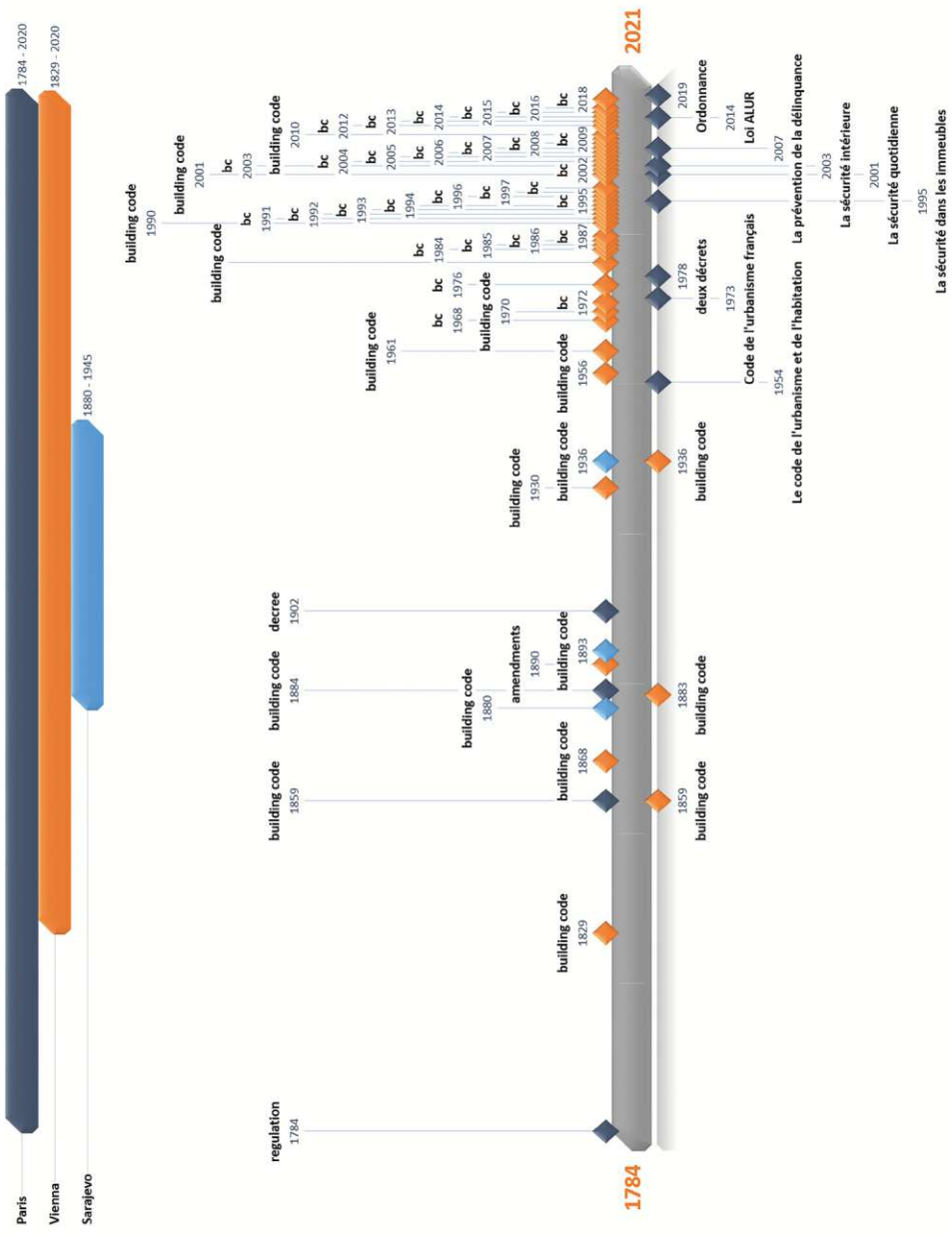


Figure 28 Frequency of the adoption of building codes (bc) during the history in Paris, Vienna, and Sarajevo *(Pelja-Tabori, own presentation)*

4.2 Outcomes of the Empirical–Analytical Methodological Research

The empirical–analytical methodological research is systematically divided into two parts: The first part is focused on the procedural planning implementation through the analytical decomposition of the building permit procedures, and the second part is focused on the institutional planning implementation through the analysis of implementation practices in the SC. Both components are critical sides of the same coin based on the hypothesis that a building code is a function of a building permit procedure on one side and planning implementation on another.

The empirical–analytical methodological research is based on the experience of revealing and explain certain phenomena, statements, and conclusion in combination with an analysis (Zelenika, 2000, p. 366). The analytical method is a scientific research process and reality explanation through the decomposition of complicated ideas, terms and concepts, statements, and conclusions to their simple components and studying each of them in relation with other components and the whole system (Zelenika, 2000, p. 327). This method, in combination with the empirical method, was used for understanding the building permit procedure in the SC in correlation to other elements that determinate this process and the whole spatial planning system of the SC. The time framework for this analysis is 1996–2020 and 2008–2020. A reduced SWOT analysis was used as an analytical method in this research to define the procedural shortcomings of a building permit procedure as planning implementation parameters to be evaluated.

The SWOT analysis originated from efforts at the Harvard Business School (HBS) to analyze case studies. In the early 1950s, two Harvard business policy professors, George Albert Smith Jr. and C Roland Christensen, started to investigate organizational strategies in relation to their environment. In the late 1950s, another HBS business policy professor, Kenneth Andrews, expanded this thinking by stating that all organizations must have clearly defined objectives and keep up with them. In the early 1960s, classroom discussions in business schools focused on organizational strengths and weaknesses in relation to the opportunities and threats (or risks) in their business environments. In 1963, a business policy conference was held at Harvard, where an SWOT analysis was widely discussed and seen as a major advancement in strategic thinking (Ghazinoory et al., 2011). Although the SWOT analysis dates back to the 1950s and 1960s, Weihrich who introduced an SWOT matrix as a tool for situation analysis can be regarded as the most important reference in this field that has provided some classic examples (Weihrich, 1982, as cited in Ghazinoory et al., 2011). SWOT analysis in this research defines the weaknesses of the building permit procedure because it is directly related to the phenomena of the absence of a building code document

in the SC. The sources for the empirical and analytical methods are the Institute for Canton Planning and the experience of the researcher working at this institution for 20 years. The case study for review is the SC building permit procedure. The researcher developed a list of shortcoming elements of the building permit procedure based on the Spatial Planning Law (2017) and studied each element using a qualitative empirical–analytical approach in a form of a reduced SWOT analysis. All weak parts of the procedure were characterized using a descriptive framework. Information classified in this manner forms a procedural shortcoming list from which a check–rank–evaluate questionnaire will be created and administered to the expert team of the Delphi method (Section 4.3.). The outcomes of the Delphi method confirmed or completed a procedural shortcoming list that was used for checking the empirical model. “For improving the effectiveness of SWOT, many researchers have integrated it with other methods (especially analytical and quantitative methods)” (Panagiotou, 2003, as cited in Ghazinoory et al., 2011, p. 35). Therefore, the GIS mapping database of the Institute for Canton Planning were combined with the reduced SWOT analysis.

A GIS is a computer-based tool for spatial planning and spatial data analysis. GIS is one of the IT tools that may assist in decision-making processes.

The qualitative SWOT methodology in combination with the quantitative GIS methodology is expected to provide more relevant and accurate data to the research.

The SWOT analysis can recognize weaknesses of a building permit process, evaluated by the Delphi method. It was connected to the GIS spatial data for the SC in a series of time-framed evaluations showing the interrelations between the following factors:

- Spatial coverage of the research, consisting of administrative borders of municipalities, city, and Canton
- Land-use planning indicators: spatial plan, land-use plans, and spatial plan amendments
- Number of requests for urban permits compared to the number of requests for building permits and number of requests for building control permits
- Number of professional opinions issued
- Four building regime regulation areas (urban core territory, urban territory, beyond urban territory of secondary settlements and in centers of rural communities defined as urban territories of the communities, and beyond urban territory) in correspondence with the spatial distribution of the number of requests for urban permits, building permits, and professional opinion.

The outcomes of the reduced SWOT analysis in combination with the GIS analytical and quantitative method examined that, by hypothesis, the building permit

procedure in the SC has shortcomings. Acknowledging that by the hypothesis building permit procedure is a function of the restrictiveness of a building code and other factors, such as land-use regulation, other relevant laws, and bylaws, as well as land and housing value (Noam, January 20, 1985; Kok et al., January 20, 2013). Accordingly, an empirical model was built from the following equation:

1. The first hypothesis to be evaluated is that a building permit (BP) procedure in the SC is a function of the non-restrictiveness of a building régime regulation (BR) and other factors (X_l):

$BP = f (BR, X_l)$,

where BR is a continuous variable measuring the non-restrictiveness of a building regime regulation in the SC and X_l is a vector of other factors that contribute to the building permit procedure. These include variables affecting the building location, such as the type of land and property ownership (private or state owned; Y), zoning according to zoning plans (e.g., housing, industry, and business; Z), and according to the building regime territory (urban and beyond urban territory; W). Other factors affecting the building permit procedure include site characteristics, such as topography T, distance of a specific location from the urban core territory D, and density of population V.

The contribution of these factors to the building permit procedure is not likely to be linear, but it changes within the size of variables. A logarithmic equation can capture these nonlinearities and express the relation in terms of elasticities. The following functional relation is specified:

$$1nBP = b_0 + b_1\ 1nBR + b_2\ 1nY + b_3\ 1nZ + b_4\ 1nW + b_5\ 1nT + b_6\ 1nD + b_7 1nV + €$$

(1)

The second equation of the model considers that the non-restrictiveness of a building regime regulation is a function of various factors, based on the hypothesis on the building permit in a specific plan according to a building regime degree (1–4). Because of the non-restrictiveness of building regimes, all localities cannot maintain their prescribed urban composition and will be exposed to an uncontrolled change in their urban form based on the hypothesis.

2. This can be described by specifying the non-restrictiveness of a building regime regulation as a function of the building permit procedure BP and other factors K_m.

$BR = f (BP, K_m)$

Among the K_m variables are the institutionally organized planners and architects who are in favor of the strict land-use regulations marked as C, and on another side are investors who work in the opposite direction I. Another factor may be the

local political attitude marked as R, which can be in favor of the less restrictive regulations and mentality to obey the regulations marked as S. Therefore, the non-restrictiveness of the building regime regulation logarithmically counts non-linearities as

$$1nBR = c_0 + c_1\ 1nBP + c_2\ 1nC + c_3\ 1nI + c_4\ 1nR + c_5\ 1nS + u, \quad (2)$$

which is an equation simultaneous with (1). The two systems can be estimated empirically. The database for the research is available in the GIS database of the Institute for Canton Planning. In addition to these data, socioeconomic statistics from the census publications of the Federal Institute for Statistics and estimations of development costs from the SC Building Institute were collected. The non-restrictiveness of the building regime regulations can be defined for the whole SC territory. For estimation purposes, the variables in Equations (1) and (2) are defined as follows: BR is determined by the number of parameters prescribed for the four building regimes (the whole SC territory) in the decision on plan implementation in the development plans.

Each hypothesis has been analyzed for the purpose of estimation of a model for a future building code in the SC.

The non-restrictiveness index of a building régime is $BR_I = \sum_{k=1}^{4} \mathrm{Cj}$,

where Cj is the cost of non-restriction expressed as the development cost of plans. The mean of the cost is standardized as k=1. In other words, the non-restrictiveness index is an aggregate of the development costs of a detailed planning documentation, weighted by a relative costliness to the society.

Furthermore, the type and number of building permits on a specific location would express the volume of construction in relation to the non-restrictiveness of the location, identifying the location where the building code must provide precise regulations.

The empirical outcomes are assumed to examine whether the non-restrictiveness of a building regime regulation effect planning implementation and development costs of plans. The non-restrictiveness index of the SC land-use planning is an indicator of an unsustainable land-use management and land-use implementation.

The qualitative institutional analysis introduces the term “sustainability” and sustainability indicators or precisely land-use planning implementation indicators to the research methodology.

Sustainable development is an internationally agreed development goal by Agenda 21 (UN, 1992) and the United Nations Millennium Declaration General Assem-

bly resolution (UN, 2000). As such, it is a part of the EU development policies in the framework of, among others, the Sustainable Urban Development in the European Union: A Framework for Action. Agenda 21 Chapter 10 focuses on the integrated approach to the planning and management of land resources (Commission of the European Communities, 1998). One of the objectives of Chapter 10 is to improve and strengthen planning, management, and evaluation systems for land and land resources by not later than year 2000.

Activities defined for this chapter of Agenda 21 include activities for developing supportive policies and policy instruments, such as:

- To review the regulatory framework, including laws, regulations, and enforcement procedures, to identify improvements needed to support sustainable land use and management of land resources and restrict the transfer of productive arable land to other uses.

The scientific and technological means of implementation, according to Agenda 21, imply enhancing the scientific understanding of the land resource system, when priority should be given to, among others:

- Developing indicators of sustainability for land resources, considering environmental, economic, social, demographic, cultural, and political factors (UN, 1992).

Although the identified activities in Agenda 21 imply that improvements needed to support sustainable land use and management of land resources, no precise indicators have been developed considering the effective implementation of plans as a key to the sustainable management of resources:

> Unfortunately, implementation is a relatively neglected field of research, and the research that does exist suggests that plan implementation has been relatively ineffective. Consequently, implementation research is identified as one of the top priorities on the environmental sustainability research agenda. (Margerum, 1999, as cited in Calbick et al., 2003, p. 71)

Certain studies have developed frameworks for effective or sustainable implementation based on successful implementation practices used by innovative resource management agencies in land-use planning. The methodology used in the study conducted by researchers Calbick, Day, and Gunton at Resource and Environmental Management at Simon Fraser University (Canada) is unique because it was among the first studies to survey experienced implementation practitioners to identify essential factors for successful implementation. Its methodology is based on the program theory, established by Rossi et al. in the 1980s (Rossi et al., 2004). Furthermore, it served as a basis for formulating questions for the Delphi method.

In this research, Rossi et al.'s program theory evaluation method was undertaken to describe the nature and effects of an intervention as a contribution to knowledge. The assessment of program processes (or process evaluation) questions program operations, implementation, and service delivery. The main evaluation questions are as follows: Does our spatial and land-use implementation work well? To which extent are our plans implemented? How frequently have they have been changed? Which are the main reasons for a change or an amendment?

The program goals and objectives defined for this method are as follows:

- Using evaluation to improve land-use implementation.
- Increasing the land-use implementation by enhancing the building permit procedure.
- Capacity building by enhancing successful implementation practices.

The catchment area is the SC area (1,277 km²). The target population is the SC population (438,443 inhabitants). The stakeholders are nine SC municipalities; City of Sarajevo (four out of nine municipalities); SC Ministry for Spatial Planning, Building, and Environmental Protection; Institute for Canton Planning; Institute for Canton Building; and Cantonal Institute for Natural and Cultural Heritage. The performance criterion is based on the continental European building permit procedures (assessment through a comparison with research and practice (Rossi et al., 2004, p. 174).

The first step for the case study was to select the SC spatial planning institutional practices involved in the building permit procedure for examination. Each institution was studied using a variety of methods, including analysis of documentation (e.g., empowering legislation and planning documents). Institutional programs were characterized to depict each institution responsibilities: organization, capacity, decision making, planning, management tools, implementation aspects, assessment techniques, and stakeholders (Calbick et al., 2003). The material developed in this methodology was a database for an implementation practice register, from which a questionnaire has been developed and sent by e-mail to the selected program personnel of the institutions. After the completed questionnaires were returned, a follow-up interview provided background information for the context and better understanding of responses. The original study provided an example framework for purposes of the comparison of the outcome of the case study in the SC with the "best practices in land-use implementation". The outcome served to evaluate the level of sustainability of the SC spatial planning implementation. The results of the empirical–analytical methodological research are extremely important for the practical implementation of the research in the contemporary spatial planning system of the SC and for the science of spatial planning because they (the results) represent the phase of collecting the scientific data upon which scientific validity is caused.

In the 21st century, evaluation research has become solidly incorporated into the routine activities of all levels of government throughout the world, into the operations of nongovernmental organizations, and into the public discussions of social issues (Rossi et al., 2004, p. 10). In its broadest meaning, it aims to evaluate the means to ascertain the worth of or to fix a value on a certain object. Evaluations were conducted for a variety of practical reasons: to aid in decisions concerning whether programs should be continued, improved, expanded, or curtailed; to assess the utility of innovative programs and initiatives; to increase the effectiveness of program management and administration; and to satisfy the accountability requirements of program sponsors (Rossi et al., 2004, p. 13).

Our evaluation program is a building permit procedure in the SC. It appertains to a process evaluation/Implementation assessment, as defined by Rossi. A basic and widely used form of evaluation, i.e., assessment of the program process, assesses the fidelity and effectiveness of a program's implementation. Such process assessments evaluate the activities and operations of the program and are commonly referred to as process evaluation or, when the evaluation is an ongoing function, program monitoring. The process evaluation investigates how well the program is operating. It might examine how consistent the services actually delivered are with the goals of the program, whether services are delivered to appropriate recipients, how well service delivery is organized, the effectiveness of program management, the use of program resources, and other matters (Rossi et al., 2004, p. 71).

If we assume that the building permit procedure in the SC may be evaluated as a process within the sociopolitical, economy, and environmental reality, this evaluation may be crucial as a parameter of sustainable development, regarding the fact that sustainable development implies factors of society, economy, and environment.

Hence, evaluation questions shall be structured in three sets of factors: environmental, sociopolitical, and economical questions connected to the building permit procedure implementation in the SC.

Assessment of the program process (or process evaluation) implies questions about program operations, implementation, and service delivery (Rossi et al., 2004, p. 68).

The nature of the evaluator–stakeholder relationship in our evaluation of a building permit procedure is the empowerment evaluation. Some evaluators have advanced a view of the evaluator–stakeholder relations that emphasizes the initiative, advocacy, and self-determination of the stakeholders (Fetterman et al., 1996, as cited in Rossi et al., 2004). In an empowerment evaluation, the evaluator–stakeholder relationship is participatory and collaborative. In addition, however, the eval-

uator's role includes consultation and facilitation directed toward developing the capabilities of the participating stakeholders to conduct evaluations on their own, to use the results effectively for advocacy and change, and to experience a sense of control over a program that affects their lives. The evaluation process, therefore, is directed not only at producing informative and useful findings but also at enhancing the self-development and political influence of the participants. As these themes imply, empowerment evaluation most appropriately involves those stakeholders who otherwise have little power in the context of the program, usually the program recipients or intended beneficiaries (Rossi et al., 2004, p. 65).

At the beginning of the evaluation method implementation, we shall answer the following questions, implied by Rossi et al. (2004):

- Q1: What are the nature and scope of the problem? Where is it located, whom does it affect, how many are affected, and how does the problem affect them?
- Q2: What is it about the problem or its effects that justify new, expanded, or modified social programs?
- Q3: What feasible interventions are likely to significantly ameliorate the problem?
- Q4: What are the appropriate target populations for intervention?
- Q5: Is a particular intervention reaching its target population?
- Q6: Is the intervention being implemented well? Are the intended services being provided?
- Q7: Is the intervention effective in attaining the desired goals or benefits?
- Q8: Is the program cost reasonable in relation to its effectiveness and benefits?

These are the answers to the posed questions:

- A1: The building permit procedure has shortcomings. The scope of the process evaluation/implementation assessment is to enhance a building permit procedure in terms of sustainability, as mentioned above, of the spatial planning system. The program is in the SC. It affects the following stakeholders: SC citizens, canton institutions, the city, and the municipality departments. Three government levels, i.e., canton, City, and municipality, and 438,443 SC inhabitants are affected. (Federalni zavod za statistiku, 2019)
- A2: This problem causes misbalances in the environmental, social, and economic development of the SC. Environmental misbalances include uncontrolled construction and building land expansion. Social misbalances include a weak and unequal rule of law. Economic misbalances include an unsafe environment for investments and low development costs of plans to enable public investments.
- A3: Reintroducing the building code document to the SC spatial planning system
- A4: SC population

- A5: If being introduced to the SC spatial planning legislation, it will reach its target population.
- A6: The intervention shall hypothetically be implemented with the defined services to be provided.
- A7: Yes, it could be effective in attaining the desired goals or benefits, if implemented.
- A8: Yes, it could be, if implemented.

The standards by which program performance may be judged in an evaluation include the following:

- The needs or want of the target population
- Stated program goals and objectives
- Professional standards
- Customary practice; norms for other programs
- Legal requirements
- Ethical or moral values: social justice and equity
- Past performance: historical data
- Targets set by program managers
- Expert opinions
- Pre-intervention baseline levels for the target population
- Conditions expected in the absence of the program (counterfactual)
- Cost or relative cost. (Rossi et al., 2004, p. 88)

Typical questions about program operations and service delivery (assessment of program process):

- Are administrative and service objectives being met?
- Are the intended services being delivered to the intended persons?
- Are there needy, but unserved persons the program is not reaching?
- Once in service, do enough clients complete service?
- Are the clients satisfied with these services?
- Are administrative, organizational, and personnel functions managed well? (Rossi et al., 2004, p. 90)

The questionnaire based on the evaluation program theory will be presented as a part of the Delphi methodology outcomes (Table 53), which were sent to the questioners in the form of a questionnaire.

We shall now proceed to the outcomes of the empirical–analytical methodological research in the following order: qualitative procedural land-use planning implementation outcomes, quantitative procedural land-use planning implementation outcomes, and Delphi methodology outcomes.

4.2.1 Qualitative Procedural Land-use Planning Implementation Outcomes

With the aim to examine the established hypothetical framework, a procedural land-use planning implementation analysis was conducted as a reduced SWOT analysis of the building permit procedure in the SC (Figure 29) according to the Spatial Planning Law (LOSP) (2017) and the detailed analysis of the urban permit procedure in the catchment area of the SC as the most important precondition for obtaining a building permit and building control permits.

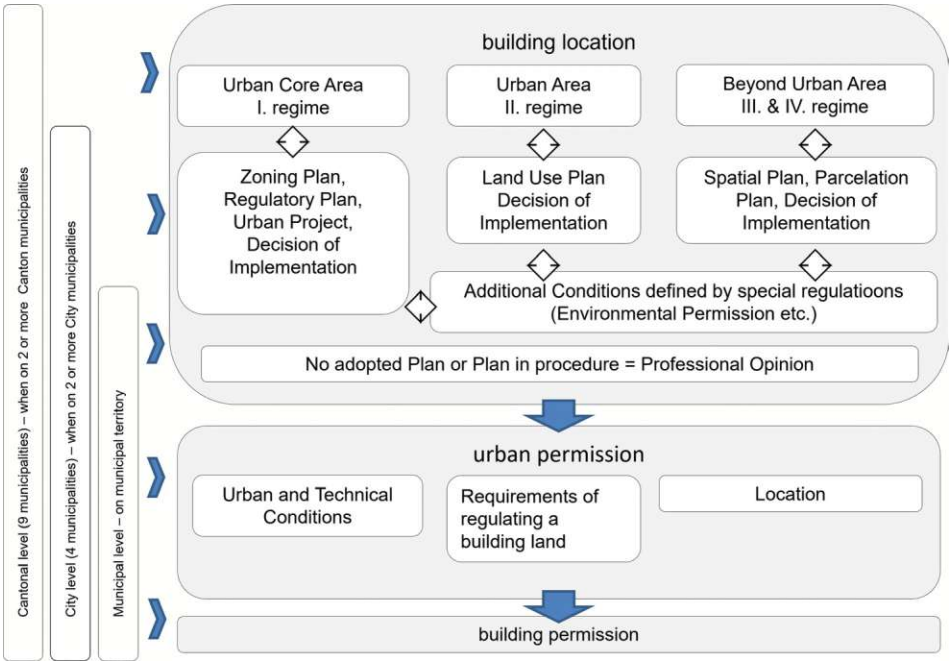


Figure 29 Schematic representation of the building permit procedure in the Sarajevo Canton *(Pelja-Tabori, own presentation)*

The reduced SWOT analysis (Table 43) leads us to the classification of all binding elements of the building permit procedure in the SC to identify the following list of procedural shortcomings:

- Overlapping competencies of different governmental levels
- Undefined public interest
- Inconsistency of plans/frequent changes of plans
- Professional opinions
- Urban permit/supplementary urban permit/location information
- Building permit/supplementary building permit.

Table 43 Shortcomings of a building permit procedure in the Sarajevo Canton

Shortcomings		Particular weaknesses
Governmental competencies	Public interest	LOSP 2017* does not define buildings and infrastructure that represent the cantonal's, city's, or municipality's interest
		Overlapping of the three governmental levels
		Public interest not defined
		Rights and obligations of private and public land and property owners not defined considering public interest
		Land and property owner's obligations considering construction of their part of communal and traffic infrastructure not defined
		Cadastre and land registry not harmonized yet
Building location	Accordance with spatial and land-use planning documentation plans	Obsolescence of the spatial and land-use plan and collision between them
		Obsolescence of a methodology for producing spatial planning documentation
		Four building regimes only defined by the hierarchy of planning documents and not by a building order
		Absence of a binding structure and restrictiveness of the decisions of implementation
		Frequent corrections (LOSP 2005) and amendments of detailed plans (LOSP 2017)
		Absence of binding cantonal documents dealing with the problem of parking and garages
	Professional opinionrequirement	Absence of specific parameters regulating relations to existing protected buildings or ambient, which could be defined by LOSP in relation to the new building code
		Stressing individual or institutional decision making considering urban design instead of defining the form of a law
Urban permission / Location information		Enactment urban and technical conditions do not rely on or provide any specific parameters but mostly copies the technical description from an applicant design project
		Land development fee amount
		LOSP 2017 does not recognize the supplementary urban permission procedure
Building permission		Building permission being function of plans, other conditions, location information, or urban permission and not a building code and construction law

** Spatial Planning Law (LOSP) 2017 does not include the supplementary building permission procedure*

Overlapping Competencies of Different Governmental Levels

Depending on the specified conditions, according to the Spatial Planning Law (Section §48), request for obtaining an urban permit, as a binding precondition for building permit, is addressed to one of the three governmental levels: munic-

ipality mayor, city mayor, or Ministry of Spatial Planning, Building, and Environmental Protection. The special regulation of the city mayor defines buildings and infrastructure that represent the city's interest, with the consent of the cantonal government (Section 46.3.). The cantonal government recommends to the cantonal assembly, with a consent of municipality mayors, to define buildings and infrastructure that represent cantonal interest, in a form of a special enactment (Section 46.5.).

Particular Weakness:

The SC Spatial Planning Law does not define buildings and infrastructure that represent cantonal interest or buildings that represent the city's or municipality's interest, but it also does not define an unbuilt environment (forests, green belts, and parks), where preservation represents the interest of inhabitants to maintain and enhance a healthy environment. This gradation would make a difference in criteria for different levels of building procedures: municipal for the construction of single houses and other constructions and cantonal for interventions in preservation zones, woods, and other areas that represent the cantonal public interest.

Undefined Public Interest

Although Section 4.I of the Spatial Planning Law defines the principles of spatial planning as a "reconciliation between private and public interest" and in Section 23.2.g that regulatory plan "ensures public and common interest to provide functional areas", it is not further defined on what is a public interest and what are the rights and obligations of private and public land and property owners considering a public interest. Furthermore, on the law, it does not distinguish between private land and property owners and public land and property owners (e.g., municipality, public institutions, and former socialist companies). Land and property owners' obligations considering the construction of their part in communal and traffic infrastructure are not defined (which was not the case with the Socialist Republic of Bosnia-Herzegovina Spatial Planning Law, Section 147, 1974). The law does not define public interest concerning the following:

- Neighbor interest
- Reallocation
- Expropriation for public interest
- Expropriation for traffic purpose
- Demolition of buildings in protected zones.

The law also does not define private rights regarding violations of urban and technical conditions prescribed in the decision of implementation.

Particular Weakness:

- Rights and obligations of private and public land and property owners are not defined.
- Land and property owners' obligations considering the construction of their part of communal and traffic infrastructure are not defined.
- The cadastre and land registry are not fully harmonized yet.

Incosistancy of Plans/Frequent Changes of Plans/Decisions on Plan Implementation (Building Regulation)

The SC Spatial plan for the period 2003–2023 (adopted in 2006, amended in 2011 and 2017), which is a binding plan, covers the whole area of the canton and defines within it the following:

- Urban territory with the urban core territory
- Areas beyond the urban territory (Secondary settlements and centers of rural communities and all other types of land defined by the law, except the building land: farmland, woods, water areas and water sources, protected and individually protected values, Infrastructure systems, exploitation fields, other land and areas reserved for and future development).

SC urban territories (Sarajevo, Ilijaš, Hadžići, and Trnovo) are covered with the land-use plans (adopted in 1990, amended in 1999; since 2016, the new ones are being prepared).

We shall shortly make a digression here and explain the following: Because of the gap in the circumstances in which they were created and the time flow between the two plans (spatial and land-use plans), there are collisions between them (borders of the urban territory, farmland area, park and wood areas, and industry), which are overcome by the Spatial Planning Law, which derogates the Land-use Plan and refers to the spatial plan in the mentioned cases. The result is as follows: A building permit in those areas was obtained according to the spatial plan and not the land-use plan. Bearing in mind that the land-use plan is a far more detailed development spatial documentation, collision with it lowers the conditions for obtaining building permits. Creating or amending the development planning documents (e.g., regulatory plans) according to the amendments of the spatial plan. In the cases of collision with the land-use plan, without amending the land-use plan affects the quality of the detailed planning documentation, considering that in those cases, there are no parameters for social infrastructure, services, and communal infrastructure.

We shall continue with the explanation of a building permit procedure and conclude that the first classification of a building location, in the building permit process, follows the spatial and/or land-use plan.

According to the law, the spatial plan defines the following land uses:

- Building land
- Farmland
- Woods
- Water areas and water sources
- Protected and individually protected values
- Infrastructure systems
- Exploitation field
- Other land and areas reserved for future development.

The decision on plan implementation of the spatial plan in accordance with the Spatial Planning Law (2017) defines the four building régime regulations according to the borders of urban core territory, urban territory, and beyond urban territory (Figure 30).

