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DAMAGE ASSESSMENT OF ANTAKYA (ANTIOCH) URBAN SITE AFTER THE KAHRAMANMARAŞ EARTHQUAKE

M.Sc. Thesis by

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DAMAGE ASSESSMENT OF ANTAKYA (ANTIOCH) URBAN SITE AFTER THE KAHRAMANMARAŞ EARTHQUAKE

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2025, 8 January **Esra KOYUNCU**

DAMAGE ASSESSMENT OF ANTAKYA (ANTIOCH) URBAN SITE AFTER THE KAHRAMANMARAŞ EARTHQUAKE

ABSTRACT

Throughout history, many cultural heritage buildings worldwide have been severely damaged by earthquakes and even faced the risk of destruction. On February 6, 2023, two earthquakes with a magnitude of 7.7, centered in Pazarcık, and 7.6 in Elbistan, occurred in Kahramanmaraş Province. This study examines the registered buildings in the Antakya urban site area after these earthquakes and provides recommendations within the framework of a holistic conservation approach and disaster risk management. Within the scope of the study, 250 registered buildings in the area were examined, and their post-earthquake conditions were assessed. Due to its historical development and strategic location, Antioch has hosted many civilizations throughout history, and it reflects the cultural diversity and layered history shaped by these civilizations' various religious, ethnic, and cultural influences. Therefore, it is considered that this study, which will contribute to the preservation and restoration of the city's identity, is of great importance.

Keywords: Antakya (Antioch) urban site, Kahramanmaraş earthquakes, damage assessment, holistic approach, conservation, disaster risk management.

KAHRAMANMARAŞ DEPREMİ SONRASI ANTAKYA KENTSEL SİT ALANININ HASAR TESPİTİ

ÖZ

Tarih boyunca, dünya genelindeki birçok kültürel miras yapısı depremler nedeniyle ciddi şekilde zarar görmüş ve hatta yıkılma riskiyle karşı karşıya kalmıştır. 6 Şubat 2023 tarihinde Kahramanmaraş ilinde merkez üssü Pazarcık olan 7.7 büyüklüğünde ve Elbistan olan 7.6 büyüklüğünde iki deprem meydana gelmiştir. Bu çalışma, söz konusu depremler sonrasında Antakya kentsel sit alanındaki tescilli yapıları incelemekte ve bütüncül koruma yaklaşımı ve afet risk yönetimi çerçevesinde öneriler sunmaktadır. Çalışma kapsamında, bölgedeki 250 tescilli yapı incelenmiş ve bu yapıların deprem sonrası durumları değerlendirilmiştir. Tarihsel gelişimi ve stratejik konumu nedeniyle Antakya, tarih boyunca birçok medeniyete ev sahipliği yapmış olup, bu medeniyetlerin farklı dini, etnik ve kültürel etkileriyle şekillenen kültürel çeşitliliği ve katmanlı tarihini yansıtmaktadır. Dolayısıyla kentin kimliğinin korunması ve yeniden ayağa kaldırılmasına katkı sağlayacak olan bu çalışmanın büyük bir öneme sahip olduğu düşünülmektedir