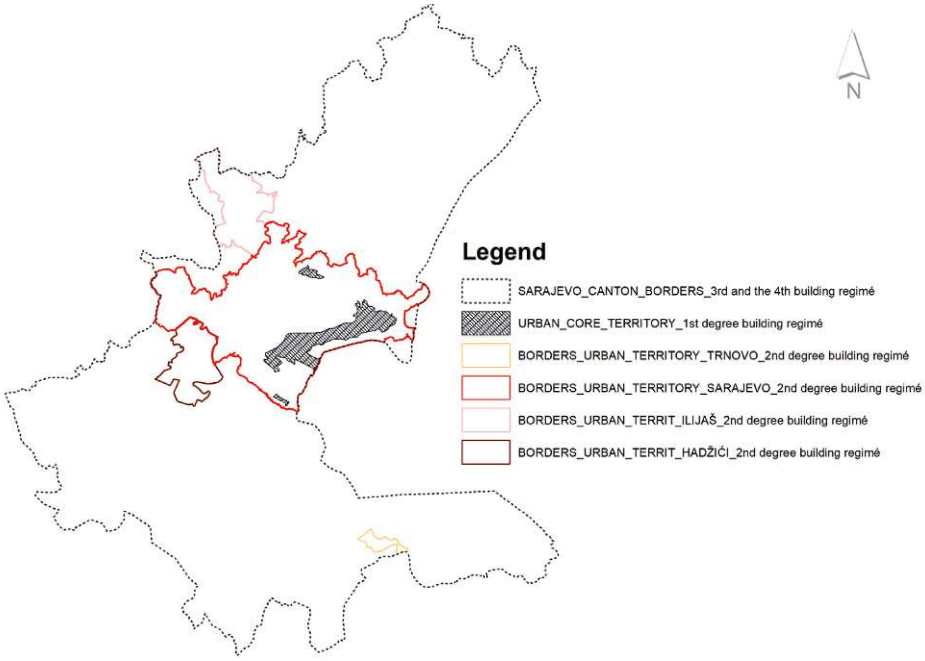


Figure 30 Spatial organization of the four building regimes' area *(Institute for Canton Planning)*

The four building regime regulation provides the following:

- For the urban core territory in the first-degree building regime, building regulations are defined by a zoning plan, regulatory plan (in scale 1:1,000), and urban project (1:500).
- For the urban territory not covered with regulatory plans or if a plan is not adopted yet in the second-degree building regime, building regulations are de-

fined upon a land-use plan (1:5,000), parcellation plan (1:1,000), decision on plan implementation, professional opinion issued by the Institute for Canton Planning, and conditions defined by special regulations.

- In the areas beyond the urban territory of secondary settlements and in centers of rural communities defined as urban territories of these communities in the third-degree building regime, building regulations are defined by a spatial plan (1:25,000), parcellation plan (1:1,000), decision on plan implementation, and conditions defined by special regulations.
- In the areas beyond urban territory in the fourth-degree building regime, building regulations are defined by a spatial plan (1:25,000), parcellation plan (1:1,000), decision on plan implementation, and conditions defined by special regulations.

The four building regime regulation is the only building regulation in the absence of a building code. As mentioned above, for areas not covered with development plans or if the plan is in the adoption procedure, an urban permit is issued upon, among other conditions, professional opinions. The repercussions of the professional opinions being a precondition for building permits will be elaborated hereafter and in the quantitative procedural land-use implementation outcomes. In the absence of a building code, the regulation defining building regimes is the only one to rely on when prescribing urban and technical conditions for building permits. The general observation about the building regime concept is that it is not a building order but a new zoning plan that overlays the land-use zones defined by the plan. Building régimes differ from one another only with the type of plans that are binding for each régime, but they do not develop a building system, a building order that would clarify how to build in each building zone. This condition complicates the building permit procedure because it relies on four diverse types of plans, which differ in scale and level of details and building regulations provided by plans. The spatial plan and land-use plan do not provide building regulations that contain alignment and construction lines and building heights, whereas the zoning plan, parcellation plan, regulatory plan, and urban project do contain the above-mentioned building regulations. Consequently, a building permit procedure that relies on a building regimes that are not covered with development plans cannot provide a building regulation. The SC Spatial Plan for the period 2003–2023 (Figure 31) and its amendments (Figure 32) define protected areas; natural monuments and cultural heritage areas; protection of soil, air, and water; farmlands; woods; river banks; and protection of urban standard (water supply, minimal communal infrastructure, defined building ratio for housing zones, mandatory conditions for pedestrian and vehicle traffic, waste disposal, and noise protection) and protection from natural disasters and war actions.

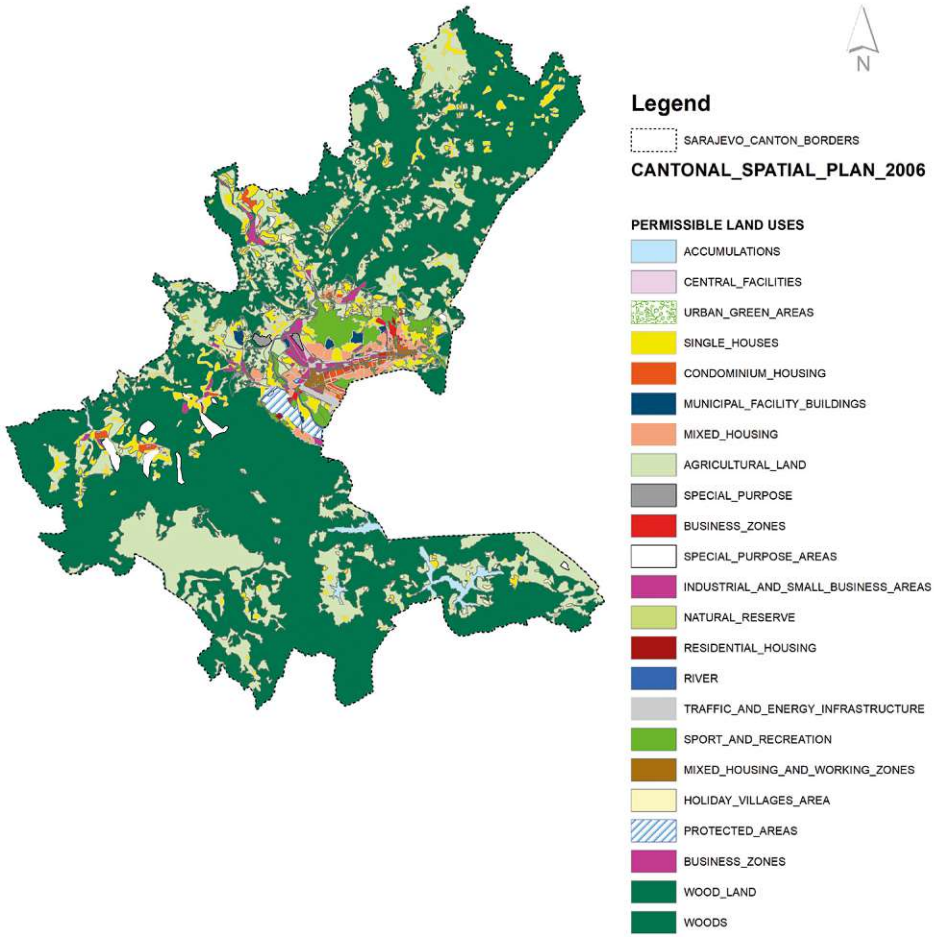


Figure 31 Sarajevo Canton Spatial Plan for the period 2003–2023 and its amendments *(Službene novine Kantona Sarajevo, 2006, Institute for Canton Planning)*

Although building conditions exist in the plan, they are very broadly defined, and we qualify them as non-restrictive. However, we shall demonstrate it by quoting the decision on implementation of the plan (Chapter 3.3 entitled “Urban and technical conditions for obtaining an urban permit in the areas for which the spatial plan does not prescribe adoption of detailed plans” (Sections §17–§129) urban and technical conditions for obtaining an urban permit in the first-, second-, third-, and fourth-degree building régimes. According to Section §23 of the decision on implementation of the SC Spatial Plan for the period 2003–2023,

- All the existing structures, which are contrary to the spatial plan, are to be maintained until the execution of the plan and maintenance of the structures is permitted. [...]

- Holiday houses and settlements for rural tourism should not exceed a net usable area of 80 m², one story, plot size of 300–1,000 m², and should be built in accordance with the environment. [...]
- In areas beyond the urban territory, social infrastructure, business, and smaller industry buildings should be approved by an urban permit. [...]
- Exceptionally, in rural areas, beyond defined building land, the municipality mayor may propose to the municipality council, with the approval of the cantonal ministry, to define new building land for the construction of new buildings and areas for wide rural tourism development. For these areas, the third-degree building régime is defined. (Službene novine Kantona Sarajevo, 2017)

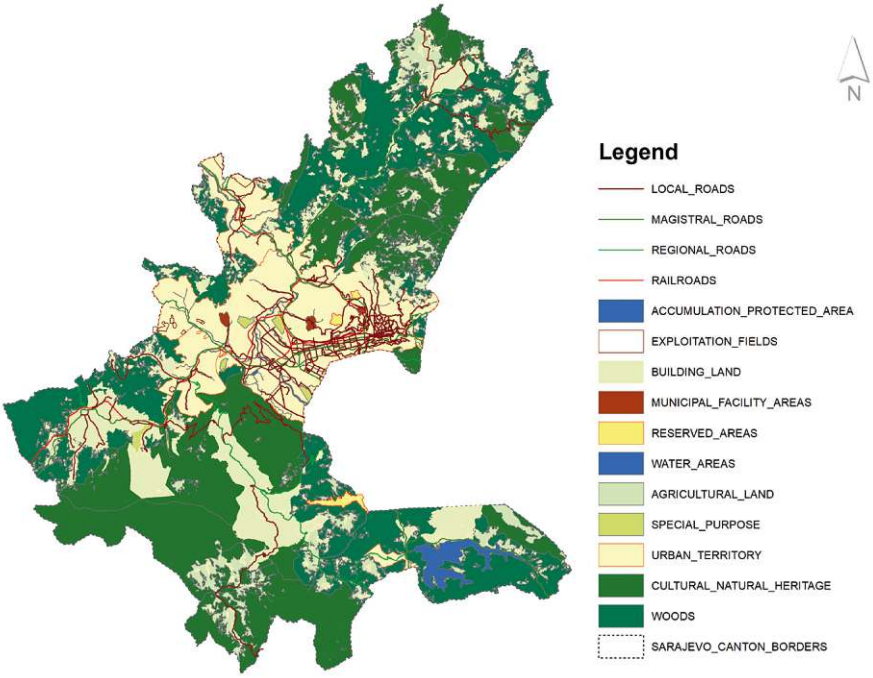


Figure 32 Sarajevo Canton Spatial Plan for the period 2003–2023 and its amendments *(Službene novine Kantona Sarajevo, 2017, Institute for Canton Planning)*

Urban and technical conditions are written in a very general manner. For instance, in the Canton Sarajevo Spatial Plan for the period 2003–2023 (Section §35), “Buildings must be built compatibly with the environment and must fulfil aesthetic conditions” (Službene novine Kantona Sarajevo, 2017).

However, what aesthetic conditions are or what it means to build compatibly with the environment is not understandable. The decision on plan implementation

does not have a clear structure, nor is appending a plan with building regulation in sketches, as in French form-based coding. It does not contain obligatory building parameters, such as building height, floor building ratio, building classes, distances between buildings, architectural design, and relation to landscape and cityscape.

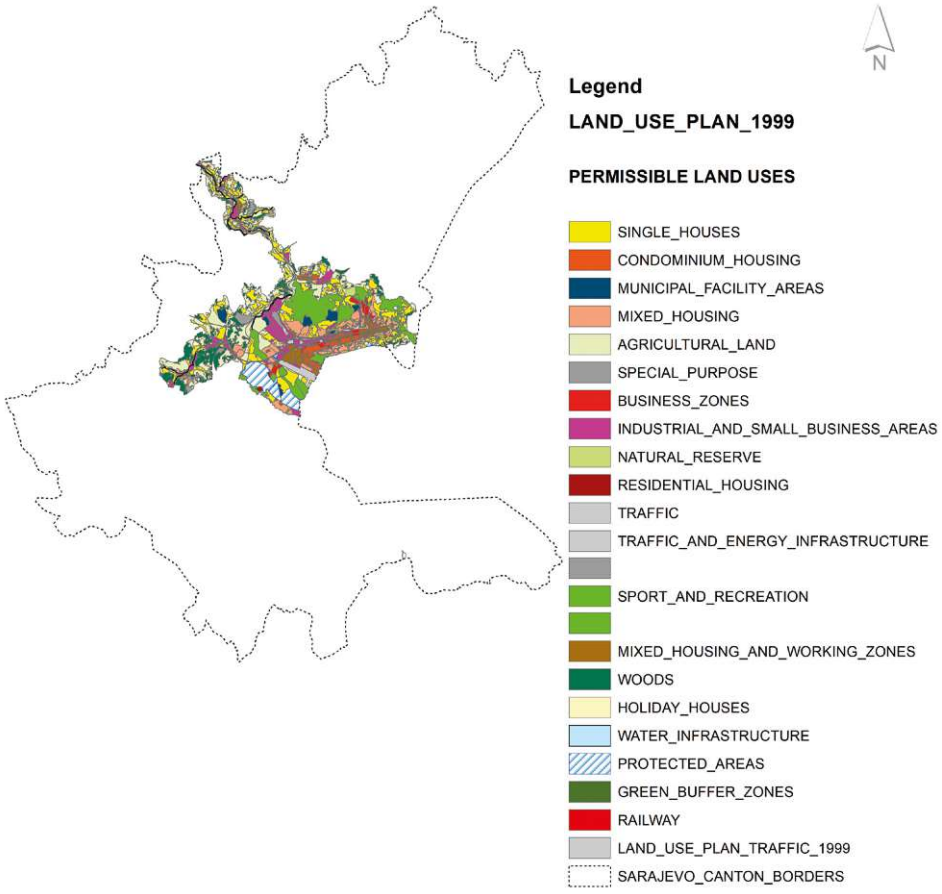


Figure 33 City of Sarajevo Land-use Plan for the period 1986–2015 *(Službene novine Kantona Sarajevo, 1999, Institute for Canton Planning)*

The City of Sarajevo Land-use Plan for the period 1986–2015 (Službene novine Kantona Sarajevo, 1999) (Figure 33) defines the following zones:

(i) Building land
   a. Collective housing
   b. Mixed housing
   c. Individual housing
   d. Mixed housing and business
   e. Business
   f. Industry and small enterprises

g. Social standard
h. Traffic and energy infrastructure
i. Water infrastructure
j. Sport, recreation, parks, and green belt areas
k. Residential housing
l. Communal buildings

(ii) Farmlands
(iii) Woods
(iv) Special use (military)
(v) Reservation
(vi) Protected areas of I and II (water source of drinking water protected areas)
(vii) Roads

The decision on plan implementation of the City of Sarajevo Land-use Plan for the period 1986–2015 differentiates the first- and second-degree building régimes. The first-degree building régime is for the urban territory, whereas the second-degree building régime is for individual housing zones (mostly areas of informal settlements). Precise urban and technical conditions for these zones are not provided, except the building system, planned number of inhabitants, average floor number (not more than the ground floor plus six floors), floor area ratio ≤1, building coverage <20%, and social infrastructure and services according to the gradation of the center's level to the following:

- Urban core territory
- Secondary centers
- Regional centers
- Local centers
- Community centers.

As in the case of the decision on plan implementation of the spatial plan, the decision on the plan implementation of the land-use plan is not a separate document. It contains no exact regulations considering specific building zones. It is not explained graphically, and there are no calculations for the parameters of a plot, but only for an area of a prescribed regulatory plan. Urban project boundaries and regulations are not specified in the land-use plan, but are subject to regulatory plans and another document called the Program of the Sarajevo Urban Core Area Development (Službene novine Kantona Sarajevo, 1999), again with almost no precise regulations considering, for example, building types, permissible building height according to a building type, construction methods, calculations considering building height and building outline, building design, roof extensions, dormers, reconstruction, sanitation, or adaptation of the existing structures in the urban core area.

Consequently, the general and non-rigorous regulations of the zoning plans (spatial and land-use plans) with undefined building zones, in the sense of building typologies, relationship of a building toward the street, and development plans (regulatory plan and urban project) created a system that works opposite to the planning. In such a system, planners are mostly documenting the built environment (sanitation plans in informal settlement areas), which makes the detailed planning documentation subject to frequent “corrections” and amendments. The building permit procedure for existing non-legalized settlements or new buildings is related to frequent amendments or corrections of the detailed plans. The spatial planning system recognizes urban permits as the function of a building permit. In other words, building depends on planning regulations, while building regulations do not exist or are very generic

We shall make a digression here and explain that the complexity of Sarajevo’s zoning plans may be defined in one word – the obsolescence of the spatial planning system. Serious and well-studied plans created in the 1980s were, in those years, up to date with European center in terms of transportation concepts, housing, industry, sport and recreation areas, and heating system and infrastructural concepts in general. The problem started in the 1990s, when, because of the war, the city started to stagnate and regress, by losing the chance to accept new European concepts, such as sustainable development and cohesion policy. It unfortunately affected the post-war spatial and land-use documentation in a sense to mostly retain the status quo or built environment. In practice, it meant the legalization of informal settlements or performing sanction plans instead of regulatory plans and legitimizing mostly uncontrolled urban sprawls. The result was an urban form dominantly shaped by individual housing at the beginning of the millennium and most recently with increasingly high-rise buildings, beyond the prescribed average heights and floor area ratio of the zones prescribed by the land-use plan.

Because of the absence of a vision in the zoning plans and the absence of a new European form of strategic documents and informal documentation, such as spatial planning strategies and concepts, the zoning and development plans were missing a concept. The plans became a reflection of market trends on one side and existential housing/legalization on another. The beauty of planning, innovative solutions, and better urban living quality have almost been forgotten in the plans. From the technical point of view, the zoning plans have been performed in the GIS and with a solid database, but not coordinated with all the cantonal institutions, which are neither equipped nor technically with human resources at the same level as the Sarajevo Institute for Canton Planning.

The SC Spatial Planning Law (Službene novine Kantona Sarajevo, 2005) introduced a plan correction (Section §46) as a correction of a technical mistake. The correction was misinterpreted as a plan amendment for a specific plot. The valid SC Spatial Planning Law (Službene novine Kantona Sarajevo, 2017) eliminated this section.

The SC Spatial Planning Law has foreseen cases of amendments of plans (Section §39) and a potential initiators of plan amendments (Section §40):

- All governmental levels (cantonal, city, and municipality assembly, cantonal government, city mayor, and municipal mayor)
- Administrative institutions
- Chamber of economy or other professional chambers
- Local community council
- Property owners
- Investors
- NGOs.

The program of measures and activities for enhancing the current state is a document defined by the law to be prepared by the cantonal assembly (Section §30), and it contains the estimation of a necessity for amending the existing detailed planning documentation (Section §30.2.). This section was misunderstood as a different governmental level responsibility overlapping because the enactment of a detailed planning documentation is not a responsibility of the canton, but the city and municipalities. Therefore, this preventive filter, conceptualized by the law, is not actually functioning.

The period of validity of a development plan is not defined by the law, which also has consequently resulted with frequent amendments of development plans.

Particular Weakness:

- A methodological obsolescence of spatial and land-use development documents, in other words spatial planning documentation, is being created in the same methodology as the first Spatial Planning Law (1974), even though the sociopolitical circumstances changed. It does not contain strategy, informal planning instruments, and energy spatial plans.
- Collision between the spatial, land-use, and regulatory plans makes additional pressure on the implementation.
- The four building régimes are only defined by the hierarchy of planning documents and not a building order based on the construction law.
- The absence of a binding structure and restrictiveness in the decisions of the implementation of the spatial and land-use plans based on the construction law.

- Frequent corrections (LOSP 2005) and amendments of detailed plans (LOSP 2017)
- Absence of binding cantonal documents dealing with the problem of car parking and garages and other regulations that may complement the implementation of zoning plans.

Professional Opinions

In the case of a building location in an area that is not covered with a detailed planning documentation, the law obliges the local government-level institutions to apply for a professional opinion in the Institute for Canton Planning. If the location is in protected areas of natural and cultural heritage, the law obliges to apply for a professional opinion of the Cantonal Institute for the Protection of the Cultural, Historical, and Natural Heritage of Sarajevo or other institutions responsible for the protection of the cultural and natural heritage on federal and national levels.

Professional opinions, according to the law, contain urban and technical conditions for building, documentation of a location, and large building conditions for initiating a creation of detailed documents (LOSP, 2017, Section §55.4).

Particular Weakness:

- The absence of specific parameters regulating the relation to existing protected buildings or ambient, which should be defined by the law
- Stressing individual or institutional responsibility in decisions considering urban design.

Urban Permit/Suplementary Urban Permit/Location Information

We shall continue with the explanation of a building permit procedure and state that an urban permit and according to the new Spatial Planning Law (2017) optionally also location information (for simple buildings, Section §51) precede to the application for a building permit. The concept of urban permits anticipating a building permit was established by the SRBiH Spatial Planning Law of 1974, and it remains of use until today. This procedure mainly emphasizes the importance of compliance with planning documentation because it contained the so-called decisions of implementation that regulate the plan, although their content is not defined by the law. Hence, the decisions of implementation (can be compared to the French règlement) have no mandatory structure. The building zones, according to the four building régimes, have no established building regulations, considering parameters defined as urban and technical conditions by the law. The mandatory part of the urban permit is an enactment named “urban and technical conditions.” These conditions (Section §67 of the Spatial Planning Law 2017) are presented as follows:

- Proscribed types of occupation or use of a building
- Plot size and shape

- Construction and alignment line
- Floor area ratio and building area ratios
- Building size and floor number
- Building height and distances from neighboring plots
- Elevation points of a ground floor in relation to public road
- Requirements of the architectural design of a building
- Car parking or garage areas according to urban norms
- Requirements of regulating a building plot and green areas, especially obligations and mode of connection to a public road and infrastructure systems, in case the absence of installation network, minimal requirements for regulating a building land are proscribed
- Requirements for environmental protection
- Requirements of protecting persons from natural disasters, catastrophes, and war
- Requirements for eliminating architectural barriers to persons with disabilities
- Other conditions.

The above-mentioned specific urban and technical conditions for specific zones are not defined by the law and are very generally provided in the spatial, land-use, and development plans.

Location is an enactment that contains a graphic excerpt from a plan or a situation with a site and a shape of a building in 1:1,000 and consists of all relevant data about a specific building location for which the application for a building permit is being requested: cadastral number, building and regulation lines, distances from neighboring buildings, and public roads, signed and sealed by a responsible institution.

According to Section §46 of the law, a land development fee shall comprise actual costs of preparing and developing a building location/site as envisaged in the zoning plans, program for developing a building land, and decision on municipal building land. The land development fee is a cost that the land or/and property owner or investor are obliged to bear. The Decision on Legalization (Službene novine Kantona Sarajevo, 2006) prescribes that it is possible to apply for a supplementary urban permit procedure, which is a far more simplified procedure with numerous benefits for informal builders. Applicants for supplementary building permits as defined in the Decision of Legalization, if they are a social category, are exempted from the land development fee.

Particular Weakness:

- Urban permit precondition for building permits and supplementary urban permit precondition for supplementary building permits (in the case of legalization).
- In the procedure of obtaining urban permits, an enactment of the urban and technical conditions does not rely or provide any specific parameters defined by a law, but it mostly copies the technical description from an applicant design project. In other words, there is no building code, but there is an individual assessment of a municipality clerk to evaluate whether a design project meets plans, decisions of implementation, and other regulations.
- A land development fee is relatively low or not chargeable in certain cases.
- The Spatial Planning Law does not recognize supplementary urban permit procedure.
- Relatively short validity period (one year) of the urban permit defined by the law, during which one must apply for building permits.

Building Permit/Supplementary Building Permit Procedures

A building permit is an administrative enactment defined by Section §68 of the SC Spatial Planning Law, which is being issued when ascertained that a building is according to a plan, other conditions defined for the specific building location by the law, other laws and bylaws, location information, and planning permits. If a building was built without a building permit, it cannot be connected to communal and traffic infrastructure (Section §68.4), which is not the case for informal settlements. It is one of the reasons for including those cases in the Decision on Legalization (Službene novine Kantona Sarajevo, 2006) and in another type of procedure called the supplementary building permit procedure. Depending on the preconditions, the SC Spatial Planning Law defines the following building permit procedures:

- Building permit procedure proper (Section 75)
- Building permits for complex structures (Section 82)
- Building permits for preparatory works (Section 83)
- Building permits for temporary buildings (Section 84)
- Special building permits (Section 70).

The Spatial Planning Law defines cases where a building permit need not to be obtained (Section §69). It also defines exceptional cases of construction (Section §70) and permit for reconstruction, alteration, change of use, sanction, and protection (Section §71).

A request for building permits (Section §73) must contain the following documentations:

- Location information or valid urban permits
- Data on land parcels and owners specified in the cadastre
- Evidence on building right on a specified plot
- Geodetic survey
- Design project
- In cases of complex structure execution project
- Written report and notification certificate if needed
- Evidence on special provisions considering environmental protection
- Survey of geotechnical investigations
- Evidence on performed obligation considering compensation for developing a city construction plot
- Evidence prescribed by special regulations.

Building permits expire if the construction is not commenced within one year after the permit has been granted. Building permits can be extended for one additional year if requested by the investor, only if conditions upon which a permit has been issued have not changed (Section §78.2.).

Particular Weakness:

- Building permits being function of plans, other conditions, location information or urban permits, professional opinion and not a building code, and technical guidelines.
- The SC Spatial Planning Law does not include a supplementary building permit procedure.
- The relatively short validity period (one year) of building permit defined by the law, during which one must begin construction.

We have understood from the qualitative procedural land-use planning implementation outcomes the main shortcomings of a building permit procedure in the SC. Accordingly, we may conclude that the procedure is complicated, unclear, bypassed with a parallel procedure in the form of legalization, not included in the spatial planning law, generates economic losses, and susceptible to corruption in the absence of a building code.

4.2.2 Quantitative Procedural Land-use Implementation Analysis Outcomes

The list of procedural shortcomings was the basis for the more focused quantitative case study analysis of the building permit procedure. The extensive databases of requests for location information, requests for urban permits, requests for building permit and requests for building control permits related to the catchment area of the SC, apart from the municipality Hadžići, which does not participate in the survey[2], were analyzed. Urban and building permits issued by the City of Sarajevo and Cantonal Ministry for Spatial Planning, Building, and Environmental Protection were included in the total number of urban and building permits presented here. All the above-mentioned institutions deliver their databases on submitted requests for urban and building permits to the Institute for Canton Planning.

The outcomes of the research show that there were 275 requests for location information, 31,971 requests for urban permits, 10,649 requests for building permits, 481 requests for building control permits, and 18,150 requests for professional opinions on July 15, 2020. The timeframe for the analysis of the databases of location information, requests for urban permits, requests for building permit, and requests for building control permits was June 2008–July 2020. The timeframe for the analysis of the database of submitted requests for professional opinion to the Institute for Canton Planning was December 2006–July 2020. The time frame for the analysis on the GIS database establishment is the year 2008, from which we may follow the databases from the SC municipalities, from the City of Sarajevo, and from the SC Ministry for Spatial Planning, Building, and Environmental Protection.

The number of requests issued by the Cantonal Ministry of Spatial Planning, Building, and Environmental Protection in the period 2008–2020 was as follows: 33 requests for urban permits and 4 requests for building permits. The number of requests issued by the City of Sarajevo in the period 2008–2020 was as follows: 10 requests for urban permit and 3 requests for building permit. The significantly less urban and building permits issued by the City of Sarajevo and Cantonal Ministry of Spatial Planning, Building, and Environmental Protection indicate that there were only few requests for permits for buildings larger than 10.000 m² and/or positioned in two or more city/municipalities, as defined by the Spatial Planning Law (2017).

2 All nine Sarajevo Canton municipalities are passing their data bases on enrolled requests for urban permits to the Institute for Canton Planning except Municipality Hadžići. Municipality Hadžići is not ceding data on issued urban and building permits to the Institute at all. Municipality Vogošća is not ceding the full data in the recent years.

All 31,971 requests for urban permits and 11,405 requests for building permits were primarily classified by the author as requests for permit proper and requests for supplementary permits. Supplementary urban and building permit, as the legislative category, exist since 2006 when the Decision on Legalization of buildings constructed without building permit and temporary buildings was adopted (Službene novine Kantona Sarajevo, 2006). However, it is not part of the Spatial Planning Law (Službene novine Kantona Sarajevo, 2017).

Accordingly, the Decision on Legalization has been renewed on a yearly basis from 2006 until 2008. Then, there was a break for four years, after which the decision was renewed in 2012 and another break for three years, and the renewal again, and for the last time in the year 2015. The repercussions of enactments of the Decision on Legalization on the building permit procedure are indicated by a higher number of requests in the respected years. Usually, the years of enactment of the Decision on Legalization amendments (2008, 2012, and 2015) represent a jump in the number of requests (Figures 34, 36, 37, 38, 40, and 41).

Analysis of requests for urban permits

The analysis implied a precise examination of all the requests in the database of the Institute for canton planning, which meant new findings about requests for supplementary urban and building permits that were not originally registered in the database, probably by omission.

The analysis of requests for urban permits indicates the total number of registered requests for supplementary urban permits and additionally registered requests for supplementary urban permits (Figure 34).

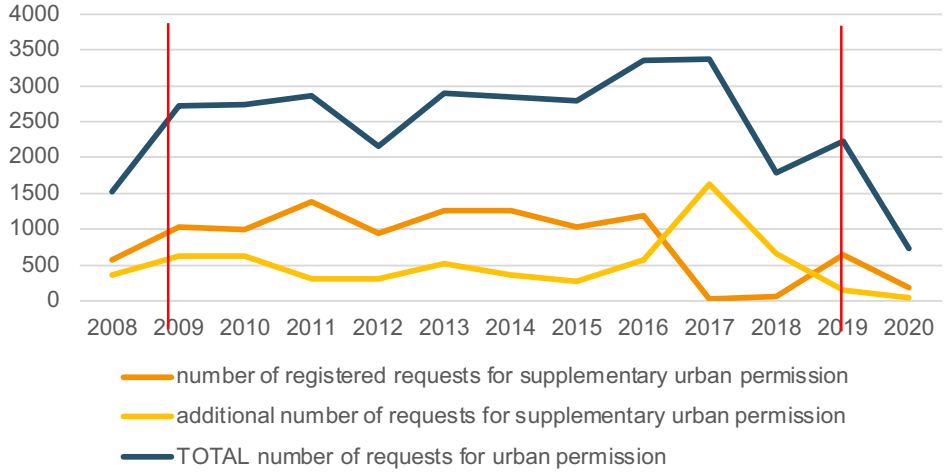


Figure 34 Urban permit procedure analysis in Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

The decrease in the graph (Figure 34) in 2008 and 2020 is caused by the examined period of the evaluation of half a year for year 2008 and 2020, compared to years 2009–2019 where the full year period was examined. The analysis indicates a significant decrease in the number of submitted requests for urban permits since 2017 when the new spatial planning law was adopted. Based on the analysis, there are 17,092 requests for supplementary urban permits from a total number of 31,971 requests for urban permits (Figure 35).

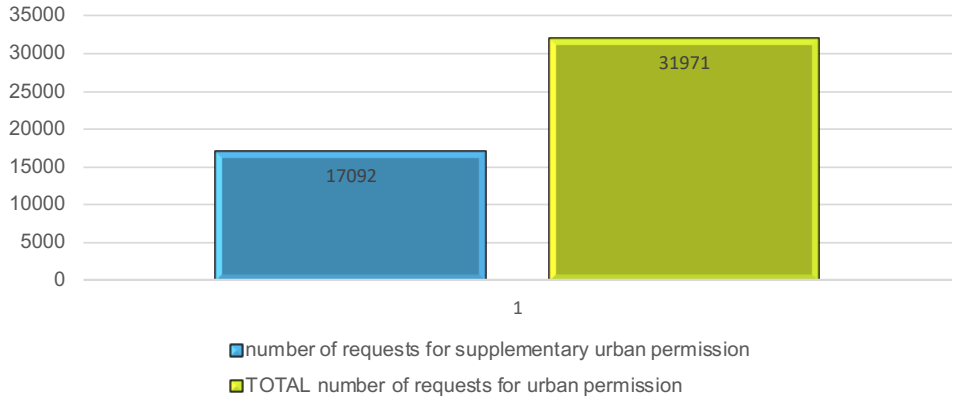


Figure 35 Requests for supplementary urban permits in the total number of requests for urban permits in the Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

The analysis indicates that more than half of all the submitted requests for urban permits are requests for supplementary urban permits, or every second request is a request for supplementary urban permits or requests that are bypassing procedure defined by the Spatial Planning Law. The Spatial Planning Law does not recognize a supplementary urban permit procedure. It (supplementary urban and building permit procedure) is regulated through a bylaw in the form of the Decision on Legalization. According to the Decision on Legalization, it is possible to apply for a supplementary urban permit procedure, which is a far more simplified procedure with many benefits for informal builders. Applicants for supplementary building permits, as defined by the Decision of Legalization, if they are a legally defined social category, are exempted from the land development fee. In other words, because legalization is not included in the Spatial Planning Law, it means that applying for supplementary urban permits is allowing a parallel system or bypassing the procedure regulated by the law in which one applies for an urban permit properly. When classified through years in the timeframe 2008–2020, the analysis indicates that the peak in the submitted requests were the years 2016 and 2017 until when the number of submitted requests for supplementary urban permits was constantly over 50% of the total number of submitted requests for urban permits (Figure 36).

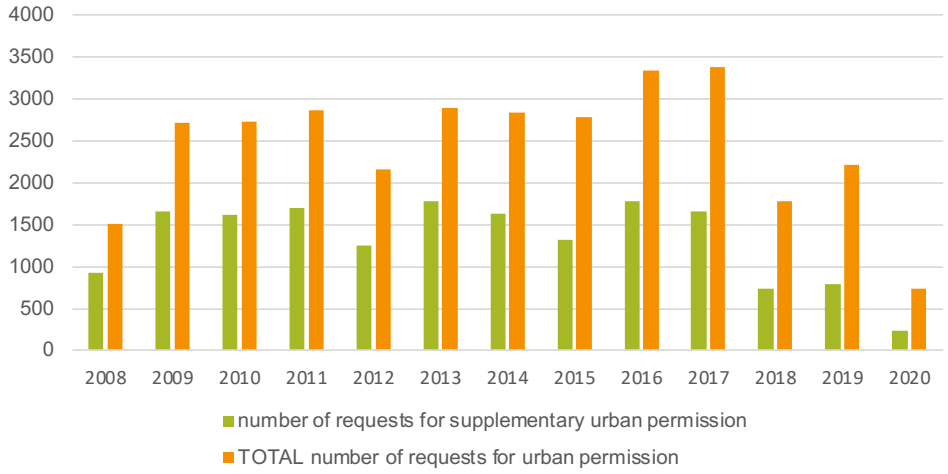


Figure 36 Number of requests for the supplementary urban permit in the total number of requests for urban permits in the Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

After 2017, when the new Spatial Planning Law was adopted, the number of submitted requests for urban permits dropped down below 50% of the submitted requests for urban permits. There are several reasons for this decrease. One reason is the adoption of the new Spatial Planning Law (2017), which did not include legalization. Another reason has been not adopting a new "Decision on Legalization" since 2015, which partly interrupted the entire process of legalization. We may notice a significant decrease in the number of submitted requests in the year 2012, when the new Decision of Legalization was adopted after it was not renewed for four years, since 2008 (Figure 37).

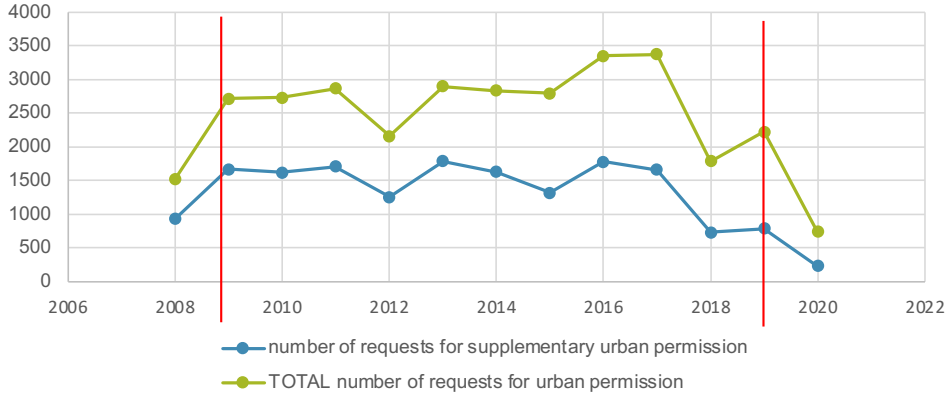


Figure 37 Urban permit procedure in the Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Analysis of requests for building permits

Furthermore, we have the outcomes of the analysis of requests for building permits. As in the case of the analysis of the requests for urban permits, the analysis indicated a considerable number of founded additional requests for supplementary building permits (Figure 38) by omission and a significant representation of the number of requests for supplementary building permits in the total number of requests for building permits.

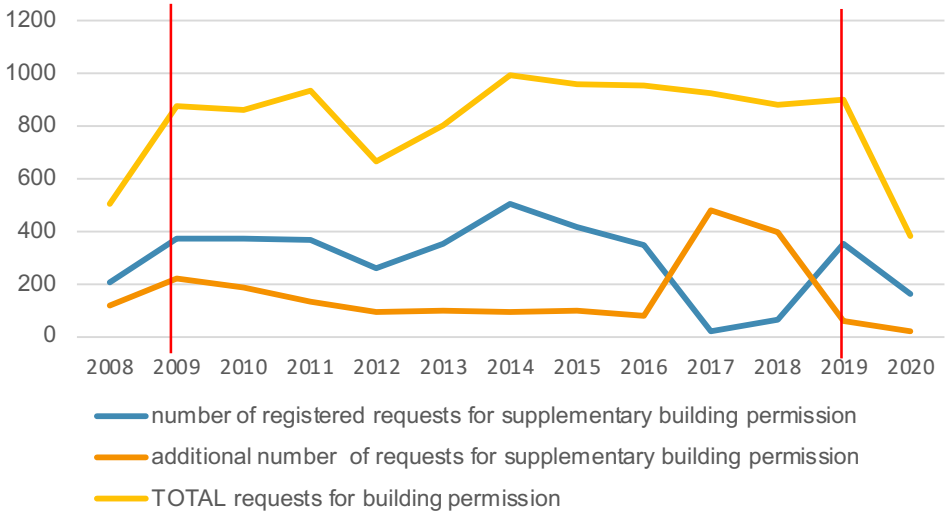


Figure 38 Building permit procedure analysis in the Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

There are 5,856 requests for supplementary building permits in the total number of 10,649 requests for building permits (Figure 39). We have the same case as with the analysis of submitted requests for urban permits, when analyzing requests for building permits, because we may conclude that every second request for a building permit is a request for a supplementary building permit.

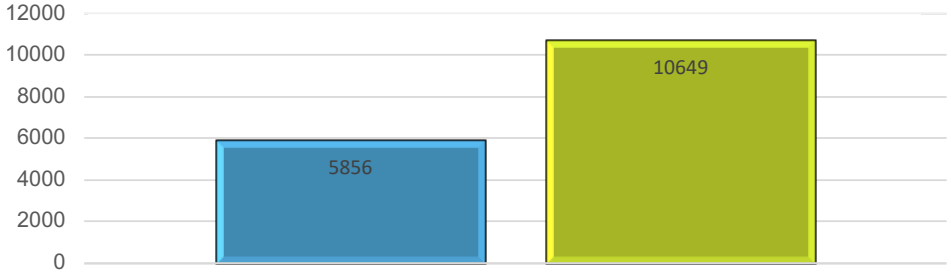


Figure 39 Requests for the supplementary building permit share in the total number of requests for building permits in the Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

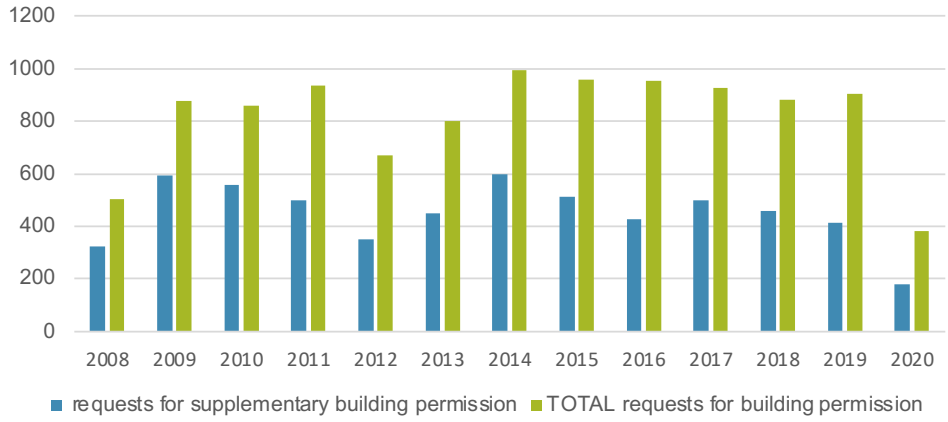


Figure 40 Number of requests for supplementary building permit in the total number of requests for building permits in the Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

When classified through years in the timeframe 2008–2020, the analysis indicates that the decrease in submitted requests happened only in 2012. After 2012, the number of submitted requests continued to increase (Figure 40). Drop-downs in the years 2008 and 2020 appeared for the same reason as in the database analysis of requests for urban permits because the analysis covers a half-year period.

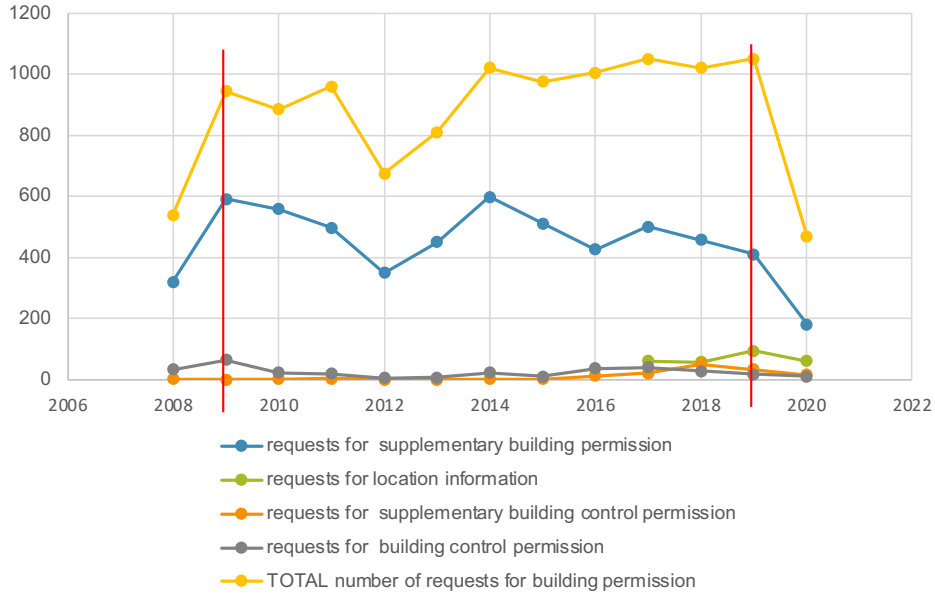


Figure 41 Detailed analysis of the requests for building permits in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Figure 41 shows all the analyzed categories included in the database of requests for building permit:

- Total number of requests for building permits
- Number of requests for supplementary building permits
- Number of requests for location information (Spatial Planning Law, 2017)
- Number of requests for supplementary building control permits
- Number of requests for building control permits.

Figure 41 indicates a continuous increase in submitted requests for building permits since 2008 and a decrease in the number of submitted requests for supplementary building permits since 2014; constant albeit very small number of requests for supplementary building control permits and requests for building control permits. Even though analysis of the request for location information was included in the database of requests for building permit, they belong to the category of urban permits and has been evaluated in this context subsequently.

The building permit (Section §68.1 of Spatial Planning Law of 2017) in a form of a notification can be obtained if it is insured that the building is according to the following:

- Zoning and development plans
- Other conditions defined for the specific building location by the Spatial Planning Law and other laws and bylaws
- Location information (for simple buildings, Section §51)
- Urban permits.

Considering that a building permit procedure is a function of the spatial and land-use documentation implementation, we present further analysis of plans in the timeframe 1996–2020, practically the whole post-war period in Bosnia-Herzegovina, which, as we could see in the historical part of this research, marked the turning point for the SC, in terms of new territorial organization, political system, and new socioeconomic conditions. Even though sociopolitical and economy circumstances changed, the spatial planning legislative system remained the same. The analysis shows that significant changes in the Spatial Planning Law produced turbulence in spatial planning documentation (Figure 42). As we could see from the graph (Figure 42), introducing corrections to the Spatial Planning Law (Službene novine Kantona Sarajevo, 2005) resulted in enormous changes in development plans in the period 2005–2017. Corrections were eradicated from the new Spatial Planning Law (Službene novine Kantona Sarajevo, 2017), yet they were replaced with amendments of plans in a summary procedure. This observation can be seen in the graph as well.

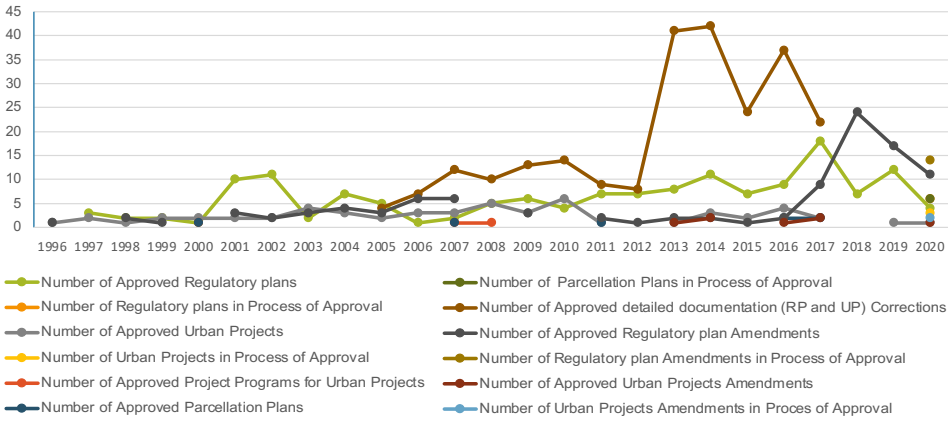


Figure 42 Detailed planning documentation analysis in the timeframe 1996–2020 *(analysis performed on 8.9.2020, Institute for Canton Planning, Pelja-Tabori, own presentation)*

The graph (Figure 42) indicates that changes in the spatial planning system are controlled and produced by the law. The analysis indicates that of all the submitted requests, 74% are requests for urban permits, 24% are requests for building permits, and only around 1% are requests for building control permits (Figure 43). In other words, every third applicant for an urban permit proceeds to building permits, and every 22nd applicant for building permit proceeds to a building control permit.

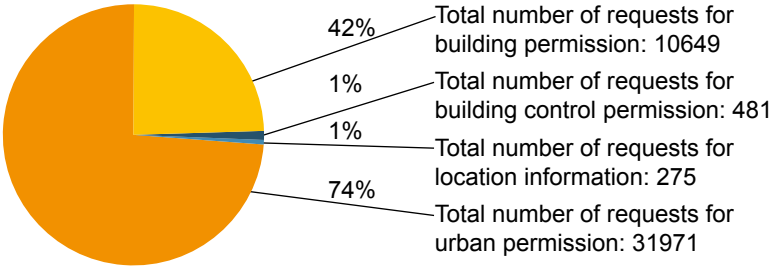


Figure 43 Building permit procedure in Sarajevo Canton indicators in percentages *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

When analyzing the building permit procedure in the SC in the last decade (June 2008–July 2020), the outcomes of the analysis show a decrease in the number of requests for urban permits, increase in the number of requests for building permit, and a constant number of requests for building control permits (Figure 44). A significantly smaller number of requests for building permits when compared to the number of requests for urban permits indicates that the building permit proce-

dure needs to be improved. The building permit procedure in the SC is, among other factors, jeopardized by the existence of supplementary procedures, short deadlines, and additional expenses of a building permit procedure when compared to the expenses of the urban permit procedure, as shown in the qualitative procedural land-use planning implementation outcomes.

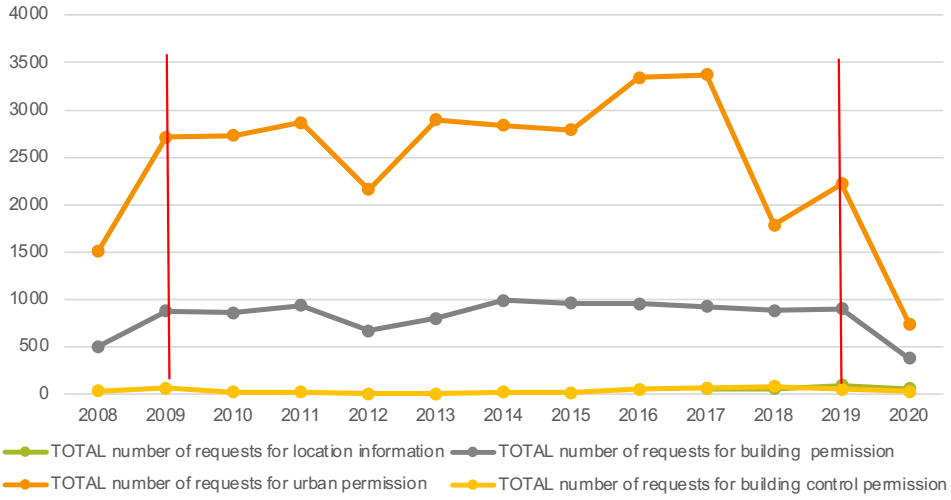


Figure 44 Building permit procedure in the Sarajevo Canton in the timeframe 2008–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Analysis of requests for urban permit typologies

Before concluding, we shall get back to the analysis of the urban permit procedure again but in a more detailed manner, i.e., the analysis of the typologies of requests for supplementary urban permits and requests for urban permits. The process of the analysis implied the definition of the 28 typologies from the 31,971 analyzed requests to understand the proportion of certain typologies in the total number of submitted requests. These typologies will require regulations in the future building code. Twenty-eight typologies are further classified to 10 typologies for supplementary urban permits (legalization) and 18 for urban permits (Figure 45). The timeframe for the analysis is June–December 2008 and June–December 2019. In the period June–December 2008 (Figure 46), the most represented typologies of requests for urban permits ordered by the number of requests are the legalization of existing buildings and construction of a single house (Table 44).

Other typologies represented in high percentages indicate that special attention should be paid on defining design regulations for these typologies in the future building code. In the period June–December 2019 (Figure 47), the most repre-

sented typologies of requests for urban permits ordered by the number of requests are again the legalization of existing buildings and construction of a single house (Table 45).

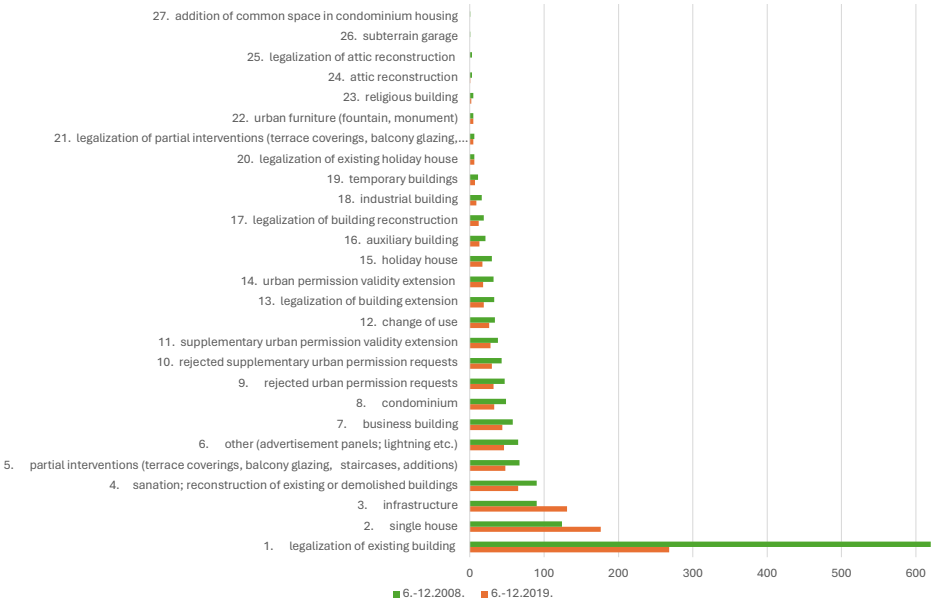


Figure 45 Typologies and number of requests for supplementary urban permit and urban permits in the Sarajevo Canton in the period June–December 2008/June–December 2019 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

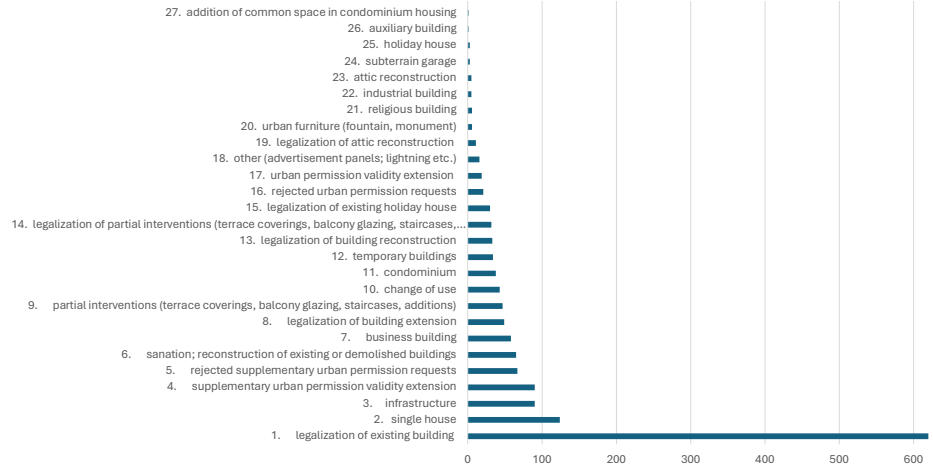


Figure 46 Representation of the diverse typologies in the total number of submitted requests for urban permits in the examined period June–December 2008 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

Table 44 Classification of requests for urban permits according to the number in 2008

Type of request		Number
1.	legalization of existing building	620
2.	single house	124
3.	infrastructure	90
4.	supplementary urban permit validity extension	90
5.	rejected supplementary urban permit requests	67
6.	sanction: reconstruction of existing or demolished buildings	65
7.	business building	58
8.	legalization of building extension	49
9.	partial interventions (terrace coverings, balcony glazing, staircases, additions)	47
10.	change of use	43
11.	condominium	38
12.	temporary buildings	34
13.	legalization of building reconstruction	33
14.	legalization of partial interventions (terrace coverings, balcony glazing, staircases, additions)	32
15.	legalization of existing holiday house	30
16.	rejected urban permit requests	21
17.	urban permit validity extension	19
18.	others (advertisement panels; lightning etc.)	16
19.	legalization of attic reconstruction	11
20.	urban furniture (fountain, monument)	6
21.	religious building	6
22.	industrial building	5
23.	attic reconstruction	5
24.	sub terrain garage	3
25.	holiday house	3
26.	auxiliary building	1
27.	addition of common space in condominium housing	1
	Total number of requests in the examined period in 2008	1.515

(Institute for Canton Planning, Pelja-Tabori, own presentation)

There is not a significant difference between the two examined periods when comparing the most represented typologies, yet there is a difference in the number of requests. There is also a significant decrease in the number of requests for legalization. The reason is the fact that a new Decision on Legalization has not been adopted yet, the economic crisis, and the new Spatial Planning Law (2017). Requests for the construction of a single house and for infrastructure have been significantly increased. All the other typologies have decreased. A high number of requests for validity extension in 2008 indicate that a one-year validity deadline of urban permits and supplementary urban permits is not long enough. A legislative prescription of a one-year deadline for applying building permits after obtaining an urban permit resulted in most applicants giving up further building permit procedures.

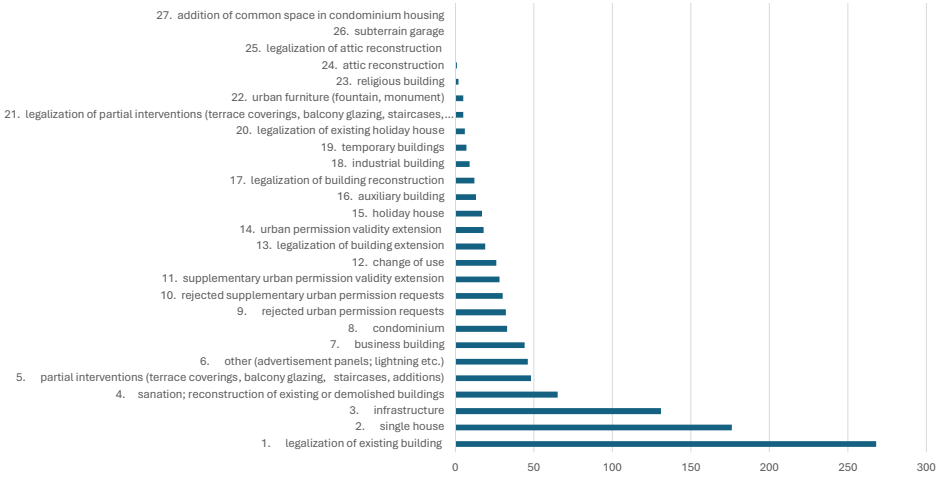


Figure 47 Representation of the diverse typologies in the total number of submitted requests for urban permits in the examined period June–December 2019 (*Institute for Canton Planning, Pelja-Tabori, own presentation)*

Table 45 Classification of requests for urban permits according to the number in 2019

Type of request		Number
1.	legalization of existing building	268
2.	single house	176
3.	infrastructure	131
4.	sanction: reconstruction of existing or demolished buildings	65
5.	partial interventions (terrace coverings, balcony glazing, staircases, additions)	48
6.	others (advertisement panels; lightning etc.)	46
7.	business building	44
8.	condominium	33
9.	rejected urban permit requests	32
10.	rejected supplementary urban permit requests	30
11.	supplementary urban permit validity extension	28
12.	change of use	26
13.	legalization of building extension	19
14.	urban permit validity extension	18
15.	holiday house	17
16.	auxiliary building	13
17.	legalization of building reconstruction	12
18.	industrial building	9
19.	temporary buildings	7
20.	legalization of existing holiday house	6
21.	legalization of partial interventions (terrace coverings, balcony glazing, staircases, additions)	5
22.	urban furniture (fountain, monument)	5
23.	religious building	2

Type of request		Number
24.	attic reconstruction	1
25.	legalization of attic reconstruction	0
26.	sub terrain garage	0
27.	addition of common space in condominium housing	0
	Total number of requests in the examined period in 2019	1.041

(Institute for Canton Planning, Pelja-Tabori, own presentation)

Spatial allocation of requests for urban permits and requests for building permits

Now, we shall overview the analyzed data on the GIS map of the catchment area of the SC. We may conclude that the spatial allocation of the submitted requests for urban and building permits is the most significant in the urban core territory of the SC in the first- and second-degree building regimes. A considerable number of requests in the third-degree and fourth-degree building regimes are present in municipalities beyond the urban territory, i.e., Trnovo Municipality, because of its touristic potential, and Municipality Ilijaš (Figures 48 and 49).

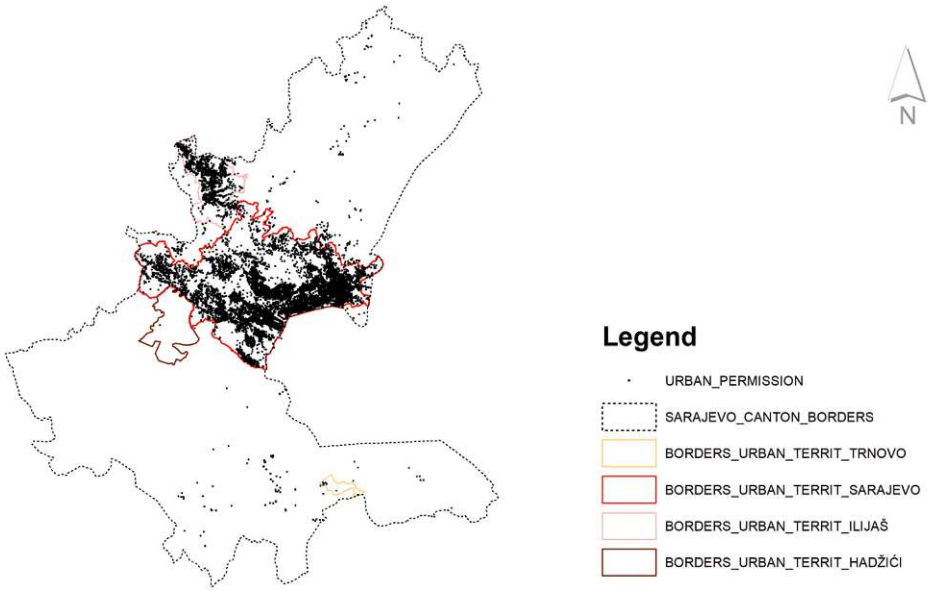


Figure 48 Number of requests for urban permits – 31,971 in the timeframe 2008–2020 on 15/07/2020 in the Sarajevo Canton and their spatial distribution *(Institute for Canton Planning)*

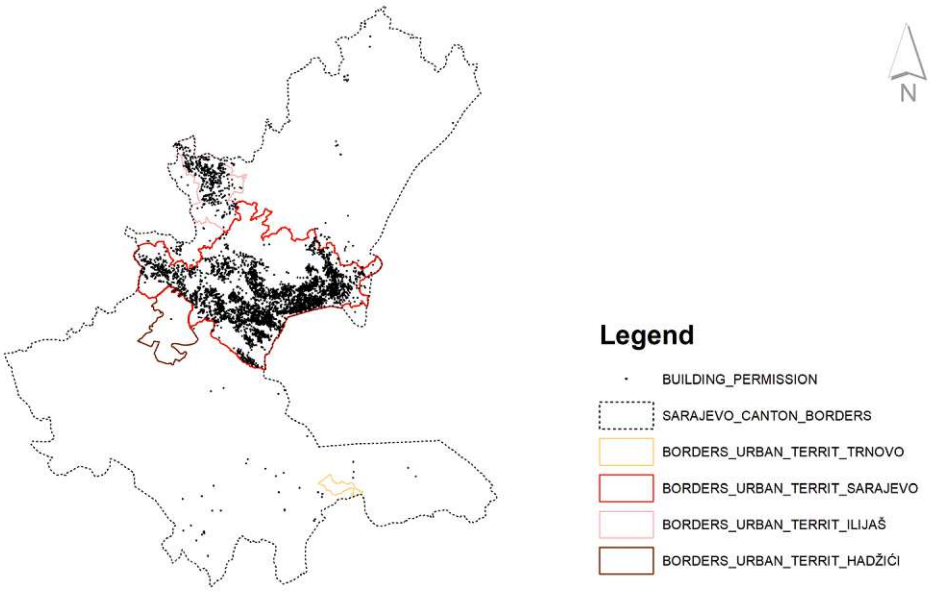


Figure 49 Number of requests for building permits – 10,649 in the timeframe 2008–2020 on 15/07/2020 in the Sarajevo Canton and their spatial distribution *(Institute for Canton Planning)*

Analysis of requests for professional opinions and their spatial allocation

Another factor, as mentioned before, which affects urban and building permit procedures, is the number of issued professional opinions. In the case of a building location in an area that is not covered with detailed planning documentation, the law obliges local government-level institutions to apply for a professional opinion of the Institute for Canton Planning. If the location is in protected areas of natural and cultural heritage, the law obliges to apply for a professional opinion of the Cantonal Institute for protection of the Cultural, Historical, and Natural Heritage of Sarajevo or other institutions responsible for the protection of cultural and natural heritage.

Professional opinions, according to the Spatial Planning Law 2017 (Section §55.4), include urban and technical conditions for building, documentation of a location, and, for larger buildings, conditions for initiating a creation of development plans. The number of issued professional opinions in the period 2006–2020 for all nine municipalities is 18,150. It indicates a max. of 48 submitted requests for professional opinions per day. Sites or localities with significantly more issued professional opinions are sites within the borders of the urban core area of Sarajevo (municipalities Stari Grad, Centar, Novo Sarajevo, Novi Grad, Ilidža, and Vogošća), urban core area of Hadžići, urban core area of Ilijaš, and urban core area of Trnovo municipality (Figure 50).

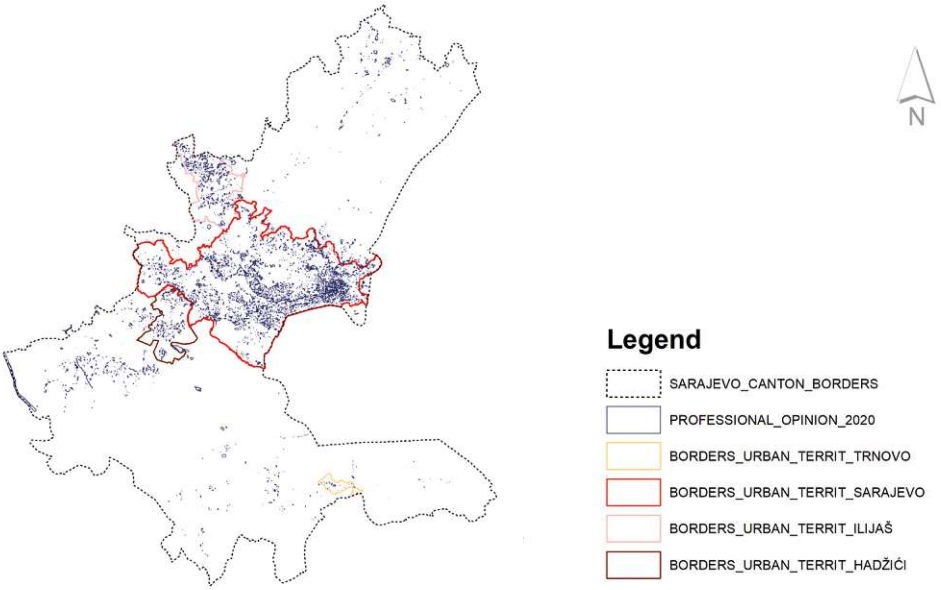


Figure 50 Number of professional opinions – 18,150 issued in the period 2006–2019 on 15/07/2020 and their spatial distribution *(Institute for Canton Planning)*

The reasons for significantly more issued professional opinions in the urban core areas of Sarajevo, Ilijaš, Hadžići, and Trnovo are coverage with various levels of spatial and urban planning documentation, such as spatial, land-use, and regulatory plans and urban projects, because professional opinions are requested when there is a need for additional explanation of zoning plans or when development plans, such as regulatory plans or urban projects, do not exist. The enormous number of requests for professional opinions may be an indicator of the ambiguity of urban permit procedures, weakness of planning implementation demonstrated in the fact that the canton territory is not fully covered with development plans, and finally the absence of a building code.

Analysis of requests for professional opinion typologies

The analysis of issued professional opinions in the SC in the time frame 2006–2020 identified all categories of professional opinions, with the number of issued acts per year in the examined timeframe (Figure 51). The examined categories are presented as follows:

- approved requests for professional opinions
- conditioned requests for professional opinions
- requests for professional opinion with a demanded addendum
- requests for professional opinion with requested plan correction

- requests for professional opinion with the requested parcellation plan
- requests for professional opinion with requested plan amendments
- rejected requests for professional opinions.

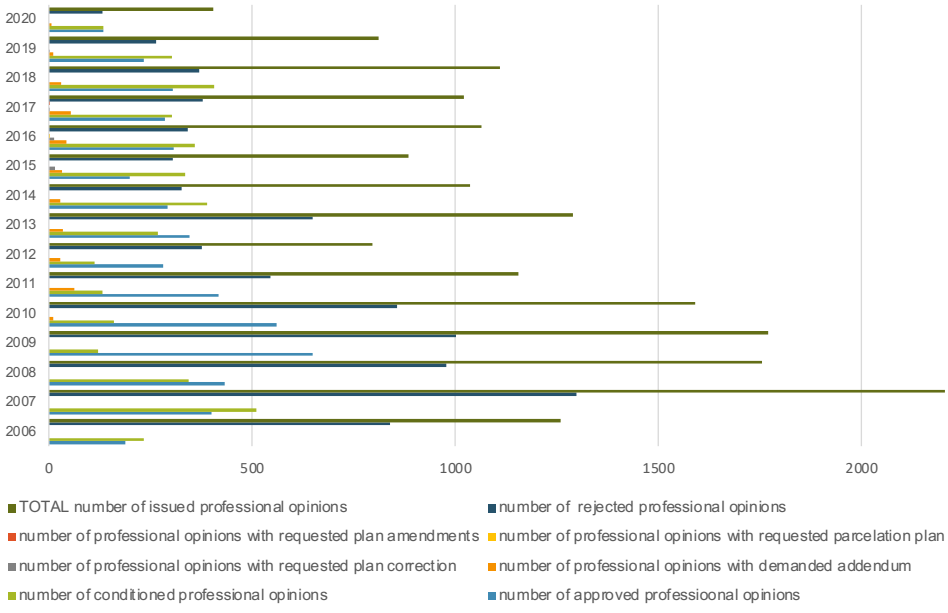


Figure 51 Analysis of share of issued professional opinions in Sarajevo Canton in the timeframe 2006–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

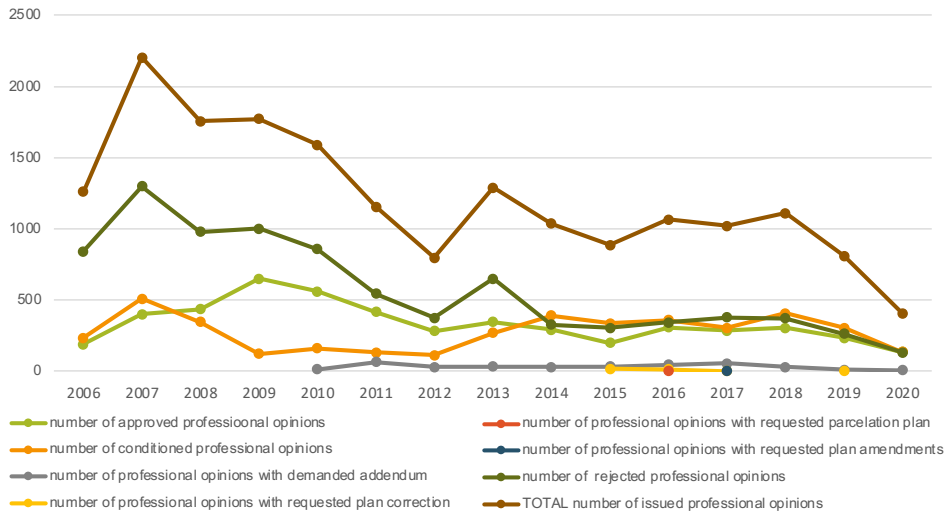


Figure 52 Decrease in issued professional opinions in Sarajevo Canton in the timeframe 2006–2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

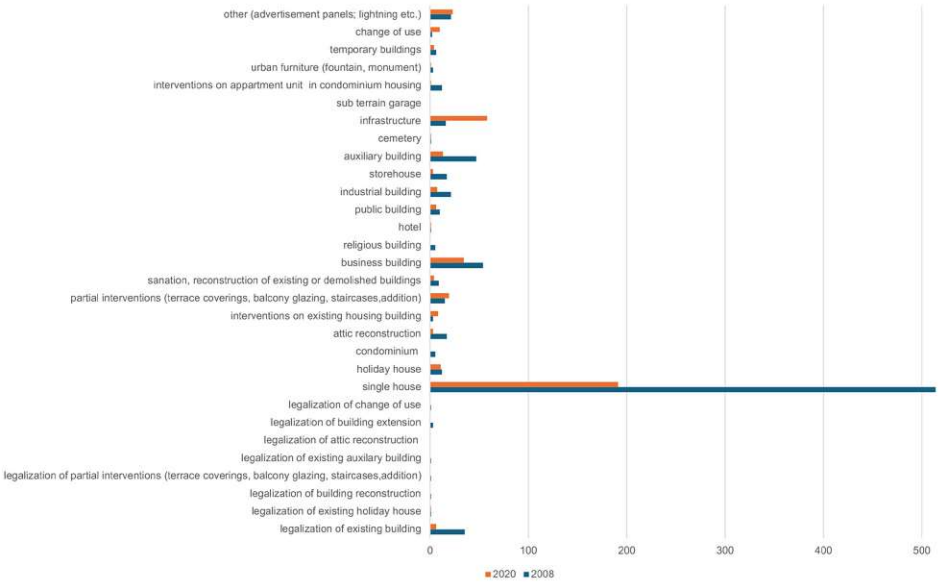


Figure 53 Representation of the diverse typologies of the submitted requests for professional opinion in the examined period June–December 2008 and June–December 2020 *(Institute for Canton Planning, Pelja-Tabori, own presentation)*

The analysis indicates the highest number of conditioned requests for professional opinion in the year 2007 and the slow decrease after the year 2009 until 2012 when the number increases again, which might be associated with the Decision on Legalization. Requests for professional opinions with a demanded addendum can be followed from the year 2010 and afterward. There were only few requests for professional opinions with requested plan correction in the period 2015–2017 and only a few numbers of requests for professional opinions with the requested parcellation plan in 2016 and requests for professional opinion with requested plan amendments in 2017. There is a very significant number of rejected requests for professional opinions in the year 2007 and a continuous decrease after this year, except for the year 2013. The analysis on issued professional opinions in the SC in 2006–2020 indicates a peak in the number of requests in 2007 and a slow decrease in the period after (Figure 52). Hence, a drop-down in the number of requests for professional opinion is linked to the Decision of Legalization, which destabilized the Spatial Planning Law and the SC Spatial Plan Amendments (2017) enlarging the area of the building land compared to the area of the building land defined in the SC Spatial Plan for the period 2003–2023 (Službene novine Kantona Sarajevo, 2006) (Figure 52). All submitted requests were classified in 28 typologies, furtherly classified in 10 typologies for supplementary urban permit (legalization) and 18 for urban permit proper (Figure 53). The timeframe for the analysis is June–December 2008 and June–December 2020. In the peri-

od June–December 2008, the most represented typology of requests for professional opinions ordered by the number of requests is the construction of a single house, which is as expected because it is the dominant building typology in the SC (Table 46). Far less represented typologies are the business buildings and the auxiliary building and only then the legalization of existing buildings.

Table 46 Classification of requests for professional opinion according to the number in 2008

Type of request		Number
1.	single house	514
2.	business building	54
3.	auxiliary building	47
4.	legalization of existing building	35
5.	industrial building	21
6.	others (advertisement panels; lightning)	21
7.	storehouse	17
8.	attic reconstruction	17
9.	infrastructure	16
10.	partial interventions (terrace coverings, balcony glazing, staircases, additions)	15
11.	holiday house	12
12.	interventions on apartment units in condominium housing	12
13.	public building	10
14.	sanction: reconstruction of existing or demolished buildings	9
15.	temporary buildings	6
16.	religious building	5
17.	condominium	5
18.	legalization of building extension	3
19.	urban furniture (fountain, monument)	3
20.	interventions on existing housing building	3
21.	change of use	2
22.	cemetery	1
23.	hotel	1
24.	legalization of existing holiday house	1
25.	legalization of building reconstruction	1
26.	legalization of partial interventions (terrace coverings, balcony glazing, staircases, additions)	1
27.	legalization of existing auxiliary building	1
28.	legalization of change of use	1

(Institute for Canton Planning, Pelja-Tabori, own presentation)

Hence, rules and regulations are not clear considering the above-mentioned typologies, which is the main reason for demanding a professional opinion. The analysis of requests for professional opinions in January–July 2020 does not differ from the examined period of 2008 when considering the most represented

typology, i.e., construction of a single house, albeit it differs with the second most represented typology, i.e., the infrastructure, coinciding with the analysis of requests for urban permit typologies in the examined period (Table 47).

Table 47 Classification of requests for professional opinions according to the number in 2020

Type of request		Number
1.	single house	191
2.	infrastructure	58
3.	business building	34
4.	others (e.g., advertisement panels and lightning)	23
5.	partial interventions (terrace coverings, balcony glazing, staircases, additions)	19
6.	auxiliary building	13
7.	holiday house	11
8.	change of use	10
9.	interventions in existing housing building	8
10.	industrial building	7
11.	legalization of existing building	6
12.	public building	6
13.	temporary buildings	4
14.	sanction; reconstruction of existing or demolished buildings	4
15.	attic reconstruction	3
16.	storehouse	3
17.	urban furniture (fountain, monument)	1
18.	interventions on apartment unit in condominium housing	1
19.	cemetery	1
20.	hotel	1
21.	legalization of existing holiday house	1

(Institute for Canton Planning, Pelja-Tabori, own presentation)

Analysis of administrative appeals

In 2018, there were 933 cases of administrative appeals, of which 409 cases were transferred from 2017 and 524 new cases were delivered to the Cantonal Ministry for Spatial Planning, Building, and Environmental Protection (Vlada Kantona Sarajevo, 2018). In 2019, there were 751 cases of administrative appeals, of which 365 cases were transferred from 2018 and 386 new cases were delivered to the Cantonal Ministry for Spatial Planning, Building, and Environmental Protection (Vlada Kantona Sarajevo, 2019). The number of complaints initiated by the stakeholders and based on violations of the building permit procedure indicate that there is a need for ordering a building permit procedure in a more efficient way, potentially by a new building code document.

Analysis of the economic indicators of the building permit procedure

If we proceed from the spatial analysis to the economic indicators of the building permit procedure in the SC, we are introduced to the issue of rent. The Federation of the BiH Law on Building Land (Službene novine Federacije BiH, 2003) defines rent rates. The rent rate per m² of the usable building surface is defined by a percentage of a final average building price (500–700 €) as follows:

- 6% in the first zone (30–42 € per m²)
- 5% in the second zone (25–35 € per m²)
- 4% in the third zone (20–28 € per m²)
- 3% in the fourth zone (15–21 € per m²)
- 2% in the fifth zone (10–14 € per m²)
- 1% in the sixth zone (5–7 € per m²).

Applicants for supplementary urban and building permits are exempted from development costs (these costs are being covered by the Cantonal Ministry). If we apply 0 € development costs for applicants for supplementary building permit to the equation of the index of non-restrictiveness of a building régime and full amount of development costs:

$$BR_I = \sum_{k=1}^{4} \mathrm{Cj}$$

The index of non-restrictiveness of a building régime or absence of a building code document may be correlated with the transfers of the actual development costs for supplementary building permits to the society instead to an individual builder. In the examined period of 2019, there was 26% of requests for supplementary urban permits of all the submitted requests for urban permits. Hence, the society is taking an enormous burden on itself, and the spatial planning system might be considered unsustainable. If we take an average amount of development costs (1,500 €) per average size of a single house (150 m²) and we take an examined period in 2019 (half a year) in which there were 311 legalizations of single housing buildings, we shall obtain almost 1,000,000 € per year of development costs for supplementary building permits, which are government or society funded. Knowing the fact that the society does not have that money, neighborhoods in the SC are left without adequate communal and traffic infrastructure and public buildings, among others. In other words, the absence of a building code affects the quality of urban life of the SC citizens.

Finally, the outputs of quantitative procedural land-use planning implementation methodological research have strengthened the outcomes of the qualitative pro-

cedural land-use planning implementation research, indicating the following characteristics of the building permit procedure in the SC:

- The urban permit procedure is far more significant than building permit procedures, as it is less expensive and mandatory as a first step in the legalization process.
- Only 1.5% of applicants for an urban permits finish the procedure and obtain a building control permit.
- The enormous number of submitted requests for professional opinion indicates a high interest to construct in areas not covered by development plans.
- Frequent changes in plans indicate a low extension of land-use implementation, or in other words land-use implementation does not work well. The analysis did not cover the reasons for these changes, which would certainly identify a kind of a pressure on a planning process.
- A high number of complaints initiated by the stakeholders and based on violations of the building permit procedures indicate that there is a need for additional ordering of a building permit procedure in a more efficient way.
- Losses in the collection of land development fee indicate non-restrictive systems and evident absence of planning implementation mechanisms, measures, and coding instruments.
- In the absence of coding instruments, planning instruments are weakened, therefore consequently creating land and property value that is jeopardized and obstructed.

4.2.3 Institutional Land-use Planning Implementation Outcomes

The research entailed three case studies: three land-use planning and implementation agencies as stakeholders involved in the building permit procedure:

- Institute for Canton Planning
- Canton Sarajevo Development Institute
- Cantonal Institution for the Protection of Cultural, Historical, and Natural Heritage.

Based on the methodology used in the study conducted by researchers Calbick, Day, and Gunton (Calbick et al., 2003) for the three case studies, we passed the practice register (Table 48) in the form of a check–rank–evaluate questionnaire to selected program personnel regarding their agency's implementation practices. After the completed questionnaires were returned, follow-up interviews provided background information for context and increased understanding of responses.

The study defines implementation as "… the act of using concrete measures to put something into practical effect. Hence, in this context, implementation practices are simply the set of concrete and measurable steps a program may use to implement its respective land-use plans" (Calbick et al., 2003, p. 78). The outputs of this study are three priority sets of implementation practices. The researchers clearly stated that prioritization does not mean that certain practices are more important than others. The important output is that in all five case studies of all 25 selected practices, on average 86% are implemented. When discussing the priority practices, this book should emphasize the following findings of the respective study:

(i) Legislated mandate: A comprehensive legislative mandate that provides clear authority and accountability for the planning agency is an essential feature of a successful implementation framework.

(ii) Administrative rules (regulations and permits): Prescribing a code of conduct should be an essential component for implementing any land-use policy.

(iii) Development of guidelines: Similar with administrative rules, this practice is also essential to implementing land-use policies.

(iv) Cooperative/collaborative planning process: Agencies charged with implementing land-use policies should be provided with an ongoing cooperative and collaborative planning capability.

By designing new regimes for implementing land-use plans around these practices, plans may be implemented quickly with less effort, thus saving resources. Moreover, such a framework could be used to evaluate existing land-use implementation efforts, exposing possible shortcomings (Calbick et al., 2003, pp. 78–82).

Table 48 Implementation praxis register

Implementation Practice	Definition
Legislated Mandate	Empowering statute contains a clear description of authority and responsibilities
Political Oversight and Involvement	Elected representatives engage in issue identification and problem-solving activities either through membership on the governing board or through a formal legislated review mechanism
Administrative Rules (Regulations & Permits)	The prescribed code of conduct designed to control, or govern, behavior
Enforcement Penalties	The empowering statute contains a framework for enforcement of compliance and penalties for non-compliance
Prescribed Legal Support	Mechanism fixed in statute giving the program access to legal support

Implementation Practice	Definition
Development of Guidelines	Written material that leads stakeholders through a desired or required process; fol-lowing the guidelines should result in substantive adherence to applicable statutes and regulations
Adequate Funding	Enough monies allocated to fulfil either a formal or informal mandate
Providing Project Financing	Program allocation of monies specifically for supporting external projects that further the agency's goals
Cooperative/ Collaborative Planning Process	Active engagement of all interested and affected stakeholders providing them open and meaningful input into the planning process and outcome
Alternative Dispute Resolution	A process for resolving conflicts that involves some kind of negotiation aimed towards consensus and does not use traditional court proceedings
Public Educational & Informational Programs	A specific, structured program aimed at disseminating information to increase stake-holders. knowledge and understanding
Public/Peer Review	A conscious decision by the agency to pursue public accountability by incorporating public and scientific scrutiny of planning and implementation
Public Advisory Bodies	Agencies offering non-nonbinding directions and recommendations staffed by public representatives
Technical Advisory Bodies	Agencies offering nonbinding directions and recommendations staffed by scientific or technical professionals' representatives
Providing Technical Assistance	A structured program for disseminating technical information through contact with agency staff, including process design
Multijurisdictional Cooperation	Processes that involve more than one jurisdiction and that transgress political bound-aries such as county, regional district, state, province, or country borders
Ecosystem-Based Management	Considers ecological, economic, and social factors in determining how to best main-tain and enhance environmental quality
Adaptive Management Techniques	Monitoring and research conducted to adjust future implementation as more is learnt about the systems and how they respond to management efforts
Indicators/Performance Measures	A quantitative value that attempts to gauge the degree of attainment of an objective or target
Cumulative Effects Management	Changes in the environment caused by the interaction of natural ecosystem process-es with the effects of two or more management practices
Conduct Management Activities at Watershed Level	Applying a watershed-scale perspective to planning implementation of program elements
Special Defined-Management Zones or Areas	Demarcated areas and zones where development and management activities are either prescribed or prohibited
GIS for Management/ Planning	Utilizing the information contained in a system to better understand the spatial aspects of an area

Implementation Practice	Definition
Resource Inventories	Detailed list of the supply of resources in an area: resources can include intangibles aesthetic values
State of the Environment/Sustainability Reporting	Periodic documentation of the state of nature within a program's jurisdiction

(Calbick K.S. et al., 2003.)

Based on the conducted Canadian study, the performance criterion of the land-use implementation register with 24 selected practices was used for the evaluation of the program performance of the three selected SC planning implementation institutions: Institute for Canton Planning, Canton Sarajevo Development Institute, and Cantonal Institution for the Protection of Cultural, Historical, and Natural Heritage. The outputs show that only 5 in case of the Canton Sarajevo Development Institute and 9 in the case of the Institute for Canton Planning out of the 24 defined practices are implemented in the above-mentioned SC institutions. Cantonal Institution for the Protection of Cultural, Historical, and Natural Heritage answers could not be evaluated in a logical methodology. Hence, they could not be relevant for this research, yet might be used in some further research (Table 49).

The methodological approach outcomes shall be concluded with the comments collected from the participants. The implementation practice "Legislated mandate" provides a clear authority for the evaluated institutions. The Canton Sarajevo Development Institute Internal Code is from 2013 and does not follow accurate laws and bylaws. Although the institutions have a legislated mandate for administrative rules (regulations and permits), there is no clear code of conduct prescribed by the institutions as an essential component for implementing land-use policy.

The implementation practice "Political oversight and involvement" are evaluated as

> not significant in the case of the Canton Sarajevo Development Institute. The program for 2020 was adopted in late July 2020 by the cantonal government, yet not published in the SC Gazette, which makes the implementation of the projects planned in the program impossible (less than 6 months). (Delphi method participant)

The implementation practice "Prescribed legal support" is characterised as "insufficient in the case of the Canton Sarajevo Development Institute. Administrative law is unclear and unprecise and is used to reject business proposals provided by the cantonal government that represent public interest" Delphi method participant).

The implementation practice “Providing project financing” is judged as follows:

> Lack of good organization in the Canton Sarajevo Development Institute is disabling project implementation from the beginning till the end of the process. Therefore, numerous projects are being lost, as well as finances provided for certain projects financed by the cantonal budget. (Delphi method participant)

The development of guidelines, as a crucial practice for implementing sustainable development land-use policies, and cooperative/collaborative planning process do not exist, or specifically, there is a possibility for improvement in the two segments.

The performance criterion established in the Canadian study has not been reached in the examined case study institutions, albeit it may serve as a guideline to the future vision for the development of practices in these important institutions.

Table 49 Outcomes of the institutional land-use implementation practices in the Sarajevo Canton

Implementation Practice	Institute for Canton Planning	Canton Sarajevo Development Institute	Cantonal Institution for the Protection of Heritage*
Legislated Mandate	1	1	-
Political Oversight and Involvement	X	3	-
Administrative Rules (Regulations & Permits)	2	X	-
Enforcement Penalties	3	X	
Prescribed Legal Support	4	X	-
Development of Guidelines	5	X	-
Adequate Funding	X	2	-
Providing Project Financing	X	X	-
Cooperative/Collaborative Planning Process	8	X	-
Alternative Dispute Resolution	X	X	-
Public Educational & Informational Programs	X	X	
Public/Peer Review	6	X	-
Public Advisory Bodies	X	X	-
Technical Advisory Bodies	X	X	-
Providing Technical Assistance	X	X	-
Multijurisdictional Cooperation	X	X	-
Ecosystem-Based Management	X	4	-
Adaptive Management Techniques	X	X	-

Implementation Practice	Institute for Canton Planning	Canton Sarajevo Development Institute	Cantonal Institution for the Protection of Heritage*
Indicators/Performance Measures	X	X	-
Cumulative Effects Management	X	5	-
Conduct Management Activities at Watershed Level	X	X	-
Special Defined-Management Zones or Areas	7	X	-
GIS for Management/Planning	9	X	-
Resource Inventories	X	X	-
State of the Environment/ Sustainability Reporting	X	X	-

**Cantonal Institution for the Protection of Cultural, Historical, and Natural Heritage*

4.3 Outcomes of the Delphi Methodology

The Delphi method is conceived as a scientific method by which we may predict certain phenomena. It is implemented in applicable and developmental research. The time framework for this method was August–September 2020.

> The 'Delphi' methodology was developed in the 1950s as a means by which a diversity of expertise could effectively be brought to bear on complex, multidimensional, or otherwise particularly difficult problems. The technique has been widely utilized since that time in a broad range of planning, public policy, and business applications. (Miller, 1993, pp. 191–212)

The Delphi methodology consists of iteration rounds. Expert interviews are typically organized in several rounds, and between them, the Delphi manager provides summaries of expert communication and feedback. The interviews are always conducted anonymously. The advantages of the method include "brainstorming and developing a wide range of ideas and perspectives on an issue, eliciting many good quotes from the participants" (Miller, 1993, p. 198).

The disadvantages of the method include ethical discussions about the anonymity of experts that "may reduce expert accountability, resulting in rushed and therefore less valuable insights from the expert panel" (Fefer et al., 2016). Another disadvantage is the time commitment to fulfil the requirements of participation in all rounds of the method. It can be particularly problematic to form small sample sizes of Delphi studies (Fefer et al., 2016, p. 4). Based on numerous studies

on the Delphi method, the key elements for performing a quality Delphi survey are as follows:

- Composition of the expert group in terms of diversity
- Size of a group: De Loe recommends 10–50 as an optimal number of participants in a Delphi survey to produce valid results (De Loe, 1995, pp. 53–68). Meanwhile, upon Miller's experience, up to 30 responses are an optimum for a Delphi group (Miller, 1993, pp. 198–212)
- Questionnaire needs to be designed for each round.

Several authors pointed that the Delphi method can be coordinated with some other methods, such as SWOT analysis, and the results of the two methods may be compared. Myllylä developed the feedback Delphi concept. This kind of final expert evaluation probably increases the reliability of results and scientific quality and validity (Myllylä & Kaivo-oja, 2015).

Our research is considered applicable and developmental research because it questions the future introduction of a building code document in the SC spatial and urban planning legislation. It is crucial for the research to have the outcomes of this method. The method implies an organized and systematic panel of experts' predictions. The expert team has been formed from professionals, recognized as spatial and urban planning policy creators or implementers of SC spatial planning, building legislation, and experts from diverse scientific fields covering spatial and land-use planning and management. The method was combined with the empirical–analytical method as feedback. The Delphi concept was used to reach a consensus for identifying the weaknesses of a building permit procedure and the necessity for developing a model of the building code document for the SC, with relevant experts in the field of spatial and urban planning. The method is organized as follows:

- Formulating the questionnaire
- Preparing the information for the interrogees
- Forming the expert team and delivering the questionnaire to the experts by mail
- Activities of the first iteration –Delphi Round I
- Based on the results of Round I, formulating the questionnaire for the eventual second iteration –Delphi Round II
- Activities of the second iteration –Delphi Round II
- Results of the conducted feedback of the Delphi method.

The Delphi methodology was used as a qualitative method to examine procedural land-use planning implementation. In the case of the building procedure implementation in the SC study, the Delphi component complemented the quantitative analysis in a way that it is important and useful for policy planning purposes. The

Delphi methodology serves to guide the decision-making process of local developers when the building code creation procedure is considered.

The first step of this method was to identify the sustainable development fields (e.g., environment, society, and economy) of expert participants. Once these categories were established, it was not difficult to identify up to three experienced experts in every field. The team was composed of various practitioners in spatial planning implementation. Eight out of 10 experts accepted an invitation to participate in the study. They were communicated by phone and by mail and explained shortly of the purpose of the study. Three participants have more than 20 years of experience, four participants have more than 30 years of experience, and one participant has 40 years of experience in planning and planning implementation.

Initially, all participants were provided with a mail letter explaining the brief description of the Delphi methodology, the research subject, working hypothesis, and assignment and role of an expert in this research. The mails were sent from August 4 to 6, 2020. The questionnaire in a PDF form was sent to the expert participants. The questionnaire consisted of the three introductory questions about age, gender, and academic degree of the participants. The introductory questions were followed by three sets of questions about the building permit procedure in the SC: 12 questions considering the environment, six questions about the society, and five questions about the economy (Table 50).

Table 50 Evaluation questions on the building permit procedure in the Sarajevo Canton

Environment	
1	How would you evaluate the spatial planning system sustainability level in the Sarajevo Canton?
2	How would you evaluate the building permit procedure efficiency in the Sarajevo Canton?
3	To which extent is the building permit procedure in the Sarajevo Canton a function of the Spatial Planning Law (2017)?
4	How would you evaluate the idea to introduce a building code document to the Sarajevo Canton legislation?
5	To which extent is building permit procedure in compliance with regulations, norms, and standards in spatial planning and architecture in BiH?
6	How do you evaluate the restrictiveness of the prescribed conditions for obtaining a building permit?
7	How satisfied are investors with the building permit procedure in the Sarajevo Canton?
8	How satisfied are Sarajevo Canton citizens with the building permit procedure in the Sarajevo Canton?
9	How satisfied are civil servants with the building permit procedure in the Sarajevo Canton?
10	How satisfied are professionals (engineers, spatial planners) with the building permit procedure in the Sarajevo Canton?

11	To which extent there is a need for additional regulations considering building technology, building standards, and technical guidelines as part of a building permit conditions?
12	How would you evaluate the state of the development of the built environment in the Sarajevo Canton?
Society	
13	To which extent social categories of the Sarajevo Canton population are the majority of applicants for supplementary urban permits?
14	Which percentage of applicants for urban permits proceed for obtaining building permits?
15	Which percentage of those who apply for urban permits apply for a building permit within prescribed by the law one year?
16	To which extent is true the statement that the economically potent population lives in better equipped with communal and traffic infrastructure neighborhoods?
17	To which extent is the true statement that the building permit procedure is transparent and equal for all citizens and investors?
18	To which extent should citizens be more involved in building permit procedures, in terms of protecting their rights?
Economy	
19	Could actual development costs of plans (1%–6%) cover the actual costs of public investments, such as communal infrastructure?
20	Should there be more public investments in the Sarajevo Canton (communal and transport infrastructure, public transport, social infrastructure – public buildings?
21	Should the citizens be the majority “investors” of all infrastructure works in the Sarajevo Canton?
22	Would you agree with the proposal of higher development costs of plans (20%)?
23	Do you agree that the quality of urban life should be higher in the Sarajevo Canton?

All the questions were provided with multiple-choice answers. The experts responded with filled questionnaires on August 9, 2020 and September 22, 2020.

Table 51 The range of possible responses

Range	Environment	Society	Economy
1	Poor	≤25%	Not applicable
2	Unsatisfactory	≤50%	Strongly disagree
3	No opinion, no comment	No opinion, no comment	No opinion, no comment
4	Very satisfactory	≤75%	Agree
5	Outstanding	≤100%	Strongly agree

They reached a consensus at the first iteration about the idea of the introduction of the new cantonal building code and additional regulations considering building technology, building standards, and technical guidelines as a part of a building

permit conditions. Therefore, there was no necessity for the second iteration. The outcome of the analysis of all 23 questions is as follows:

Environment

1. The experts evaluated the spatial planning system sustainability level as poor or unsatisfactory.
2. The experts evaluated the building permit procedure efficiency in the SC as poor or unsatisfactory.
3. The experts considered a building permit procedure in the SC function of the spatial planning law with poor to unsatisfactory levels.
4. The experts evaluated the idea to introduce a building code document to SC legislation with very satisfactory to outstanding.
5. The experts thought that building permits follow regulations, norms, and standards in spatial planning and architecture in BiH at the unsatisfactory level.
6. The experts evaluated the restrictiveness of prescribed conditions for obtaining a building permit at a poor to unsatisfactory level.
7. The experts considered investors' dissatisfaction with the building permit procedure or have no opinion on the topic.
8. The experts considered Canton Sarajevo citizens' dissatisfaction with the building permit procedure.
9. The experts considered civil servants unsatisfied with the building permit procedures.
10. The experts considered technical science experts' (e.g., engineers and spatial planners) dissatisfaction with building permit procedures.
11. The experts considered an initiative for additional regulations considering building technology, building standards, and technical guidelines as a part of a building permit procedure conditions as outstanding.
12. The experts considered the state of the development of the built environment in the SC as poor.

Society

13. The experts thought that the social categories of the SC population are the majority of applicants for supplementary urban permits, ≤75%.
14. The experts considered that ≤50% of applicants for urban permit proceed for obtaining a building permit.
15. The experts thought that ≤25% of those who apply for urban permits apply for a building permit within the legally prescribed period of one year.
16. The experts (≤75%) agreed with the statement that the economically potent population lives in better equipped neighborhoods (communal and traffic infrastructure).
17. The experts are divided between those who consider (≤25%) and those who consider (≤75%) the true statement that the building permit procedure is transparent and equal for all citizens and investors.

18. The experts are ≤75% positive that citizens should be more involved in building permit procedure, in terms of protecting their rights.

Economy

19. The experts are divided between those who strongly disagree, those who agree, and those who do not have an opinion on the question of whether the actual development costs of plans (1%–6%) cover the actual costs of public investments, such as communal infrastructure.
20. The experts have no opinion on the question of whether more public investments in the SC should be communal and transport infrastructure, public transport, social infrastructure, or public buildings.
21. The experts strongly agree that the citizens should be the majority "investors" of all infrastructure works in the SC.
22. The experts have no opinion on the proposal of higher development costs of plans (20%).
23. The experts strongly agree that the quality of urban life should be higher in the SC.

We shall conclude with the ideas and perspectives on an issue, eliciting good quotes from the participants.

Comments on the question #3 "To which extent is the building permit procedure in SC a function of the Spatial Planning Law (2017)?" and the question #5 "To which extent is the building permit procedure in compliance with regulations, norms, and standards in spatial planning and architecture in BiH?"

> I must admit that neither of the offered response options expresses my attitude considering the building permit procedure and the law. I have chosen the option "no opinion, no comment," although I do actually have an opinion and a comment. I believe that the building permit procedure should not be a function of the law, but the law should be a function of sustainable development, fulfilment of civil rights, efficient planning implementation (implying shorter, transparent, and professionally based procedure and justification of solutions, minimized costs, and establishment of a system of ordinary annuity). Laws, norms, and standards in Bosnia-Herzegovina are not critical and original solutions developed especially for SC and Bosnia-Herzegovina, but they are adopted and minimally adapted solutions to the Bosnian and Herzegovinian environments, from the societies that might have already significantly changed them, and their efficiency has not been analyzed beforehand. Moreover, legal provisions are not the only and the most important part of a system that provides planning implementation, building approval, and control. The most important in such complex systems is education, not only academic education but also lifelong learning of people who are participating in planning, the enactment of laws, deci-

sion-making, building permit procedures, supervision and inspection, and architectural design. Education is a major precondition for the enhancement of the spatial planning systems. Furthermore, individual responsibility should be exposed to public scrutiny and elevated to the highest level. Those who participate in the processes of changes in plans, architectural design, building permit procedure, supervision, and inspection should be protected from corruption and extortion, on one side with an adequate salary and on another side with high fines, including imprisonment, for unprofessional conduct. The third and particularly important guideline is raising awareness of each and every citizen about his or her responsibility in the planning process, regulation, and construction. To underline, when commenting on questions #3 and #5 from the questionnaire, I do not speak, on purpose, of the improper conduct of a civil servant, a planner, or an architect because it is possible to detect that many bad solutions are legal. I emphasize that neither a law nor a building permit procedure provide certainty that unprofessional conduct is necessarily illegal (not respecting building ratio, building distances, and building land development).

Comments on question #4 “How would you evaluate the idea to introduce a building code document to SC legislation?”

Concerning final comments regarding questions #3 and #5, the following question could be posed: What is unprofessional conduct? In that sense, I found an important introduction of the new building code, as a codex of professional conduct; however, its efficient implementation will not be assured until necessary systematic solutions are provided – good education and awareness of professionals and civil servant, and implementation of civil and criminal liability for unprofessional conduct. Building codes can be an important instrument that can provide precise standards for professional solutions, yet no act can be that precise to be implemented by unprofessional or insufficiently professional individuals.

Comments on question #6 “How do you evaluate the restrictiveness of prescribed conditions for obtaining a building permit?”

It is well known that the building permit procedure – time needed and the modality of issuing it – depends on how “important” an authoritative investor is and what kind of investment we speak of. Even though all investors do not share the same level of discontent because it is possible to “make a pressure” on public administration during procedure, it is important to emphasize that this is one of the reasons for evaluating building permit procedure as unsatisfactory. In general, a procedure that implies an urban permit and building permit procedures is a long and existing process for an investors. Since there are no SMART governance options, an investor is

> the one who needs to obtain all so-called "anticipating" approvals (e.g., water, sewage, and electricity) from various institutions and is responsible for eventual delays in the procedure, instead of communicating with one civil servant who provides all the needed information and permits. The process is expensive (it is a phase that is followed with expensive construction), and it is one of the reasons why a lower socioeconomic population avoids building a permit procedure. One of the possibilities to prevent further informal settlements is to reduce building permit costs, including the possibility of subventions. Another solution is introducing ordinary annuities for private property that would provide financing necessary preparation and regulation of building land, including construction of traffic and communal infrastructure, green spaces and parks, schools, and other social infrastructure.

Comments on question #9 "How satisfied are civil servants with the building permit procedure in the SC?" and question #10 "How satisfied are professionals (e.g., engineers and spatial planners) with the building permit procedure in SC?"

> I suppose that civil servants also are frustrated by long, inefficient, and very formal procedures, but they, very often, use legal provisions to make procedures even more complicated and longer, in order to minimize their individual responsibility for the outcome of the procedure. The lack of coherence and coordination between various public institutions at different government levels intensifies the frustration of public administration, investors, and citizens. However, while commenting the two questions, I would like to underline an indicative distinction between "civil servants or civil servants" and "professionals (e.g., engineers and spatial planners)" because civil servants should be professionals of the highest rank, with the most profound sense of responsibility and valued as such for the work they are doing.

Finally, the outcomes of the Delphi method (Table 52) indicate that experts are confirming the shortcomings in the building permit procedure and are positive about the idea of reintroducing a building code in the SC.

Table 52 Outcomes of the Delphi methodology

	Environment											
Q*	1	2	3	4	5	6	7	8	9	10	11	12
M	1.25	1.5	2	4.75	2	1.5	2.12	1.12	1.62	1.37	4.75	1.12
LCA	1	1	1		1	1	1	1	1	1	4	1
	Society											
Q*	13	14	15	16	17	18						
M	3.62	1.87	2.37	4.37	2.37	4.25						

LCA	3	1	1	4	1	2
	Economy					
Q*	19	20	21	22	23	
M	2.87	3	5	3.25	5	
LCA	2	1		1		

**Questions (Q): Twenty-three questions of the Delphi methodology questionnaire (environment, society, and economy)*

Core criteria set:

Median (M): Average expert response value

Lower core area (LCA): A prognosis value for which the number of experts whose prognosis is less than that value is equal to one quarter of all experts

Upper core area (UCA): A prognosis value for which the number of experts whose prognosis is larger than that value is equal to one quarter of all experts

4.4 Summary

Based on the research methodology of the combined comparative-historical method, empirical–analytical method, and the Delphi method, we have arrived at the outputs of the research.

The comparative-historical method outputs indicated that there is a strong dichotomy between planning and coding systems in Sarajevo. Coding was introduced in the late 19th century and has been applied until the 1940s, yet it was not accompanied by the proper planning system for the whole territory of the city. After the Second World War and during the socialist period, Sarajevo got its first GUP in the 1960s and spatial plan and land-use plans in the late 1980s but did not practice a coding system during this period. The contemporary SC does not have novelized land-use plans nor a construction law. Unlike the contemporary capital city and Federated State Vienna, and the capital city and Canton Zurich, Sarajevo does not have the continuity of a building code document as a function of a building permit procedure. In the SC, the building permit procedure is a function of the spatial planning law. The empirical–analytical methodological research outputs identified that the building permit procedure in the SC in the context of the SC Spatial Planning Law (2017) indicates major shortcomings, such as the existence of supplementary urban and building permit procedures (legalization), excluded from the law, high number of requests for professional opinion, as a part of the urban permit procedure, inconsistency of plans and frequent changes in plans, undefined public interest, and overlapping competencies of different governmental levels involved in the building permit procedure, defined by the law.

In the SC, every 66th applicant for an urban permit finishes the procedure or arrives to the building control permit (1.5%), or in other words, every third applicant

for the urban permit (33.3%) will proceed to the building permit and every 22nd applicant for the building permit (4.5%) will proceed to the building control permit. More than half of the requests in the evaluated process are those for supplementary procedure. Applicants for supplementary building permits are prevalently exempted from development costs (these costs should be covered by the Cantonal Ministry). Considering that continental European examples proved that planning and coding are instruments for creating land and property value, we may assume that annulling of the development costs in the building permit procedure in the SC is an indicator of weakened procedural land-use planning implementation in the absence of a building code.

The analysis of the spatial planning documentation in the period 1996–2020 proves that the disadvantages of the spatial planning system are produced and controlled by law and therefore can be enhanced by law.

The most frequent typology of request for urban permits in the SC is the request for legalization of existing buildings. It is followed by a request for the construction of a single house.

Alteration, renovation, and demolition are far less represented when considering the number of requests, but the conducted survey indicates that almost all typologies of requests for urban permits properly exist in the form of supplementary urban permits (legalization).

The supplementary procedure derogates the proper procedure and proves that it is possible to build without a building permit. The high number of submitted requests for professional opinions in the period 2006–2020 is an indicator of a weak building permit procedure and may be correlated with low coverage of the SC territory with development plans, frequent changes in plans, high number of requests for supplementary urban permit, and unclear rules and regulations in the spatial planning system implementation. The typology of requests for professional opinions indicates that the most represented typology is the request for the construction of a single house. The requests for professional opinion for the legalization of existing buildings (dominantly single house) are at the fourth place of the most represented typologies of requests for professional opinions. Therefore, special attention should be dedicated to this typology in the future building code, especially to the relation of street section parameters (street width, building height, roof slope, protrusions), defining and creating relation between public and private domain.

A high number of administrative appeals in cases of violations of the building permit procedure indicate that a future building code should provide higher protection for citizens and property rights.

The spatial representation of the concentration of requests for urban permits indicates that a correlation exists between urban territories defined by the Canton Sarajevo Spatial Plan and in particular by the SC Land-use Plans. Hence, the catchment area of the future SC building code should correspond with the zoning plan and its respective borders.

Institutional land-use planning implementation analysis of the three Sarajevo cantonal institutions indicates that only 5–9 praxis out of the 24 defined by the implementation praxis register according to the study conducted by the researchers K.S. Calbick, J.C. Day, and Thomas I. Gunton are practiced in those institutions. According to these practitioners, the priority practices are as follows: legislated mandate, administrative rules (regulations and permits), adequate funding, and political oversight and involvement. The indicators of institutional land-use planning implementation demonstrated that the examined institutions lack the following practices, which are crucial for the improvement of the planning implementation: development of guidelines, cooperative/collaborative planning process, alternative dispute resolution, public educational and provision of technical assistance information programs, public/peer review, public advisory bodies, technical advisory bodies, multijurisdictional cooperation, ecosystem-based management, adaptive management techniques, indicators/performance measures, cumulative effects management, GIS for management/planning, resource inventories, and state of the environment/sustainability reporting. There is a strong consensus among expert participants of the Delphi method conducted in this research on the idea of introducing a new building code in the SC and additional regulations considering building technology, building standards, and technical guidelines as a part of the building permit procedure.

The hypothetical framework verification through the research methodology proved that the absence of a building code in the SC for 80 years has affected the spatial planning system in all its segments, from spatial planning law to spatial planning documentation and institutional land-use planning implementation. Most importantly, it affected planning implementation through the weak building permit procedure in a manner that it became legal to build without building permits. Therefore, the spatial planning system in the SC may be qualified as unsustainable, and land-use implementation as weak, so they should be enhanced by a model for introducing the new building code. In the following section, we shall observe how the correlation between the respective indicators of the research analysis become the potential elements for creating a model for the future SC building code.

5 Proposed Model for Introducing the Building Code Document

The previous section was concluded by proving the null hypothesis of the research (i.e., it is advisable to reintroduce the building code document to SC spatial and urban planning legislation to enhance land-use management and land-use planning implementation). In this section, we shall try to presuppose the potential scenarios for introducing the new building code in the SC based on the research outcome description and interpretation.

5.1 Potential Scenarios for Introducing the New Sarajevo Canton Building Code

Acknowledging the indicators presented in the comparative-historical methodology outputs, we identified the correlation between sociopolitical and economy contexts that established and have continuity in practicing building code documents and those that interrupted its legal continuity and eradicated the law.

Verification of the research hypothetical framework through the factor of the change in sociopolitical and economy context of Bosnia-Herzegovina after the doom of Yugoslavia, not followed by the sectoral reforms of the spatial planning system, is crucial when proposing a model for the introduction of the new building code, distinguished in two potential scenarios.

In Scenario “A,” the building code for the SC shall be hypothetically placed in the existing inefficient spatial planning system, and in Scenario “B,” the introduction of a building code part of broader and essential changes in the spatial planning system in Bosnia-Herzegovina.

5.2 Scenario “A”

The comparative-historical analysis outputs indicated that the existing spatial and land-use planning system in the SC undertakes the urban acquis of the Socialist Federal Republic of Yugoslavia that has been mostly effective until the 1990s, especially for society-funded projects, on the state-owned land and investments designated for “all citizens” and funded by them in the form of self-contribution. The socialist state as the main investor and the executor of all public construction had the power and mechanisms of land-use planning implementation to mainly defend public interest. The question of private property regulation had not been considered a priority, so the problem of informal settlements had arisen. The building code has been eradicated from the spatial planning system.

The dramatic doom of Yugoslavia, the war, and the post-war transition from socialism to capitalism did not motivate competent governmental representatives, nor spatial and urban planners, for reflections about the solution for cumulated problems and the future of spatial planning system in Bosnia-Herzegovina and its capital Sarajevo, even though there was a legal basis for such activities:

> All laws, regulations, and judicial rules of procedure in effect within the territory of Bosnia-Herzegovina when the Constitution enters into force shall remain in effect if consistent with the Constitution, until otherwise is determined by a competent governmental body of Bosnia-Herzegovina. (UN, 1995)

Therefore, the common adoption of the socialist spatial and land-use planning system with no adaptation of such a system to the new sociopolitical and economy circumstances and European perspective of BiH and the SC led to a rather ineffective system, lacking thoughtful, tailored, and context-sensitive urban politics and implementation mechanisms, especially considering public and private law measures, safeguarding public and private interest.

The spatial planning system in Bosnia-Herzegovina is fragmented, with no coordination between the entities and district and no initiatives on the national level for such coordination. This is particularly problematic for divided or in-between cities, such as Sarajevo. Spatial planning legislation is being passed on the entity and cantonal levels. The spatial plan on the national level is still valid, even though adopted in 1980, albeit unimplemented for its obsolescence. The entity Republika Srpska has its spatial plan adopted in 2007 and amended in 2013. Land-use planning is prepared by municipalities and big cities, such as Banja Luka, which is, by definition, composed of more than two municipalities. The spatial plan and land-use plan of the Brčko District were adopted in 2007. The spatial development strategy of Brčko District is currently in the adoption procedure. The spatial plan of the Federation of Bosnia-Herzegovina has not been adopted, even though the procedure of drafting commenced in 2008. Ten cantons in the Federation of Bosnia-Herzegovina have their own laws on spatial planning, and all except the SCs also have construction laws. Land-use plans are prepared on the cantonal, district, and city/municipal levels. In Bosnia-Herzegovina, land-use planning implementation through the building permit procedure is based on binding zoning and development plans at different governmental levels, often not in compliance with one another neither in the vertical nor in horizontal organizational structure.

What does it mean to introduce the new SC building code in such a spatial planning system (Figure 54)? The existing spatial planning system lacks coordination between the entities in the planning processes between the SC and City of East Sarajevo and lacks building standards on the national level. Hence, the new building code would not have the ability to incorporate cross-entity planning and

national technical guidelines and building and design standards in the existing spatial planning system of BiH.

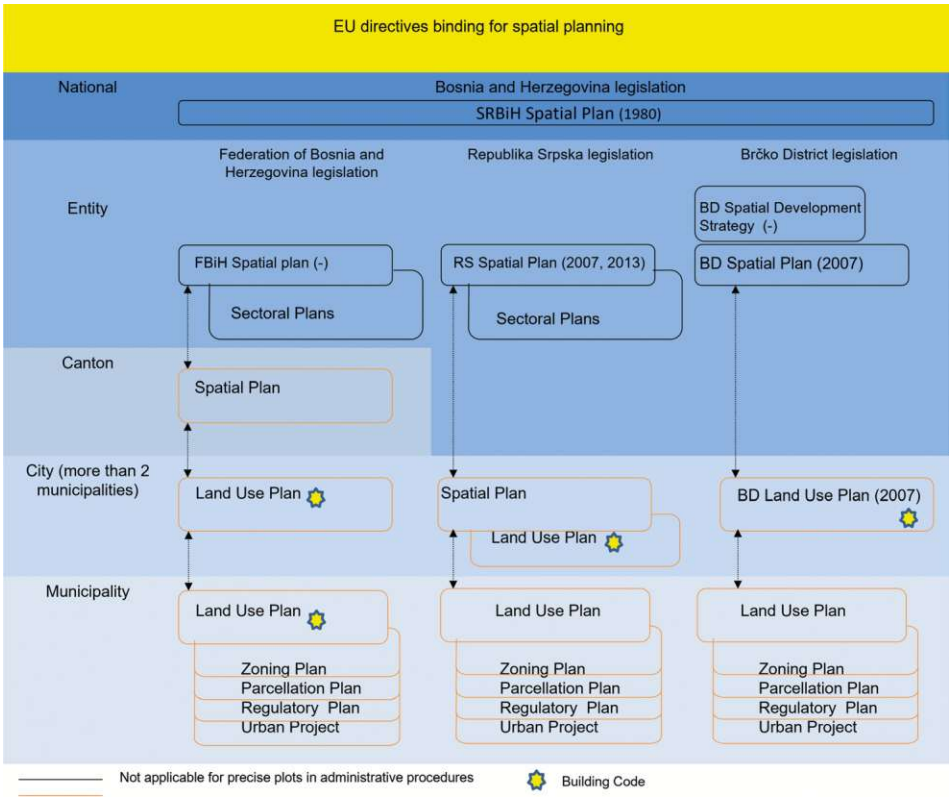


Figure 54 Current spatial planning system instruments in Bosnia-Herzegovina – Scenario “A” *(Pelja-Tabori, own presentation)*

In Scenario “A,” if placed in the existing spatial planning system, the future building code should have to regulate the following planning instruments:

- Four land-use plans (Land-use Plan for the urban territory of Sarajevo, Land-use Plan for the urban territory of Hadžići, Land-use Plan for the urban territory of Ilijaš, and Land-use Plan for the urban territory of Trnovo), currently valid, adopted in 1990, and amended in 1999. Four new land-use plans are in the drafting procedure since 2016. Land-use plans are being implemented on two governmental levels (city and municipality).
- The SC Spatial Plan Law (2006), amended (2011, 2018) for the whole cantonal territory
- All the above-mentioned five zoning plans and four types of development plans, implemented on the cantonal, city, and municipal levels, are applicable for precise plots in administrative procedures, according to the four building regime building regulation, in the form of decisions of implementation, as explained previously.

Where exactly would the new building code be placed in administrative procedures or, specifically, in the building permit procedure (Figure 55), already qualified in the research outcomes analysis as inefficient, because it results with only 1.5% of requests for building control permits?

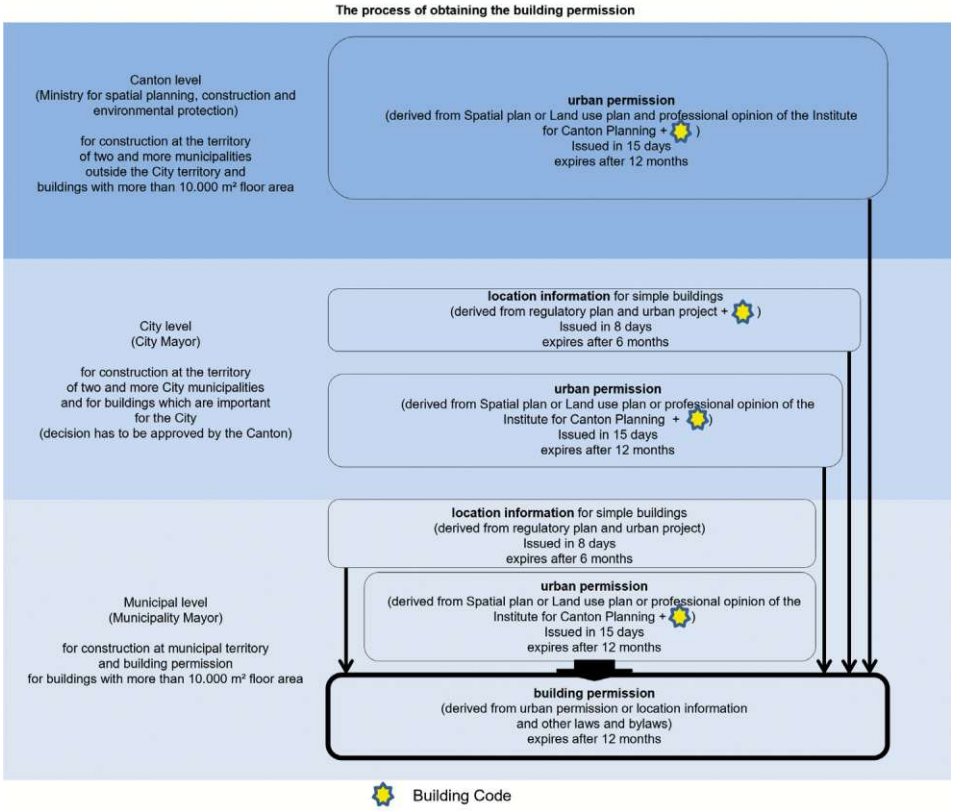


Figure 55 Current building permit procedure – Scenario "A" *(Pelja-Tabori, own presentation)*

The research outputs proving that urban permits as a precondition of building permits leads to an almost insignificant number of requests for building control permit advocates that such a concept should be implemented on the three governmental levels (canton, city, and municipality) and with nine different zoning and development plans does not work. In other words, our research outputs indicate an ineffective and unsustainable spatial planning systems currently.

Hence, it is not possible to introduce the new building code and to maintain legislation based on urban permits as a precondition of building permits and to maintain supplementary building procedure and its index of non-restrictiveness correlated with transfers of the actual development costs for supplementary building permits to the society instead to an individual builder. In particular, professional

opinion as a precondition of building permits in case development plans does not exist.

Therefore, the introduction of the building code for the SC to the unsustainable spatial and land-use planning system as it is described in Scenario “A” would not contribute to land-use implementation enhancement because it would be impossible to fulfil the main hypothetical premises of the research:

- Construction according to building permits only
- Compliance of spatial planning law, zoning and development plans, and building code
- Enhancement of procedural and institutional land-use planning implementation through an efficient building permit procedures.

According to the research outputs, we conclude that, albeit it is advisable to reintroduce the building code as the land-use planning instrument that contributes to a sustainable spatial planning system and the enhancement of land-use planning implementation in Scenario “A,” the new building code would be incompatible with the currently valid urban acquis of the existing spatial planning system in Bosnia-Herzegovina and the SC, qualified as inefficient and unsustainable.

To be effective and to achieve its main purpose to contribute to effective land-use planning implementation, the building code introduction demands major changes and the adaptation of the spatial planning system to the current sociopolitical and economy constitution of Bosnia-Herzegovina and continental European urban acquis.

Therefore, we shall focus on Scenario “B” or for the purpose of the research “the Ideal Scenario.”

5.3 Scenario “B” – The Ideal Scenario

“It is more proper that law should govern than any one of the citizens.”
Aristotle

The research comparative-historical outputs, empirical–analytical outcomes, and Delphi method outputs encourage us to think that it is advisable to introduce a building code. However, in a real-life scenario, a much wider consensus among governmental representatives, professionals, and other stakeholders would be needed, not just about the idea but the purpose and modality to introduce such a law, with all its elements. In the meantime, as a preparation for a hypothetical reform of the spatial planning system in the SC, with the accession of BiH to the EU, the researcher shall be free to allow herself to arrive to a place of ideal perfection (utopia) (Klaić, 1966, p. 1298) by attempting to imagine a possible scenario for introducing the new building code for the SC in the hypothetical circumstances.

The ideal scenario implies preconditions for the introduction of the new law as follows:

1. Political commitment to European values and accession to the EU
2. Comprehensive reform of the entity and the cantonal legislation in the sector of spatial planning according to the principles of sustainable development, which implies the following:
   a) Introduction of informal planning processes and non-binding or conceptual planning instruments, regional planning, and technical guidelines and building and design standards
   b) Eradication of urban permits and foundation of building permit procedure on building permits proper
   c) Building permit being a function of the building code, spatial planning law, and zoning and development plans.

The building code is European urban acquis contribution to the founding value of the EU, which is a strong rule of law. Therefore, the first precondition for introducing the law to the spatial planning legislation would be the political commitment of Bosnia-Herzegovina to European values and accession to the EU. The first precondition is partly fulfilled since Bosnia-Herzegovina applied for EU membership in February 2016 (European Commission, n.d.), albeit is not an EU member state yet.

The second precondition would imply a comprehensive reform of the Bosnia-Herzegovina legislation, entity, and cantonal legislation in the spatial planning sector.

Even though divided into two entities and the district and practicing spatial planning on the entity, cantonal, and municipal levels currently, Bosnia-Herzegovina should establish mechanisms of coordination between the entities and decision making or brainstorming on the national level as an informal planning process. The future EU framework would imply implementing EU directives in the sector of spatial planning; guidelines, such as European Spatial Development Perspective (ESDP) and Territorial Agenda 2030 (TA 2030); and guidelines for building and design standardization. Therefore, it would imply establishing bodies, such as Bosnia-Herzegovina Initiative for Spatial Planning, following the Austrian example of ÖROK (Austrian Conference on Spatial Planning), to achieve national strategic approaches of the regional policy and cooperation between entities in spatial planning, capable of producing the joint informal document, i.e., Bosnia-Herzegovina Spatial Development Concept. Another institution on the national level that should be established is Bosnia-Herzegovina Institute for building technology, design, and standards. The scheme of the proposal for the reformed spatial planning system in Bosnia-Herzegovina is shown in Figure 56.

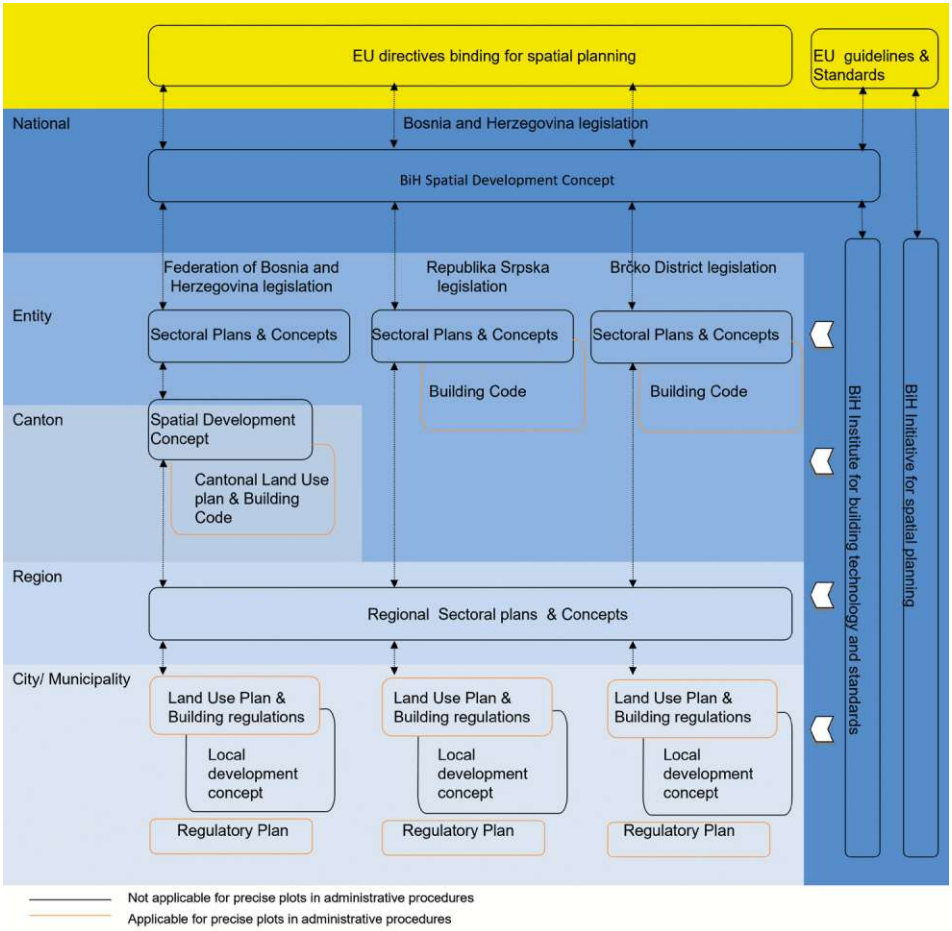


Figure 56 Proposal for the reformed spatial planning system in Bosnia-Herzegovina – the Ideal Scenario *(Pelja-Tabori, own presentation)*

Instead of complicated and long administrative procedures that do not often result with adopted plans (e.g., Federation of Bosnia-Herzegovina Spatial Plan), it would be advisable to replace entity spatial plans with sectoral plans and concepts, coordinated by the above-mentioned bodies on the national and entity levels. Laws on spatial planning and construction on the entity, district, and cantonal levels should be amended accordingly. The entities, district, and cantonal government levels should provide spatial development concepts, instead of spatial plans, again to make administrative procedure simpler and coordinated with the national level. Building codes should be on the cantonal level for the Federation of Bosnia-Herzegovina and on the entity level for the Republika Srpska and Brčko District. Cantons in exceptional cases (as is Geneva and Basel, or Vienna, the city that has the status of both a federal state and the capital city) and the district and cities (more than two municipalities) should prepare land-use

plans accompanied with a building code. For all other cases, building regulations should accompany land-use plans on the municipal level. Specific building regulations may differ from municipality to municipality, according to the specificities of zoning and development plans, albeit general provisions must be in compliance with the building code, spatial planning law, and construction law on the entity, district, and cantonal levels.

The regional level of planning should be introduced to stimulate cross-border/entity cooperation of the local authorities, especially for divided cities, such as Sarajevo, where the Dayton line is "cutting" the urban territory in two parts, the FBiH and RS parts, to improve the quality of life of citizens on both sides of the border. On this level, regional sectoral plans and concepts should be delivered. Land use should generally be regulated by local land-use plans, which should be prepared by municipalities. Land-use and regulatory plans should be appended with building regulation for the municipal level, in compliance with a building code, spatial planning law, and construction law.

The reforming of the sector of spatial planning according to the principles of sustainable development (society, economy, and environment) should aim to improve the quality of life by respecting the limits on the use of natural resources. In Europe, the "environmental protection boom has begun in the 1980s and continued through the 1990s with the start of the sustainability debate, which was to ensure that environmental aspects deserve the same treatment as social and economic factors" (Gruber et al., 2018, p. 70). The war in the 1990s unfortunately interrupted the sustainable development of Sarajevo, which began in the 1980s.

If we focus on the SC, a sustainable green city model, in our ideal scenario, might be the most appropriate for the SC spatial development concept, considering the environmental issues that Sarajevo faced since the 1980s, elaborated in Section 3.5. These problems are transportation concepts regarding the protected cultural heritage areas, air pollution, waste management, carbon management, lack of transportation and communal infrastructure in the periphery, and enhancement of green areas. The future spatial development concept should set objectives for the sustainable development of the SC, by taking into account all its specificities. Sarajevo, as we have learnt in the analytical part of the research, has a specific geomorphology of the longitudinal city situated in the valley and surrounded by hills and mountains. The city has different historical layers of constructed environment, and the building code should take into consideration already built areas, "learn" from their genius loci, and respect natural limits. It means different regulations for construction on slopes and hills and in valleys, in relation to already built structures, in terms of alteration, building addition, reconstruction, and demolition.

Based on the empirical–analytical methodological research outputs, urban permits should be eradicated from spatial and land-use planning legislation on the entity, district, and cantonal levels. Therefore, the building permit procedure should be founded on the building permit proper. Construction, alteration, renovation, or demolition should be a function of a proper building permit, and building permits should be a function of the planning and coding system. Hence, the whole spatial and land-use planning legislation has to be analyzed and amended accordingly, primarily the spatial planning law and land use on the federal level (Službene novine Federacije BiH, 2006), construction law on the federal Level (Službene novine Federacije BiH, 2003), decree on uniform methodology for producing spatial planning documentation on the federal level (Službene novine Federacije BiH, 2004), and the SC Spatial Planning Law (Službene novine Kantona Sarajevo, 2017) on the cantonal level.

The fact that Sarajevo is both a city and canton, based on the continental European case studies of the city and the Canton of Geneva and the City and the Canton of Basel in Switzerland, offers an opportunity to regulate land-use planning on the cantonal level.

The comparative-historical research outputs lead us to two options for introducing a building code either as a single document or as two separate acts. An argument advocating for a single-document model is the fact that Sarajevo is the capital city, as it was the case when the first building codes for the State Capital Sarajevo were set (Ger. Bauordnung für die Landeshauptstadt Sarajevo), when they were contemporary with the State Capital Vienna building code. This condition emphasizes the fact that the capital city might have different regulations than other cities in Bosnia-Herzegovina. In this case, a new SC spatial planning act and building code would be a single law (Figure 57).

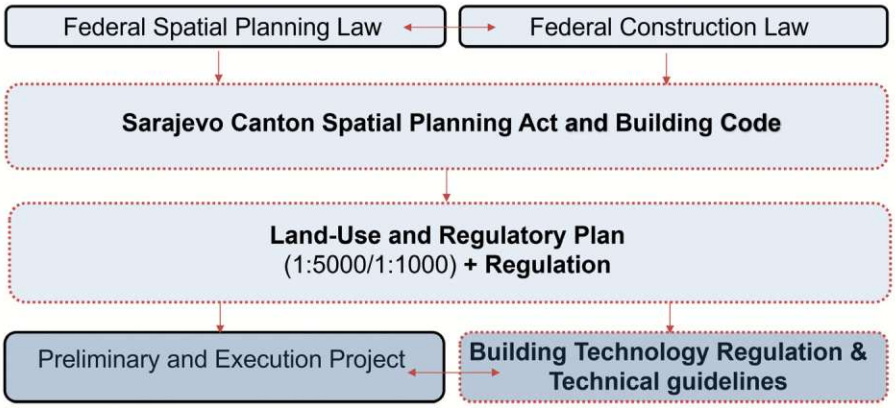


Figure 57 Ideal scenario for introducing the new building code – the single-act option *(Pelja-Tabori, own presentation)*

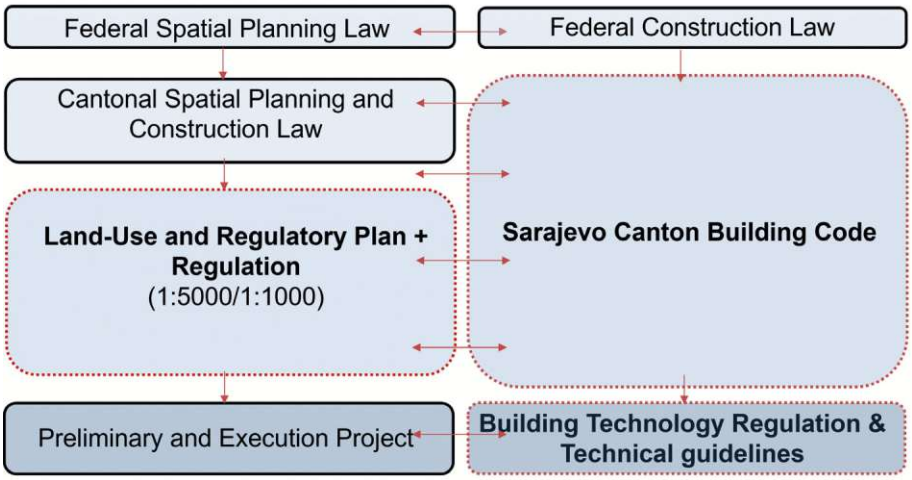


Figure 58 Ideal scenario for introducing the new building code – the alternative with two separate acts *(Pelja-Tabori, own presentation)*

The alternative is to maintain the cantonal spatial planning law and to amend it in a manner that it becomes cantonal spatial planning and construction law, as is the case with other cantons in the Federation of Bosnia-Herzegovina (Subheading 3.5.2) and to develop a building code as a separate act, in compliance with the new cantonal spatial planning and construction law (Figure 58).

In both cases, the ideal scenario and its alternative, as we may see in the following tables, the most important is that a new legislative form (framed with red dots) corresponds with the federal and cantonal spatial and land-use planning legislation (framed with black continuous line), which, as previously mentioned, must be reformed accordingly.

Based on the contemporary continental European examples examined in this research, which are relevant to the SC governmental and spatial planning system and by the hypothesis of this research, spatial planning law, building code, and zoning and development plans are necessary causes for obtaining building permits. In the SC, the building permit procedure should be a function of the new cantonal zoning and development plan and the new spatial planning act and building code (Figure 59).

Such an approach simplifies the building permit procedure and makes it dependable on essentially just one plan, and one, or in the alternative version two laws, in compliance with one to another, instead of complicated four building regime regulation in the form of implementation decisions appending five zoning plans and four different development plans in Scenario “A”.

The expiry limit for the building permit procedure should be extended because our research outputs indicate that the current time limit of one year is not long enough to arrive to building control permits, according to the examined number of requests for building control permits. According to the research outputs, simplified building permit procedures, among the enhancement of other links of the spatial planning system chain, could bring to a higher percentage of completed building control permit requests.

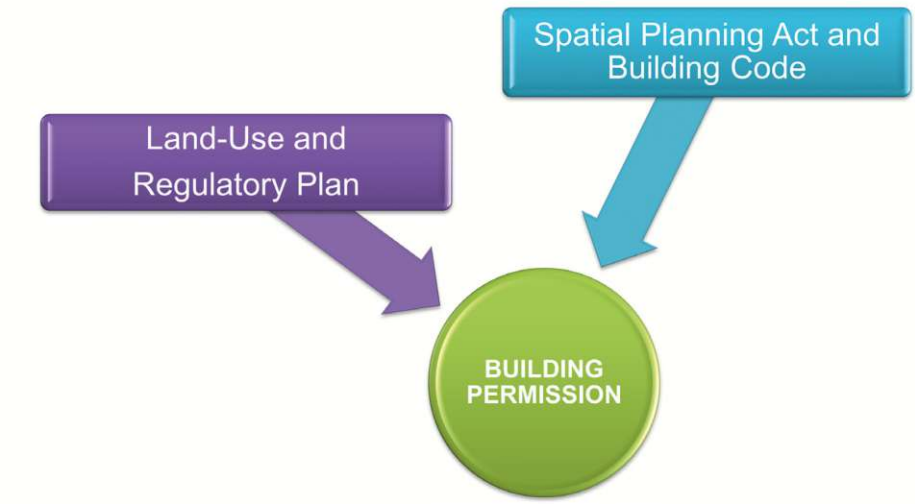


Figure 59 Proposed model for the building permit procedure within the ideal scenario for introducing the new building code *(Pelja-Tabori, own presentation)*

The most important is to introduce a building code holistically thinking of a spatial planning system according to the principles of sustainable development. Hence, all three components of such a system, i.e., environment, economy, and society, must be taken into consideration when defining rules and regulations. The new sociopolitical and economical system established after the first multi-party parliamentary elections in Bosnia-Herzegovina in 1990 did not reflect on the spatial planning system, primarily considering planning implementation instruments and defining and safeguarding public and private responsibilities and rights.

Therefore, the new reformed spatial planning system on the entity, district, cantonal, and municipal levels should imply the introduction of planning implementation instruments in the domains of economy and society, such as private–public partnerships and contracts, subsidies for social housing and cultural heritage-protected buildings, building land mobilization, and consolidation, to the future building code documents and sectoral legislation. Such a concepts should enhance procedural and institutional land-use implementation. In this research, institutional land-use planning implementation sustainability evaluation was limited to the

three cantonal institutions through Implementation practices described in Subheading 4.2.3.

In the future, it would be advisable to conduct a more elaborate evaluation of all the other institutions participating in the building permit procedure, such as cantonal ministries in the sector of spatial planning, the City of Sarajevo planning department, and all nine cantonal municipalities. If we presuppose that the SC should practice land-use planning and management on the cantonal level, it would be highly recommendable to have cantonal building office as a one governmental-level solution for the building permit procedure, instead of the current three governmental levels (Figure 60). Again, this proposal should be assessed in a more elaborated form, albeit the comparative-historical methodology outputs indicate that continental European countries practice issuing of building permits at the same governmental level they practice land-use planning.

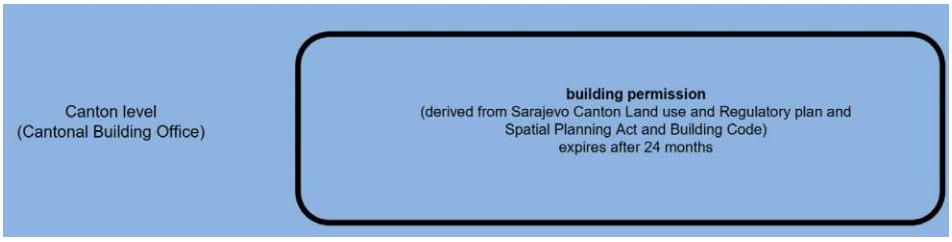


Figure 60 Proposal for the building permit procedure linked with the catchment area of the future building code – the Ideal Scenario *(Pelja-Tabori, own presentation)*

According to this model, offices, such as the existing three cantonal institutions that have continuity in practicing planning and planning implementation (i.e., Institute for Canton Planning, Canton Sarajevo Development Institute and Cantonal Institution for the Protection of Cultural, Historical, and Natural Heritage), capable of producing and safeguarding processes of planning and implementation, should be under one roof, enhancing the institutional land-use planning implementation.

Building codes should guide the further regulation of building technology and technical guidelines for preliminary and executive design projects, according to EU directives and building standards, and, as elaborated before, BiH building, technology, and design standards should be established accordingly. Such spatial and land-use planning and implementation system would contribute to integrated development, in which there is a logical and coordinated order from conceptual plans to construction details.

For the conclusion, in Table 53, we might perceive the difference between the two scenarios for introducing the future SC building code, upon the analyzed indica-

tors of procedural and institutional land-use planning implementation, identified in the empirical–analytical methodology outputs. The presence (+) or absence (-) of a particular indicator demonstrates that they consist inseparable parts of different spatial planning systems and urban policies.

Table 53 Differences between the two scenarios according to building permit indicators

Indicators	Scenario “A”	Scenario “B”
Urban permit precondition for building permit	+	-
Existence of the supplementary urban permit procedure	+	-
Construction with building permits only	-	+
Existence of the supplementary building permit procedure	+	-
Professional opinion precondition for building permits with no development plan	-	+
Frequent changes in plans	+	-
Building regime regulation	+	-
Building code	-	+
Sustainable procedural land-use planning implementation	-	+
Sustainable institutional land-use planning implementation	-	+

Therefore, if our indicators in Scenario “A” affect an inefficient spatial planning system, as confirmed in the research outcomes’ description and interpretation, we can conclude that the building code in Scenario “B” should contribute to an effective and sustainable spatial planning system as its inseparable part.

Finally, if we abstract the factor of mentality, which was not in the focus of this research, we may conclude that the building code is a land-use planning implementation instrument that is an inseparable part of land-use management and land-use planning implementation system and sustainable, effective urban politics. Therefore, it is advisable to reintroduce the building code to the reformed and enhanced spatial planning system in Bosnia-Herzegovina and the SC, according to the European urban acquis, to achieve sustainable and integrated urban development.

We shall focus now on the elements of the future SC building code in Scenario “B”.

5.4 Elements of the Future Sarajevo Canton Building Code

After elaborating the preconditions for introducing the new law to the entity and SC spatial planning legislation, we shall seek to define the following elements of the future building code:

1. Catchment area
2. Content
3. Reference to land-use planning instruments
4. Aim and significance.

5.4.1 Catchment Area

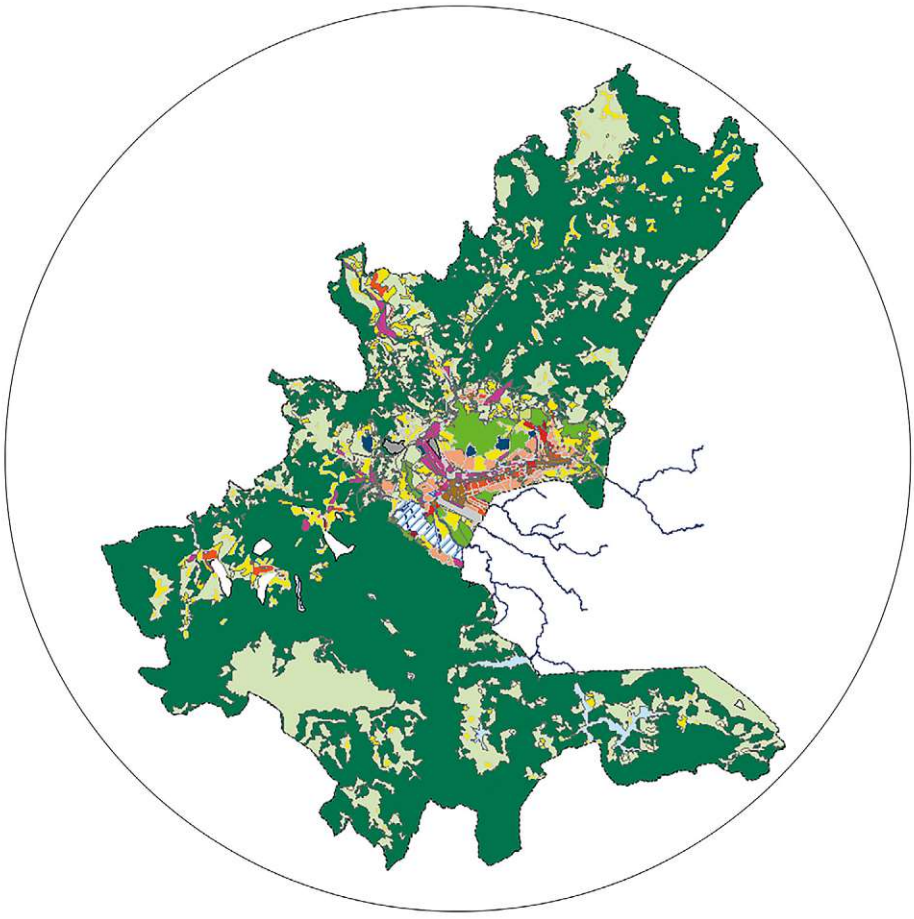


Figure 61 Catchment area of the future Sarajevo Canton building code – the "Ideal Scenario" *(Institute for Canton planning, Pelja-Tabori, own presentation)*

The outputs of the empirical–analytical methodological research indicated that the urban and suburban territory of the SC (Figure 61) might be the catchment area for the future building code based on the concentration of requests for urban permits, building permits, and professional opinions. The analysis indicated that within urban territory borders and in certain suburban and rural areas defined as areas of tourism and recreation, there is a bigger concentration of requests for urban and building permits then in the suburban and rural areas of the Canton in general.

Therefore, the whole canton administrative territory should be the catchment area of the future building code and the new cantonal land-use and regulatory plan. The building code and the zoning and development plan should comply with each other in terms of content. The building regulation should differ according to permissible land uses and zones within, which will be more elaborated in Sub-heading.

5.4.2 Content

The future building code should be contemporary with the continental European building codes in terms of its content, as they were the historical building codes of Sarajevo when they had been enacted. The content of the continental European building code, according to our comparative-historical research findings, has the same structure matrix because it had been created in the 19th century as follows:

- Mandatory proceedings before construction
- Mandatory proceedings during construction
- Mandatory proceedings after construction.

The mandatory proceedings before construction imply a planning process and instruments. Thus, in this part, instruments of strategic (conceptual), zoning (land-use), and development (regulatory) planning are defined, along with permissible land uses, zoning, and general building regulations.

The part of the content considering proceedings during construction defines all elements of the building permit procedure, regarding land-use planning implementation. Therefore, this part contains expropriation procedures, responsibilities, and rights of parties involved in building permit procedures, design project elements and provisions concerning it, and construction rules and regulations.

The final part of the content regulates the execution of construction works and use of built structures, land and property registry, authorities, and penalty sanctions.

Figure 62 Content of the future building code – the "Ideal Scenario" *(Bauordnung fur Wien (WBO) and Sarajevo Canton Spatial Planning Law, 2017)*

The crucial part for the Sarajevo case study and the future building code content is the second part, which we have earlier described as the one that concerns planning implementation through the definition of building procedure elements. As a guideline for the future building code content, we shall refer to the analysis outputs from Subheading 3.2.4 when comparing the Vienna building code content and the content of the SC Spatial Planning Law.

The elements that are missing in the case study of Sarajevo are those that enable planning implementation, listed in the following scheme (Figure 62) and framed in red. In the ideal scenario, these elements could be an essential part of the future building code. On the following pages, we shall explain in detail how each of the elements of this exemplary content might contribute to the creation of a new building code, as the instrument of planning implementation.

Preamble

The preamble of the new building code should enable legal continuity with the historic building codes of Sarajevo of 1880, 1893, and 1936. It should not be only a formality because the elements of the historical building codes of Sarajevo may be implemented today. Such elements are presented as follows:

- Building permits as the only precondition for construction, alteration, reconstruction, and demolition
- Building ban for constructing without building permits

- Building ban for deviations from executive projects
- Construction line determination
- Special conditions for construction near river flows and brooks, including the prescribed building profile and construction and alignment line (e.g., prescribed 5 m distance from the promenade dedicated for gardens and green areas from the Building Code of 1893)
- Street widening
- Land cessions
- Building ban for construction advancing toward streets
- Land cessions for street regulation
- Evaluation of land cessions
- Opening of new streets and squares
- Construction of new neighborhoods
- Procedure in relation to plots that became unusable due to street widening or street regulation
- Parcellation,
- Instructions for parcellation permits
- Special conditions for construction extensions
- Special conditions for construction on the left and right riverbanks of Miljacka
- Provisions for different building typologies
- Provisions for building details (e.g., openings, floor height, and walls)
- Provisions for building classes
- Provisions for street classes.

Each of the above listed provisions should be elaborated and adapted to the current conditions in the SC in the future building code.

I. Town Planning

The content of planning instruments (mandatory and strategic plans) should be given in this chapter. Mandatory plans would be land-use and regulatory plans, whereas conceptual plans would be cantonal, regional, and municipal concepts. The content of the zoning plan (land-use plan) and the content of the development plan (regulatory plan) are currently defined by a decree on uniform methodology for producing spatial planning documentation on the federal level (Službene novine FBiH, 2004) and the SC Spatial Planning Law (2017). Therefore, these documents must be amended accordingly.

II. Modification of property boundaries

III. Expropriation

IV. Other ownership restrictions

V. Resident benefits

VI. Indemnities

The essential element of the future building code is a strict definition of public and private property responsibilities and rights, especially when speaking of the transfer of land to public good, specifically in the matter of construction of new streets and squares and building land consolidation, rezoning, burdens, and legal disputes accompanying the rezoning procedure.

It must be remarked here, as a digression, that the definition of public and private property responsibilities and rights were elements of the historic Sarajevo building codes, as it was mentioned in the Preamble.

Expropriations should be defined in the future building code and ownership restrictions, resident benefits, and compensation policies. These juridical particularities are crucial for planning implementation and are currently missing in the SC spatial planning system, indicated by a considerable number of cases of the administrative appeals in building permit procedures.

The protection of planning implementation, which in the case of Sarajevo is a particular problem, according to the indicators of land-use planning documentation, such as frequent plan corrections and amendments, may be ensured through a special compensation fee, as in Switzerland, where in the case of a change in the zoning plan, the property owner gains from this change and has to pay for it. A compensation related to co-financed public–private investments is to ensure an equal share of both sides in the development costs and protection of public interest or in the case of Austria, where cases of new zoning of building lands, implying an added planning value, are regulated through spatial planning contracts between municipalities and landowners for the utilization of the building land in compliance with the land-use plan and development and infrastructure costs that need to be paid by the landowners for infrastructure and development charges and infrastructure tax.

VII. Formal requirements for building projects

Formal requirements for preliminary and executive projects are currently defined in the cantonal Spatial Planning Law, and the good praxis should be preserved in the future building code. The only particularity that may be improved is the definition of graphics for diverse types of projects when applying for building permits, such as demolition, addition, and reconstruction. An example of a continental European building code appended with sketches can be a good praxis for clear and understandable parameters for all stakeholders.

VIII. Structural usability of the building sites

There are elements of the planning instrument, in our case cantonal land use and regulatory plan in the focus of the future building code: permissible land uses, zone, building class, construction method, building material, alignment line, construction line, and others. Within defined building zones, specific rules and regulations refer to development plans and their regulation.

IX. Building regulations

Establishing national building regulations with the reference to European directives and standards would imply defining building technology regulation and potentially technical guidelines. The future developments of the spatial planning system should include the definition of building and design standards for architectural projects, which would significantly enhance building control permit procedures, the status of architects and engineers as professionals who are eligible to produce and sign executive projects according to prescribed standards and regulations, and the improvement of the quality of buildings and consequently the quality of life.

X. Rules considering the execution, use, and maintenance of the work

The rules already defined by the Spatial Planning Law should be further developed, especially regarding regulating building maintenance and defining a period for execution works of single housing, in the future building code, according to EU regulation.

XI. Announcements

Inscription and deletion in the land registry should imply the synchronization of a cadastre and land registry and should be the basis for planning. This process is currently ongoing in the SC. The current Spatial Planning Law prescribes a cadastre as a basis for planning, and this principle should be preserved in the future building code.

XII. Authorities: Parties and stakeholders

Parties and stakeholders are already defined by the Spatial Planning Law. However, the law should be further developed in the future building code regarding the definition of all stakeholders and their role in building permit procedure and defining consequences for disobeying defined rules and regulations, especially stressing the importance of defining neighbor rights and responsibilities and private investors vs. public investor responsibilities in the building permit procedure.

5.4.3 Reference to Land-use Planning Instruments

The idea of introducing a new form of land-use plan, which would also be a regulatory plan, for the whole territory of the SC, as in the Viennese case study, is guided with the aim to simplify building permit procedures, avoid frequent changes in zoning and development plans, and cover the whole building land area with regulatory plans. Such a planning instrument should provide a cadastral basis, along with zoning and building regulation for each plot.

The drafting of such a plan would take a long time and imply a detailed GIS information basis, albeit the researcher is convinced that the Institute for Canton Planning has the capacity, along with the continuity in planning since 1954, in cooperation with EU partners, to produce quality and contemporary land-use and regulatory plans for the SC. The planning basis for the new cantonal land-use and regulatory plans should include new transportation studies because the last transportation study was performed in 1970 based on cooperation between the Institute for the City of Sarajevo Planning and Swedish consultancy company Sweco.

The future cantonal land-use and regulatory plan should define:

- Permissible land uses (building land, undeveloped land, transportation, and special purpose), and zones (building zones) in a scale of 1:5000
- Construction line (for buildings and streets)
- Alignment line (for buildings and streets)
- Building height
- Building class
- Construction method.
- Other provisions considering the building position, building ratio, commercial and business, social infrastructure, car parking space, open space and green area percentage, and trees in a scale of 1:1000.

The permissible land uses, zones, and building regulations within them, defined in future cantonal building codes, should correspond with the land-use, zone, and building regulations defined in the future cantonal land-use and regulatory plan.

The construction in a specific zone, apart from the graphics of the plan, should be defined according to the regulation. The regulation should be a written document, with explanatory sketches that should append the future land-use and regulatory plan in compliance with the building code.

The diagram (Figure 63) shows the relationship between the main elements of the future cantonal land-use and regulatory plan.

Figure 63 Relationship between the main elements of the future cantonal land-use and regulatory plan *(Pelja-Tabori, own presentation)*

The regulation should replace current decisions of implementation. The main difference of such documents from implementation decisions is its structure defined by the building code and its schematic and descriptive character that should be clear for all stakeholders in the building permit procedures. The schemes should "graphically explain" specific zone regulations that refer to characteristic street sections, alignment and construction line, permissible building heights, street width, building class, construction methods, and other provisions considering the building position, building ratio, commercial and business, social infrastructure, car parking space, open space and green area percentage, and trees.

Finally, the reference of the future cantonal building code to planning instruments is presented in Table 54.

The building regulation in Sarajevo, in the past 80 years, did not include street sections. Consequently, among other factors, we have neighborhoods in the urban territory, built with no streets and no communal infrastructure.

As a starting point, a thoughtful analysis of different existing building typologies of street and building sections should be made to classify existing buildings and make clear zoning.

Table 54 Reference of the future building code to planning instruments according to Scenario “B”

Reference of the future building code to planning instruments	Scenario “B”
Permissible land uses and zones defined in accordance with the land-use plan and regulatory plan	+
Building zone regulation with explanatory sketches instead of current implementation decisions	+
Building zone regulation in compliance with land-use and regulatory plans implies alignment and construction line, permissible building heights, street width, building class, construction methods, and other provisions considering the building position, building ratio, commercial and business, social infrastructure, car parking space, open space and green area percentage, and trees	+

Every location in each building zone in the canton has its specificities, and the rules and regulation in the future building code should take this into consideration.

The form-based approach to coding, as elaborated previously, considers existing forma urbis and transforms it to a rule, which makes the coding process rooted in the genius loci of the city and its codification designed and adapted to local building conditions. The argument for this guideline for the new building code is the quantitative procedural land-use implementation analysis. Based on the analysis of typologies of requests in the building permit procedure, they include construction, alteration, renovation, and demolition. Hence, the building code should intervene in the built environment to regulate the new construction and the existing one.

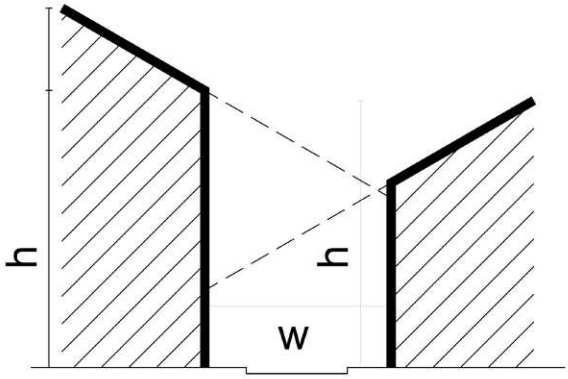


Figure 64 Location of Alifakovac, Municipality Stari Grad, and existing street sections with single houses framing the street section *(Pelja-Tabori, own presentation)*

Figure 65 shows the analyzed examples in the SC, on the building land, on hills or in the valley, and mainly in residential zones and mixed-construction areas, classified by the municipality they are situated in. The analysis was performed for

the purposes of this research to demonstrate that the morphological zoning method might be used for the future SC building code. We intervened not on tabula rasa, but in a city with an inconsistent built morphology and diverse urban matrix, developed over the past eight decades in the absence of a building code.

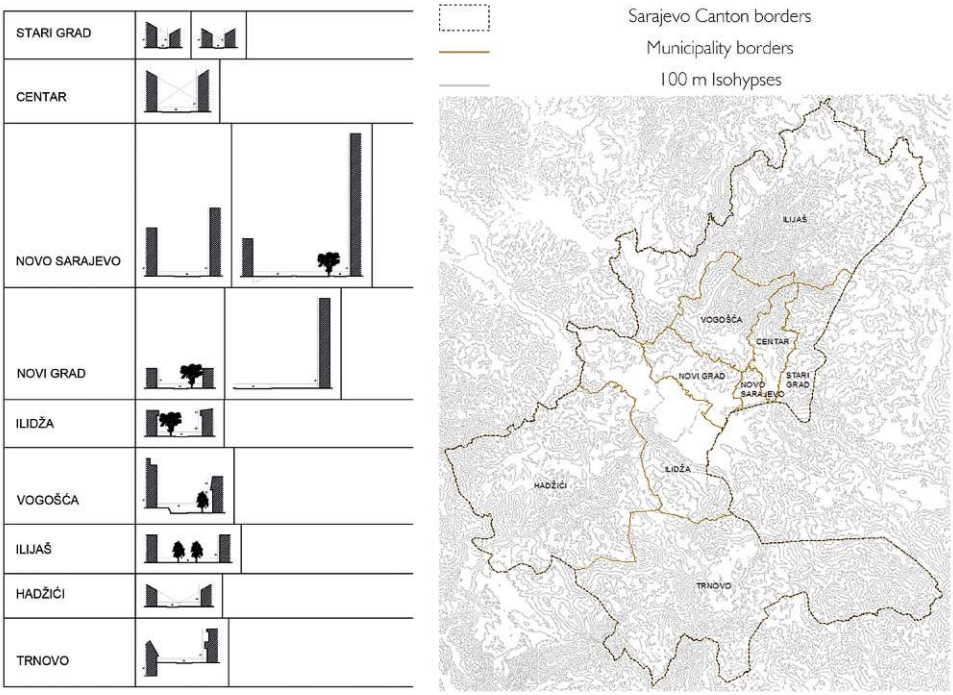


Figure 65 Typo-morphological zoning analysis in nine Sarajevo Canton municipalities *(Pelja-Tabori, own presentation)*

The presented examples of the existing housing typologies in the SC were chosen to distinguish that different rules and regulations should be established according to several street section parameters, such as the building height (H), street width (W), and roof angle from the street section.

We have concluded from the empirical–analytical research methodology outputs that the building particularity of Sarajevo is construction on slopes, especially the construction of a single house. The ratio between a single housing and condominium housing typology in Sarajevo is around 80%:20% in favor of single housing (Institute for Canton Planning data base). We could comprehend that the most dominant category in the analyzed requests in the building permit procedure is a request for the construction of a single house, which leads us to the conclusion that special attention should be dedicated to the rules and regulations for constructing a single house.

Therefore, in the case of a single-house construction, future building codes should foresee the descriptive regulation (in sketches) considering the building height, roof slope, distance from neighboring plots, and buildings, and special dedication should be paid to the relation of a single house toward the main street.

All other building typologies, including not only single housing but also condominium housing, commerce, and businesses, should be analyzed and classified. They were identified in the evaluation process of a building permit procedure, and they are the following typologies, ranked according to the number of requests in 2019:

- Infrastructure
- Sanction: reconstruction of existing or demolished buildings
- Partial interventions (terrace coverings, balcony glazing, staircases, and additions)
- Others (e.g., advertisement panels and lightning)
- Business buildings
- Condominium housing buildings
- Urban permit validity extension
- Changes of use
- Holiday house
- Auxiliary building
- Industrial buildings
- Temporary building
- Urban furniture
- Religious buildings
- Attic reconstruction
- Sub-terrain garage
- Addition of a common space in condominium housing.

Therefore, future building codes should contain a regulation regarding all the mentioned categories and the categories that have not been identified in the research, albeit existing in the cantons, such as high-rise buildings and shopping malls.

Aim and Significance

The main purpose of the new building code is to create an ordered, safe, and sustainable environment. Its significance lies in the ability of a building code to ensure the sustainable development of the SC because it aims to bridge between planning and planning implementation.

If we have to express the aim and significance of the future building code in one word, it would be a reinvention of a street as a public space. Our streets shall have to be redefined in the future, and building codes should be an integral part of this process.

The invention of the 19th century codification shaped contemporary European cities, their construction, and networks and safeguarded the relationship between private and public spaces. The reinvention of the art of public street and public spaces, a century after its invention, is the main contribution of the future building code to the SC context because it includes all elements that distinguish town planning from unbridled construction (characterized in Subheading 3.5.5), sometimes streetless (without streets, gravel path, and macadam).

The contemporary praxis in the SC, in which streets are planned or imposed over built structures in a manner that minimal demolition is allowed, has to be reformed into a system in which public space and infrastructure are built as a preparation for further construction.

A regulation for streets with sidewalks should be established, not only because a street contains necessary infrastructure but also because it is framed with buildings and characterised by their height, roof types, trees, and urban furniture. This kind of learning process to establish coding regulation from a built environment is developed in a typo-morphological or form-based coding, as previously explained in Section 3.4.

> Either by design or evolution, city streets and block patterns can give order and structure to a city, district, or neighborhood. In considerable measures, it is their purpose. The object is not only to facilitate communication but also to help people know where they are, in their neighborhoods, in relation to the larger community and to larger region …. All of this can happen at a two-dimensional level, without regard to a third dimension of topography or building height or to a fourth dimension that includes land uses and diversity habitation-factors that can in themselves give order and structure, either by reinforcing the two-dimensional patterns or running counter to them. (Jacobs, 1995, p. 257)

The ordered, safe, and sustainable environment of future building codes have implications in all aspects of the economy, environment, and society. In the circumstances of the market economy, the regulation implies defining public and private property owners' responsibilities and rights in the form of contracts, negotiations, and agreements. Clarifying and coding of this segment of future building code will contribute to safer ambience for living and for investments. For the environment, codifying will mean protection and safeguarding and sustainable management of resources. When the society is concerned, further regulations should improve

the quality of habitats, from dwellings in a city and its natural environment, by enabling effective planning implementation. It should also make the building permit procedure transparent and clear to all stakeholders with simple and understandable rules considering the construction to the target population of the SC, institutions at all government levels, and potential investors.

In conclusion, future building codes, in compliance with future cantonal land use and regulatory plans, should continuously be updated with novelties concerning new building technologies and building and environmental protection legislation, among others. Such a concept would contribute to the following:

- Reduction of fragmented zoning and development plan changes, detached from the consequences of such amendments for their immediate and wider environment
- Safeguarding of zoning and regulatory plans from obsolescence
- Coherence of planning and coding in compliance with novelties in legislation, regulation, building technologies, and standards.

5.5 Summary

The correlation between the indicators of the research analysis and the comprehensive current and hypothetical political and legislative framework of the SC results was established with two clearly identified potential scenarios for introducing future building codes. Scenario “A” implies the insertion of the new building code document in the existing spatial planning system under the political circumstance of Bosnia-Herzegovina still being a special case, a paralyzed potential candidate for EU membership, and with no structural reforms in the sector of spatial planning being conducted. Obviously, in a spatial planning system qualified as inefficient according to the research output analysis, a building code could not be placed because it cannot be effective as it might be in Scenario “B” or the “ideal scenario.”

The “ideal scenario” presumes political changes in the status of Bosnia-Herzegovina becoming an EU member and consequently performs reforms in the sector of spatial planning legislation based on the founding value of the EU, which is a strong rule of law. The reforms should imply the introduction of informal planning processes and non-binding or conceptual planning instruments, regional planning, and technical guidelines and building and design standards, eradication of urban permits and foundation of building permit procedure on a building permit proper, and building permit being a function of a spatial planning and construction law and a building code, zoning, and development plan.

The fact that Sarajevo is a city and the Canton, based on the continental European examples relevant to SC's political and legislative framework examined in the research, offers an opportunity to regulate land-use planning on the cantonal level. The comparative-historical research outputs lead us to two options for introducing a building code either as a single document or as two separate acts. An argument advocating for a single document model is the fact that Sarajevo is the capital city, and, as such, might have a different regulation than other cities in Bosnia-Herzegovina.

The research is concluded with the sublimed indicators identified in the research methodology outputs and inwrought in the elements of the future SC building code. The elements define the catchment area of the future building code, its content, the relation to be established with the planning instruments, and the mission of the new law. The relationship between the reformed planning instruments in the SC and the building code should be established through the regulation of permissible uses, zones, and building regulation.

The main purpose of the new building code is to create an ordered, safe, and high-quality urban environment. If obliged to express the new law main assignment for the urban development in SC, the essence of town planning would be reinventing the art of public space creation and protection of public interest guaranteed.

PART IV

Conclusions

6 Conclusions and Research Recommendations

This section presents the summarized conclusions and recommendations of the research, research scientific contributions, and potential future research directions.

6.1 Conclusions and Research Recommendations

The vast comparative-historical analysis conducted on the archive materials from Sarajevo, Vienna, and Paris, the analysis of the contemporary continental European spatial planning systems, the empirical analysis focused on procedural and institutional land-use planning implementation in the SC, and the conducted Delphi method among local experts in spatial and urban planning contributed to the complete gnosis of this research and resulted in the proposed model for introducing future building codes based on two scenarios. The difference between the two scenarios lies in the relation of the future building code for the SC to the indicators of the building permit procedure identified in the analytical part of this research. Throughout the differentiation process between the two scenarios, we have identified the important characteristics of a building code. These characteristics guided the research to the composition of elements of future SC building codes in an ideal scenario.

The first and most important characteristic of the building code is that it is not just a legal act but a worldview of the entire society. In our research, certain political contexts imply spatial planning systems, whose integral part is a building code, and others that do not consider it a necessary cause for system sustainability at all. Therefore, the political environment is essential for the introduction of such a law and effective planning implementation.

The second characteristic is the legal continuity of a building code with its historic precedents. Continental European building codes have maintained their structure and have been the main purpose of the document since the 19th century. In Sarajevo, it is a particular challenge and an important mission to establish the legal continuity of the future building code, after the 80-year-long void.

The third characteristic is the preconditioning of any construction with building permits. In other words, it would be impossible to build without a building permits in the SC according to the new law. Building permits would be a function of the building code and zoning and development plans.

The fourth characteristic is the rational systematization of planning instruments and coding elements, enabling the symbiosis of building code documents and zoning and development plans, which was established in the continental European spatial planning legislation in the first decades of the 20th century. In the case of Sarajevo, the liaison between the planning and planning implementation

instruments should be re-established with the new building code. The function of a building code is to unify all spatial planning acts in a single document with clear provisions and regulations regarding spatial planning, environmental protection, and construction.

Building codes, as a planning implementation instrument, provide a construction plan; therefore, it is an important link in the sustainable development process. The characteristic of a building code, which was revolutionary at the time when it was created, is the invention of a street with a sidewalk, a boulevard, and communal infrastructure. Paradoxically, in the 21st century, from the SC perspective, it is perhaps the most important characteristic of a building code. The definition of a relationship between the two dimensionalities of a plan and section that includes the propositions of the street width and building height and the establishment of such a relation to control the three dimensionality of a city. In the SC case, it is not only the relationship between a street and a built or unbuilt environment but also a relationship between a public and a private space that is missing since it was not legislatively defined and regulated for almost a century. Certainly, the not less important characteristic of a building code is the definition of the responsibilities and rights of all stakeholders in building permit procedures. In continental Europe, the building code has its mandatory structure. Its provisions are visible in the textual parts of zoning and development plans, or the so-called regulation. The legislative coherence of a building code and regulation appending planning instruments enables the implementation of the planning and coding instruments from zoning plans to development plans and executive projects, resulting in the urban three-dimensionality management from spatial planning concept to construction detail. The tenth characteristic of a building code is that it generates standards, building technology regulations, and technical guidelines, among others, which are all important preconditions for building projects that provide a better quality of life for the inhabitants of cities and villages in Europe.

We concluded this research with a clear statement that it is advisable to introduce a building code to the SC spatial and urban planning legislation to achieve sustainable land-use management and land-use planning implementation, according to the research methodology outputs.

A challenge is to create a meaningful building code for an environment that did not practice a building order for eight decades. Based on the research results, the introduction of a building code in the SC legislation implies serious reforms of the spatial planning system with all its complexity. Here, the research was focused on spatial planning legislation and not on some other aspects of the process evaluation, such as social psychology aspects, e.g., mentality, believing that the humankind is equal but not with the same ability to organize themselves and their societies or to create sustainable systems.

Finally, the building code is a question of political commitment to the founding values of the EU and future geostrategic processes in the Western Balkans. It was probably not a coincidence that a building code was not practiced during the socialism regime in all eastern bloc countries, including the Socialist Federal Republic of Yugoslavia, Socialist Republic Bosnia-Herzegovina, and City of Sarajevo. The only question that remains unanswered is why, after the fall of socialismn and thirty years after the first multi-party parliamentary elections in Bosnia-Herzegovina since when we are officially in transition, the building code is still not a part of the spatial planning system? Albeit the building code is currently a utopia, the researcher profoundly believes that Sarajevo's spatial planning system will be significantly reformed and that the absence of a building code document will remain one ephemeral phase of the city's longevity.

6.2 Research Contributions

The first scientific contribution of the present research is the selection of a research subject that might be useful in the SC spatial and land-use planning systems. However, the absence of a building code is a real problem in the SC, not an invented or hypothetical one. The absence of a building code, as a topic, has never beforehand been a reason for the systematic research of Sarajevo planning and coding system.

The second scientific contribution is the elaboration of the analysis of the coding and planning system in Sarajevo in a chronological and systematic order for the first time and for the first time in the English language.

Very few professionals from Sarajevo have written fragmentally and generally about problems and solutions for the Sarajevo spatial planning system and even less have written about the absence of building norms and standards, mostly in the previous century. Among the most significant ones are Architects Juraj Neidhardt, Muhamed Kadić, Ivan Taubman, Jahiel Finci, Aleksandar Levi, Mehmed Bublin, and certainly Midhat Aganović, former managing director of the City of Sarajevo Development Institute in the 1970s and the Institute for the City of Sarajevo Planning in the 1980s.

The third scientific contribution is a clearly defined methodology for the examination of a spatial and land-use implementation system sustainability in the absence of a building code, through a process evaluation of the building permit procedure in the SC.

The methodology framework of the combined comparative-historical method, with the relevant historical references and contemporary spatial planning systems and building permit procedures in Austria and Switzerland, empirical–an-

alytical method with a representative sample of over 60,000 analyzed requests in the building permit procedure in the last decade in the SC, the institutional land-use implementation analysis, and the Delphi method conducted with local experts, represents an in-depth analysis that can provide a complete scientific gnosis on the justification of reintroducing the new building code in Sarajevo.

The fourth scientific contribution is the reopening of the constructive dialogue between European spatial planners and urban jurists about the spatial planning system in the European countries in transition, such as Bosnia-Herzegovina and its capital city Sarajevo, challenged by its past and present, albeit directed toward the EU future.

The aim is to develop a model for introducing a new building code to the SC spatial and land-use planning legislation, which is motivated by the will and professional dedication to find a new modus operandi for developing a sustainable city in the future.

6.3 Building Code Model Limitations and Future Research

The limitations in the application of a proposed model are related to the absence of a national legislation to guide the implementation of public policies and an ineffective planning implementation system in BiH based on urban permits. In other words, an essential reform of the spatial planning system in BiH is needed as a precondition for introducing a building code document.

When speaking about the future sociopolitical and economic environment in BiH, in general, one has to mention its path to EU membership, particularly because the building code is primarily the European legislative heritage contributing to the founding value of the EU, which is a stronger rule of law.

A building code represents a challenge for the current transitional BiH spatial and land-use planning legislative systems. Albeit in the future, if applied, it may contribute to the strengthening of the legislative system and true integration of BiH to the continental European planning and coding systems. It would certainly be much easier to think of introducing the building code to the legislative framework of the SC in light of BiH becoming a member state when European acts and directives can become binding to BiH. The legislative gap between eastern and western Europe would be overcome, following the cohesion policy principles. Sarajevo and BiH would be a part of a wider European region.

The new model for the SC building code document may also be applied in the future spatial system in BiH and other BiH cities, considering their characteristics and specificities.

Future research relates to the several aspects of a spatial planning system as a whole and a building code in particular, such as integrative development, environmental protection, economy aspects of a building code, institutional land-use planning implementation evaluation, and regional planning; testing the hypothetical framework of this research in other southeastern European, Mediterranean, and global contexts; and creating informal instruments based on a building code, such as spatial concepts and technical guidelines.

Reference list

Aganović, M. (1981, April 23 and 24). *Strategija daljnjeg razvoja grada i sarajevske regije* [Strategy of further development of the city and Sarajevo region]. Simpozijum „Sarajevo – Grad i Regija u vremenu i prostoru 2000, godine". Akademija nauka i umjetnosti Bosne i Hercegovine, Univerzitet u Sarajevu, Gradska skupština Grada Sarajeva. Sarajevo: Akademija nauka i umjetnosti Bosne I Hercegovine, Specijalno izdanje, tom LVII, Odjeljenje tehničkih nauka, Broj 11

Aganović, M. (1991). *Aktuelni problem života i razvoja grada Sarajeva- Saradnja i organizovanje u djelatnostima od posebnog interesa u izmijenjenim društveno-ekonomskim odnosima* [Current problems of the City of Sarajevo life and development - Cooperation and organization of the activities of the special interest in changed socio-economic relations]. Sarajevo, Skupština grada Sarajeva

Aganović, M. (1993). Vital and Developmental Dilemmas of the Sarajevo Town. In *Architecture Magazin za arhitekturu, urbanizam i dizajn* (p. 112-115). Asocijacija arhitekata Sarajevo DAS – BiH dd DOM I OKO

Antić, D., Božićković, V., Divjak, V., Erić, H., Furundžić, B., Ginder, E., Ilić, Č., Mirković, B., Lj., Najdanović, N., Petrović, M., Simonović, Đ., Smiljanić, Đ., Šuica, Đ., Tomić, B., Trbuhović, Zrnić, D. & Zrnić, P. (1966). *Tehničar-Građevinski priručnik - II.* (V ed.). [Technician – Construction Manual- II part]. Beograd: Izdavačko preduzeće Građevinska knjiga

BBC. (2019). V*ienna ranked as the most liveable city in the world in 2018.,* Economist Intelligence Unit (EIU) annual survey [Online] Available at: https://www.bbc.com/news/business-45174600 [Accessed February 8, 2019]

Benková, L. (2016). *The Dayton Agreement Then and Now*. AIES Fokus 7/2016. (p. 1-5), Austria Institut für Europa und Sicherheitspolitik. Hainburg, Donau. [Online] Available at: https://www.aies.at/download/2016/AIES-Fokus-2016-07.pdf [Accessed December 14, 2016]

Bošnjović, I. (1981, April 23 and 24). *Problemi razvoja i zaposlenosti i situacija grada Sarajeva* [Problems of Development and Employment and the situation of the city of Sarajevo]. Simpozijum „Sarajevo – Grad i Regija u vremenu i prostoru 2000, godine". Akademija nauka i umjetnosti Bosne i Hercegovine, Univerzitet u Sarajevu, Gradska skupština Grada Sarajeva. Sarajevo: Akademija nauka i umjetnosti Bosne I Hercegovine, Specijalno izdanje, tom LVII, Odjeljenje tehničkih nauka, Broj 11

Brljavac, B. (2011). Europeanisation Process of Bosnia and Herzegovina: Responsibility of the European Union? *Open Edition Journals, Balkanologie, Revue d'études pluridisciplinaires*, VOL. XIII, No.1-2/2011, (p. 1-19). https://doi.org/10.4000/balkanologie.2328 [Accessed August 18, 2022]

Bublin, M. (2008). *Sarajevo throughout the history – from Neolithic settlement to metropolis.* Sarajevo: Buybook

Burchard, J. E. (2014). Reviewed Work: Haussmann: Paris Transformed by Howard Saalman. *The Art Bulletin:* Vol 56, No 4. https://doi.org/10.1080/00043079.1974.10789961 [Accessed October 18, 2018]

Calbick, K.S. Day, J.C. & Gunton, T. I. (2003). Land Use Implementation - A Best Practices. *Environments*, Vol.31, Issue 3, 2003, (p. 71-84). [Online] Available at: https://www.researchgate.net/publication/264878314_Land_Use_Planning_Implementation_A_%27Best_Practices%27_Assessment [Accessed May 18, 2020]

Commission of the European Communities. (1998). *Sustainable Urban Development in the European Union: A Framework for Action*. Brussels: CEC

Curtis, W. (1986). *Le Corbusier: Ideas and Forms.* Oxford: Phaidon Press Limited

Ćuković, M. (1974). *Prilog definiranja sarajevske regije metodom analize gravitacionih krugova anomalne potrošnje*. [Proposal for defining the Sarajevo region by the gravity model analysis method of anomalous consumption]. Zagreb: Arhitektonski fakultet Sveučilišta u Zagrebu

De Loe, R. (1995). Exploring complex policy questions using the policy Delphi: A multi-round, interactive survey method. *Applied Geography*, VOL. 15 , Issue 1, January 1995, (p. 53-68), https://doi.org/10.1016/0143-6228(95)91062-3

Donia, R. (2006). *Sarajevo A Biography.* (Paperback edition, 2009 ed.). London: C. Hurst & Co. (Publishers) Ltd

ETH Zurich. (2008). *Spatial Planning and Development in Switzerland - Observations and Suggestions from the International Group of Experts*. Bern: Swiss Federal Office for Spatial Development (ARE)

Fainstein, S. & Campbell, S. (2011). *Readings in Urban Theory*. (Third Edition ed.). Willey-Blackwell

Faludi, A. (2018). *The Poverty of Territorialism: A Neo-Medieval View of Europe and European Planning*. Cheltenham, UK: Edward Elgar Publishing

Federal Constitution (1999) Online source https://www.constituteproject.org/constitution/Switzerland_2014?lang=enShoul be added to the reference listSWITZERLAND, 1999 (rev. 2014) [Online] Available at: https://www.constituteproject.org/constitution/Switzerland_2014?lang=en [Accessed August, 26, 2023]

Federal Department of Justice and Police. (1987). *The Swiss Federal Spatial Planning Law*, Berne

Federal Institute for Statistics and the Republika Srpska Institute for Statistics. Републички завод за статистику - Република Српска. https://www.rzs.rs.ba

Federal Office on Spatial Planning. (1987). *The Swiss Federal Law on Spatial Planning: Spatial planning in Switzerland*. Berne

Federalni zavod za statistiku (2019). *Popis stanovništva, domaćinstava/kućanstava, stanova i poljoprivrednih gazdinstava 1991* [Census 1991 and earlier]. [Online] Available at: http://fzs.ba/index. php/popis-stanovnistva/popis-stanovnistva-1991- i-stariji/ [Accessed February 5, 2019]

Federalno ministarstvo prostornog uređenja i zaštite okoliša & IMG: (1999) Manual of standard building specifications for architectural norms, and standards for the execution of works of construction, reconstruction, sanitation, and ad-

aptation [Priručnik o tehničkim i obligacionim uvjetima za projektovanje i izvođenje radova na izgradnji, rekonstrukciji, sanaciji adaptaciji građevina visokogradnje]. Rabic, Sarajevo, BiH

Fefer, J. P., De-Urioste Stone, S., Daigle, J. & Silka, L. (2016). Using the Delphi Technique to Identify Key Elements for Effective and Sustainable Visitor Use Planning Frameworks. *SAGE Open*, 6(2). https://doi.org/10.1177/2158244016643141

Finci, J. (1946). *O regulacionom planu gradu Sarajeva* [On the Regulatory Plan of the City of Sarajevo]. *Sarajevski dnevnik*, II/1946, br. 261, (p. 14)

Finci, J. (1955). *Stanovanje i stanbena problematika Sarajeva* [Housing and residential problems of Sarajevo]. Gradsko vijeće Sarajevo, 1955

Gausa, M., Guallart, V., Müller, W., Soriano, F., Porras, F. & Morales, J. (2003). *The Metapolis dictionary of advanced architecture – City, technology, and society in the information age*. Barcelona: ACTAR

Ghazinoory, S., Abdi, M. & Azadegan-Mehr, M. (2011). Swot Methodology: A State-of-the-Art Review for the Past, A Framework for the Future. *Journal of Business Economics and Management* Vol. 12, Issue 1, (p. 24 - 48), DOI:10.3846/16111699.2011.555358

Green, N. (2012). Chapter Two - A Chronicle of Urban Codes in Pre - Industrial London's Streets and Squares. In Marshall, V. (Ed.), *Urban Coding and Planning* (first edition 2011 ed.) (p. 14-32). Routledge

Gruber, M., Kanonier, A. Pohn-Weidinger, S. & Schindelegger, A. (2018). *Spatial Planning in Austria with References to Spatial Development and Regional Policy.* Vienna: Austrian Conference on Spatial Planning (ÖROK), Publication series, 202

Gruber, M., & Pohn-Weidinger, S. (2018). The European Dimension of Spatial Developement. In ÖROK (Ed.). *Spatial Planning in Austria with References to Spatial Development and Regional Policy*. Vienna: ÖROK. (ÖROK publication series no. 202)

Gruber, M., & Pohn-Weidinger, S. (2018). Regional Policy and developement in Austria. In ÖROK (Ed.). *Spatial Planning in Austria with References to Spatial Development and Regional Policy*. Vienna: ÖROK. (ÖROK publication series no. 202)

Hadžiomerović, H. (1981, April 23 and 24). *Ekonomsko - urbana komponenta u dugoročnoj strategiji razvoja Sarajeva* [Economic - urban component in the long - term strategy of the development of Sarajevo,]. Simpozijum „Sarajevo – Grad i Regija u vremenu i prostoru 2000, godine". Akademija nauka i umjetnosti Bosne i Hercegovine, Univerzitet u Sarajevu, Gradska skupština Grada Sarajeva. Sarajevo: Akademija nauka i umjetnosti Bosne I Hercegovine, Specijalno izdanje, tom LVII, Odjeljenje tehničkih nauka, Broj 11

Hagen, A. (2015). Wiener Bauordnungen und Planungsinstrumente im 19. Jahrhundert. [Viennese building regulations and planning instruments in the 19th century]. Zentrum für Umweltgeschichte Wien (Ed.). *Materialien zur Umweltgeschichte Österreichs*; Nr. 6

Jacobs, A. B. (1995). *Great Streets.* (First edition ed.). Cambridge, Massachusets: Massachusetts Institute of Technology

Jessen, J., Meyer, U. M. & Schneider, J. (2008). *Urbanity and the Planning Culture in Europe - Barcelona, Amsterdam, Almere, Manchester, Copenhagen, Leipzig, Sarajevo, Zurich.* Stuttgart: Wustenrot Stiftung

Jugoslovenski institut za urbanizam i stanovanje Beograd i Zavod za prostorno planiranje razvoja grada Sarajeva. (1985). *Urbosociološka studija Sarajevo – Opšti i posebni uslovi nastanka i razvoja bespravne stambene izgradnje u Sarajevu* [The urban - sociology survey - Impact of general and particular determinations on occurrence and development of the informal settlements in Sarajevo]. Beograd

Kadić, M. (1941). Žurna potreba izrade regulatorne osnove Sarajeva [The urge to develop the regulatory basis of Sarajevo, Sarajevo new paper]. *Sarajevski novi list*, I/1941, br. 180 (7.XII), (p. 5)

Kanonier A., & Schindelegger A. (2018): Developement Phases of Austrian Spatial Planning Law. In ÖROK (Ed.). *Spatial Planning in Austria with References to Spatial Development and Regional Policy*. Vienna: ÖROK. (ÖROK publication series no. 202)

Kanonier A., & Schindelegger A. (2018): Distribution of Areas of Competence and Planning Levels. In ÖROK (Ed.). *Spatial Planning in Austria with References to Spatial Development and Regional Policy*. Vienna: ÖROK. (ÖROK publication series no. 202)

Kanonier A., & Schindelegger A. (2018): Planning Instruments. In ÖROK (Ed.). *Spatial Planning in Austria with References to Spatial Development and Regional Policy*. Vienna: ÖROK. (ÖROK publication series no. 202)

Kanonier A., & Schindelegger A. (2018): Spatial Planning Procedures and Processes. In ÖROK (Ed.). *Spatial Planning in Austria with References to Spatial Development and Regional Policy*. Vienna: ÖROK. (ÖROK publication series no. 202)

Kanton Sarajevo. (2018). *Register of regulations 1996-2017* [Registar propisa 1996-2017]. Ministarstvo pravde i uprave Kantona Sarajevo

Knieling, J & Othengrafen, F. (2009). Planning Cultures in Europe, Decoding Cultural Phenomena in Urban and Regional Planning. Ashgate Publishing Ltd. 2009

Kok, N., Monkkonen, P. & Quigley, J. M. (2013). Land Use Regulations and the Value of Land and Housing: An Intra-Metropolitan Analysis. *Journal of Urban Economics* 81, p. 136 - 148, DOI:10.1016/j.jue.2014.03.004

Koolhaas, R. & Mau, B. (OMA). (1995). *S, M, L, XL*. Rotterdam: 010 Publishers

Koš, A. (1932). Regulacioni plan i građevinski pravilnik za grad Sarajevo [Regulatory plan and Building code for the city of Sarajevo]. *Jugoslovenski list* XV, 31. august 1932, (p. 6)

Kropf, K. (2012). Chapter Nine - Coding in the French Planning System: From Building Line to Morphological Zoning. In Marshall, V. (Ed.). *Urban Coding and Planning* (first edition 2011 ed.) (p. 158-179). Routledge

Landau, B. (1992). La fabrication des rues de Paris au XIXe siècle: Un territoire d'innovation technique et politique [Fabrication of streets of Paris in the 19th

century: A territory of technical and political innovation]. *Les Annales de la recherche urbaine*, 1992. No.57-58, (p. 24-45)

Leithner, P. (2019). *Presentation on Construction Law – Basics, Land - Use planning in Vienna Building Code for Vienna, Building technology regulation*. Vienna

Levi, A., Taubman, I. & Bučar, G. (1978). *Projekat istraživanja i organizacije izrade urbanističkih normativa sadržaja naselja* [Project of Research and organization of drafting the urban norms for residential areas]. Sarajevo: Institut za arhitekturu, urbanizam i prostorno planiranje Arhitektonskog fakulteta u Sarajevu

Maggio, M. (1999). Urbanizzazione e Abusivismo nel Contesto Mediterraneo [Urbanisation and Informality in the Mediterranean Context]. *Urbanistica PVS*, vol. 23, (p. 3-8)

Mahoney, J. (2004). Comparative-Historical Methodology. *Annual Review of Sociology*, 30, 81–101. http://www.jstor.org/stable/29737686

Mairie de Paris (1989). *Plan d´occupation des sols de la Ville de Paris, Reglement.* [Land-use Plan of the City of Paris, Regulation], Octobre 1989

Marshall, S. (2012). Chapter One - Introduction. In Marshall, V. (Ed.), *Urban Coding and Planning* (first edition 2011 ed.) (p. 1-13). Routledge

Marshall, S. (2012). Chapter Twelve - Conclusions. In Marshall, V. (Ed.), *Urban Coding and Planning* (first edition 2011 ed.) (p. 227-242). Routledge

Martín-Díaz, J., Palma, P., Golijanin, J., Nofre, J., Oliva, M., & Čengić, N. (2018). The urbanization on the slopes of Sarajevo and the rise of geomorphological hazards during the post-war period. *Cities*, Vol. 72, Part A, (p. 60-69). https://doi.org/10.1016/j.cities.2017.07.004

McEwen, I. (2003). *Vitruvius: Writing the Body of Architecture.* Cambridge Massachusetts: MIT Press

McKean, C. (2012). Chapter Three - The Controlling Urban Code of Enlightenment Scotland. In Marshall, V. (Ed.), *Urban Coding and Planning* (first edition 2011 ed.) (p. 33-58), Routledge

Meijer, F., M., Visscher, H., J., & Sheridan, L. (2014). *Building regulations in Europe Part I: A comparison of the systems of building control in eight European countries. Delft: DUP Science.* http://resolver.tudelft.nl/uuid:80b23f4b-b27d-428b-a686-674807cad674

Miller, M. (1993). Enhancing Regional Analysis with the Delphi Method. *Review of Regional Studies*. 23(2), (p. 191-212). DOI:10.52324/001c.9112

Moughtin, C. & Shirley, P. (2005). *Urban Design Green Dimensions*. (Second Edition ed.). Routledge

Mumford, L. (1970). *The Culture of Cities.* (first published in 1938 ed.). A Harvest /HBJ Book, Harcourt Brace Jovanovich, Publishers

Myllylä, Y. & Kaivo-oja, J. (2015). Integrating Delphi methodology to some classical concepts of the Boston consulting group framework: arctic maritime technology BCG Delphi foresight—a pilot study from Finland. *European Journal of Futures Research,* Vol. 3 Issue 1. https://doi.org/10.1007/s40309-014-0060-7

Nadin, V., Fernández Maldonado, A.M., Zonneveld, W., Stead, D., Dąbrowski, M., Piskorek, K., Sarkar, A., Schmitt, P., Smas, L., Cotella, G., Janin Rivolin, U., Solly, A., Berisha, E., Pede, E., Seardo, B.A., Komornicki, T., Goch, K., Bednarek-Szczepańska, M., Degórska, B., Szejgiec-Kolenda, B., Śleszyński, P., Lüer, C., Böhme, K., Nedovic-Budic, Z., Williams, B., Varghese, J., Colic, N., Knaap, G., Csák, L., Faragó, L., Mezei, C., Pálné Kovács, I., Pámer, Z., Reimer, M. & Münter, A. (2018). *ESPON COMPASS – Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe: Applied Research 2016 – 2018, Final Report – Additional Volume 5, Additional Countries Feasibility Report*

Noam, E. M. (1985). The Interaction of Building Codes and Housing Prices. In *Real Estate Economics*, Vol. 10, Issue 4, (p. 394-404), https://doi.org/10.1111/1540-6229.00271

OECD. (2017). *The Governance of Land Use in OECD Countries: Policy Analysis and Recommendations*. Paris: OECD Publishing

Olgyay, V. (1963). *Design With Climate*. Princeton, New Jersey: Princeton University Press

Oslobođenje (1947). T.V. Izložba "Sarajevo i njegov uređajni plan" [Exhibition "Sarajevo and its regulatory plan"]. *Oslobođenje* V/1947, no. 346 (6.XII), (p.5)

Osmanković, J. (2001). Regionalizacija i regionalni razvoj Bosne i Hercegovine u poslijeratnom razdoblju [Regionalisation and regional development of Bosnia and Herzegovina]. *Zbornik Ekonomskog fakulteta u Zagrebu*, 12.01.2004., Vol. 2, Issue 1., (p. 33-44)

Osmanković, J. (2002). *Teorija i politika regionalnog razvoja Bosne i Hercegovine* [Theory and Policy of the Regional Development of Bosnia and Herzegovina]. Ekonomski fakultet Univerziteta u Sarajevu, Vol. 1

Pahl-Weber, E. & Henckel, D. (2008). *The Planning System and Planning Terms in Germany: A Glossary*. Hannover: ARL. 2008

Parolek, D., Parolek, K. & Crawford, P.C. (2008). *Form based codes - A Guide for Planners, Urban Designers, Municipalities and Developers*. Hoboken, NJ, John Wiley & Sons

Pavičić, I. (1932). Građevinski pravilnik za grad Sarajevo [Building Code for the city of Sarajevo]. *Jugoslovenski lis*t XV, 31. juli 1932

Pearce, M. & Toy, M. (1995). *Educating Architects.* London: Academy Editions, Great Britain

Pelja-Tabori, N. (2021). *Justification of Reintroducing the Building Code for Sarajevo Canton.* [PhD thesis, TU Wien]. https://doi.org/10.34726/hss.2021.70954

Planning and Construction Law (PBG – Planungs- und Baugesetz) adopted in 1975, amended in 1997 and 2010, 2013, and 2015. Version according to G of 22 October 2012 (OS 68, 189; OJ 2011, 1161). In force since 1 June 2013

Pospišil, J. (1909). Die Sarajevoer Stadtregulierung [The Sarajevo City regulation]. *Sarajevoer Tagblatt*, II (18,19,20)

Prstojević, M. (1999). *Zaboravljeno Sarajevo.* [Forgotten Sarajevo]. Author

Ragin, C. (1987). *The Comparative Method, Moving Beyond Qualitative and Quantitative Strategies*. University of California Press

Rossi, P. H., Lipsey M. W. & Freeman H. E. (2004). *Evaluation-A Systematic Approach.* (Seventh edition ed.). SAGE Publications, Inc.

Ryser, J. & Franchini, T. (2015). *International Manual on Planning Practice.* The Hague: ISOCARP

SERDA. (n.d.). Sarajevska makroregija [Sarajevo Macroregion]. [Online] Available at: https://serda.ba/bs/o-nama/sarajevska-makroregija/3. [Accessed February 26, 2019]

Silber, L. & Little, A. (1995). *The Death of Yugoslavia.* (Second ed.). London: Penguin Group and BBC Worldwide Ltd.

Skupština grada Sarajeva., Urbanistički zavod grada Sarajeva, Elektrodistributivno preduzeće "Vladimir Perić - Valter", Zavod za studije i projektovanje - Banja Luka, Gradsko saobraćajno preduzeće - Sarajevo, Zavod za geotehniku i fundiranje Građevinskog fakulteta - Sarajevo, Preduzeće P.T.T. - Sarajevo, Geodetski zavod - Sarajevo & Vojno - geografski institut - Sarajevo. (1974). *Sanacija područja stanovanja padinskih dijelova grada - Regulacioni plan I. faza. i Sanacija područja stanovanja ravničarskih dijelova grada - Regulacioni plan I. faza* [The recovery program for slope parts of the city - Regulatory plan Phase I and Recovery program for plain parts of the city - Regulatory plan Phase I]. Zavod za planiranje razvoja Grada Sarajeva, Sarajevo 1974

Službene novine Federacije BiH. (1994, March 30). *Ustav Federacije BiH* [Federation BiH Constitution]. Službene novine FBiH br.1/1994, 13/1997, 16/2002, 22/2002, 52/2002, 60/2002, 18/2003, 63/2003, 9/2004, 32/2007, 20/2004, 33/2004, 71/2005, 72/2005, 88/2008 i 79/2022

Službene novine Federacije BiH. (2003, May 16). *Zakon o građevinskom zemljištu Federacije BiH* [Federation BiH Law on Building Land]. Službene novine FBiH br.25/03

Službene novine Federacije BiH. (2004, November 12). *Uredba o jedinstvenoj metodologiji za izradu dokumenata prostornog uređenja* [Decree on uniform methodology for producing spatial planning documentation]. Službene novine FBiH br. 63/04, 50/07

Službene novine Federacije BiH. (2006, January 1). *Zakon o prostornom uređenju i korištenju zemljišta na nivou FBiH* [Spatial Planning Law and Land Use on FBiH level]. Službene novine FBiH br. 02/06, 72/07, 32/08, 4/10, 13/10 and 45/10

Službene novine Federacije BiH. (2007, October 1). *Zakon o eksproprijaciji FBiH* [Expropriation Law]. Službene novine FBiH br. 70/2007, 36/2010, 25/2012, 8/2015 – Decision of Constitutional Court no. 34/2016

Službene novine grada Sarajeva (1976, September 30). Odluka o generalnim tehničkim uslovima za projektovanje i građenje stambenih zgrada i stanova [Decision on general technical conditions for design and construction of residential buildings and apartments]. *Službene novine grada Sarajeva* br. 12/76, četvrtak, 30. septembra 1976, (p. 332-337)

Službene novine grada Sarajeva (1990, March 15). *Urbanistički plan grada Sarajeva za urbano područje Sarajevo (Stari Grad, Centar, Novo Sarajevo, Novi*

Grad, Ilidža i Vogošća) za period od 1986. do 2015. godine [The City of Sarajevo Land-use Plan for the urban territory of Sarajevo (Stari Grad, Centar, Novo Sarajevo, Novi Grad, Ilidža i Vogošća) for the period 1986 – 2015]. Sarajevo Službene novine Kantona Sarajevo br. 4/90

Službene novine Kantona Sarajevo. (1996, March 11). *Ustav Kantona Sarajevo* [Sarajevo Canton Consitution]. Službene novine Kantona Sarajevo br. 1/96, 2/96, 3/96, 16/97, 14/00, 4/01, 28/04, 6/13 i 31/17. https://skupstina.ks.gov.ba/content/ustav-kantona-sarajevo

Službene novine Kantona Sarajevo. (1999, March 11). *Urbanistički plan grada Sarajeva za urbano područje Sarajevo (Stari Grad, Centar, Novo Sarajevo, Novi Grad, Ilidža i Vogošća) za period od 1986. do 2015. godine - prečišćeni tekst* [The City of Sarajevo Land-use Plan for the urban territory of Sarajevo (Stari Grad, Centar, Novo Sarajevo, Novi Grad, Ilidža i Vogošća) for the period 1986 – 2015]. Sarajevo Službene novine Kantona Sarajevo br. 5/99

Službene novine Kantona Sarajevo. (1999, July 13). *Zakon o prostornom uređenju* [Spatial Plannnig Law]. Sarajevo Službene novine Kantona Sarajevo br. 13/99 and 19/99

Službene novine Kantona Sarajevo. (2000, October 24). *Zakon o lokalnoj samoupravi* [Law on local self – government]. Službene novine Kantona Sarajevo br. 22/00

Službene novine Kantona Sarajevo. (2005, March 10). *Zakon o prostornom uređenju.* [Spatial Plannnig Law], Sarajevo Službene novine Kantona Sarajevo br. 7/05

Službene novine Kantona Sarajevo. (2006, February 16). *Odluka o legalizaciji građevina izgrađenih bez odobrenja za građenje i građevina privremenog karaktera* [Decision on Legalization of buildings constructed without building permit and temporary buildings was adopted]. Službene novine Kantona Sarajevo br. 6/06, 18/07, 18/08, 35/12, 51/15

Službene novine Kantona Sarajevo. (2017, June 22). *Zakon o prostornom uređenju* [Spatial Planning Law]. Službene novine Kantona Sarajevo br. 24/17, 1/18

Službene novine Kantona Sarajevo. (2017). *Prostorni plan Kantona Sarajevo za period od 2003 - 2023. godine* [Canton Sarajevo Spatial Plan for the period 2003-2023]. Službene novine Kantona Sarajevo br. 26/06, 4/11 i 22/17

Službene novine Kantona Sarajevo. (2017, August 17). *Rješenje o formiranju savjeta gradonačelnika grada sarajeva za urbanizam, ekologiju i estetsko uređenje grada* [Decision on creating Sarajevo City Mayor's Advisory Council for Urban planning, Ecology and Design]. Službene novine Kantona Sarajevo br. 32/17

Službeni dio narodnog jedinstva. (1932, February 17). *Građevinski zakon* [Construction Law]. 17.II. XV.14 /3/-12, služ.dio (ćir.). Beograd: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1932, February 27). *Uredba kojom se određuju gradovi (varoši) i varošice (trgovišta) na koje će se primjeniti prvi dio građevinskog zakona* [Ordinance determining the cities (towns) and small towns (markets) to which the first part of the Construction law shall apply]. 27.II, XV, 17 /5/-6 , služ.dio (ćir.). Sarajevo: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1932, September 21). *Pravilnik o izradi regulacionih planova* [Code on drafting of regulatory plans]. 21. septembar 1932., Sarajevo: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1932, September 24). *Opšta uputstva za izradu Uredbe o izvođenju regulacionog plana i građevinskog pravilnika* [General guidelines for developing the Decree on implementation of regulatory plan and building code]. 24. IX, XV, 78, /1/-14, ćir. Beograd: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1933, January 21). *Pravilnik o udaljenosti građevina u gradovima i varošicama od osobenih zgrada drugih prostorija* [Code on distances between buildings and private houses and other spaces in cities and towns]. 21.1.XVI, 6/1/-3, ćir. Sarajevo: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1933, September 16). *Pravilnik o građevinskim zonama u gradovima.* [Code on building zones in cities]. 16.IX, XVI, 74, 3 (lat.). Beograd: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1936, January 29). *Građevinski pravilnik.* [Building Code]. 29.I, XIX, 9, /3/-18, služ.dio (ćir.). Beograd: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1936, July 8). *Pravilnik o obimu i razgraničenju građevinskih radnja.* [Code on size and demarcation of construction works]. 8.VII.XIX.55.11-13, služ.dio (ćir.). Beograd: Narodno jedinstvo

Službeni dio narodnog jedinstva. (1938, April 20). *Pravilnik o naknadi, doprinosu i taksi po §123-125 Građevinskog zakona.* [Code on compensation, contribution, and tax according to §123-125 of the Construction Law]. 20.IV, XXI, 32, 6, služ.dio (ćir.). Beograd: Narodno jedinstvo

Službeni glasnik sreza Sarajevo. (1957, July 1). *Odluka o građenju* [Construction Decision]. Sarajevo: Službeni glasnik sreza Sarajevo, str. 244

Službeni list RBiH (1994, September 16). *Zakon o prostornom uređenju* [Spatial Plannnig Law]. Službeni list RBiH br. 25/94

Službeni list SRBiH. (1974, May 23). *Zakon o prostornom uređenju* [Spatial Plannnig Law]. Sarajevo: Novinsko-izdavačka organizacija Službeni list SRBiH. br. 13/74, 34/86, 9/87, 23/88, 24/89, 10/90, 14/90, 15/90 i 14/91 i Službeni list RBiH 25/94

Službeni list SRBiH. (1986, February 26). *Prostorni plan grada Sarajevo za period od 1986 do 2000. odnosno 2015. godine. Društveni plan grada Sarajevo za period od 1986 do 1990. 1.4. Bespravna stambena izgradnja* [Spatial Plan of the city of Sarajevo for the period 1986 until 2000/2015, Social plan of the city of Sarajevo for the period 1986 until 1990, 1.4. Informal settlements]. Sarajevo: Novinsko-izdavačka organizacija Službeni list SRBiH

Spasojević, B. (1988). *Arhitektura stambenih palata austrougarskog perioda u Sarajevu* [Architecture of residential buildings in Austro - Hungarian period in Sarajevo]. Sarajevo: Svjetlost OOUR Zavod za udžbenike i nastavna sredstva

Swiss Planning Association. (2016). Land as a scarce resource – the Swiss planning system and the spatial challenges [Unpublished presentation]. 10th Annual Conference of the International Academic Association on Planning, Law, and Property Rights, 2016, Bern, Switzerland

Tamborino, R. (1998). Haussmann e il piano per una capitale moderna [Haussmann and plan for the modern capital]. *URBANISTICA*, No.111, p. 116

Taubman, I. (1948). *Sarajevo i njegov uređajni plan* [Sarajevo and its regulatory plan]. Pregled, (p. 115-127)

Taubman, I. (1964). *Neki urbanistički aspekti regionalizacije u ekonomskom razvoju Bosne i Hercegovine* [Some urban aspects of regionalisation in economy development of Bosnia and Herzegovina]. Ekonomski Institut Univerziteta u Sarajevu, Sarajevo, 1964

UN. (1992). *Agenda 21, Report of the United Nations Conference on Environment and Development.* Rio de Janeiro, 3-14 June 1992, United Nations publication, E.93.I.8 and corrigenda. [Online] Available at: Agenda 21.pdf (un.org) [Accessed November 13, 2021]. Agenda 21, 1992, UNCED

UN. (2000). General Assembly resolution 55/2: United Nations *Millennium Declaration.* United Nations General Assembly, September 18, 2000, General Assembly Fifty fifth session, Security Council Fiftieth year, Agenda item 60 (b)

UN General Assembly Security Council. (1995). *General Framework Agreement for Peace in Bosnia and Herzegovina*. [Online] Available at: https://peacemaker.un.org/sites/peacemaker.un.org/files/BA_951121_DaytonAgreement.pdf [Accessed February 24, 2019], United Nations General Assembly Security Council, Fiftieth session, November 30,1995, Agenda item 28

Urbanistički zavod grada Sarajeva. (1960). *Program za Generalni urbanistički plan* [Program for the General Land-use Plan, Urban Institute of the City of Sarajevo]. Knjiga 1. Sarajevo: Urbanistički zavod Grada Sarajeva

Urbanistički zavod grada Sarajeva. (1961). Sarajevo – Program za Generalni urbanistički plan (skraćena verzija) [Program for the General Land-use Plan (abbreviated version)]. Sarajevo: Urbanistički zavod Grada Sarajeva

Verschaffel, B. (2013). Reading Rem Koolhaas. *Architectural Histories*, Vol. 1, Issue 1, Art.12, (p.1)

Vitruvius, M. (1914). *The Ten Books on Architecture.* London: Harvard University Press

Vlada Kantona Sarajevo. (2018). *Izvještaj o rješavanju upravnih stvari u upravnom postupku za period 01.01. 2018. – 31.12.2018. godine* [Report on number of cases of administrative appeals delivered to the Cantonal Ministry for Spatial Planning, Building and Environmental protection in the period 01.01. 2018. – 31.12.2018]. [Online] Available at: webpage https://skupstina.ks.gov.ba/). [Accessed March 24, 2020]

Vlada Kantona Sarajevo. (2019). *Izvještaj o rješavanju upravnih stvari u upravnom postupku za period 01.01. 2019. – 31.12.2019. godine* [Report on number of cases of administrative appeals delivered to the Cantonal Ministry for Spatial Planning, Building and Environmental protection in the period 01.01. 2019. – 31.12.2019]. [Online] Available at: webpage https://skupstina.ks.gov.ba/). [Accessed March 24, 2020]

WBO – Bauordnung für Wien. Gesamte Rechtsvorschrift für Bauordnung für Wien. https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrW&Gesetzesnummer=20000006&FassungVom=2023-05-28

Wittkower, R. (1988). *Architectural Principles in the Age of Humanism*. New York: Academy Editions, London/St. Martin`s press

Zbornik zakona, naredbi i propisa za Bosnu i Hercegovinu. (1878 – 1880). *Gragjevinski red za Zemaljski glavni grad Sarajevo - 1880* [Building Order/Code for the State Capital Sarajevo - 1880]. I. Odsjek. Opće odredbe - Politička administracija. Sarajevo: Carski i kraljevski sud i Zemaljska štamparija

Zbornik zakona, naredbi i propisa za Bosnu i Hercegovinu. (1893). *Gragjevinski red - 1893*. [Building Code - 1893]. Komad XVII, 75. I. Odsjek. Opće odredbe, odobren Previšnjim rješenjem od 23. jula 1893, a proglašen naredbom zemaljske vlade za Bosnu i Hercegovinu od 5. avgusta 1893 br. 76.174

Zavod za planiranje razvoja grada Sarajeva. (1985). *Nacrt Prostornog plana Grada Sarajeva za period od 1986. do 2000. odnosno 2015. godine* [Draft of the Spatial Plan of the City of Sarajevo for the period 1986 - 2000/2015, Institute for City of Sarajevo Planning, p.26]. Zavod za planiranje razvoja grada Sarajeva, str.26, Sarajevo

Zavod za planiranje razvoja grada Sarajeva. (1999). *Program razvoja gradskog jezgra Sarajeva* [Program of the Sarajevo Urban Core Area Development]. Vlada Kantona Sarajevo, Ministarstvo prostornog uređenja, stambenih i komunalnih poslova, Sarajevo, Arch Design, 2001

Zelenika, R. (2000). *Metodologija i tehnologija izrade znanstvenog i stručnog djela* [Methodology and technology of creating scientific and professional work, University of Rijeka, Faculty of Economics and Business, and Faculty of Economics of the University of Ljubljana]. Rijeka: Ekonomski fakultet sveučilišta u Rijeci I Ekonomska fakulteta v Ljubljani

Zurich Building Code. Version according to RRB of 11 May 2016 (OS 72, 60; OJ 2016-05-27). In force since 1 March 2017). https://www.zh.ch/de/politik-staat/gesetze-beschluesse/gesetzessammlung/zhlex-ls/erlass-700_2-1977_06_22-1978_07_01-105.html

In most European countries, spatial and land-use planning documentation (formal and informal) and building codes complement each other. The city of Sarajevo, however, has not had a building code over the last eight decades. The author, with many years of professional experience as a planner in Sarajevo, shows how this has affected the spatial planning system in all its segments, including through a weak building permission procedure. She compares Sarajevo's legal framework to the planning systems and building regulations of Slovenia, Vienna, Zurich, and Paris. Arguing that a building code is an inseparable part of land-use management and land-use planning implementation system as well as of sustainable, effective urban politics, the author proposes a model for a new building code and a comprehensive planning system for the Canton of Sarajevo.

With implications for spatial planning beyond Bosnia and Herzegovina, the book is highly relevant for planning policy and administration, but also for the scientific community: It addresses spatial and urban planners, jurists, architects, sociologists, and historians of architecture in Continental and South-East Europe.

ISBN 978-3-85448-056-3

9 783854 480563

www.tuwien.at/academicpress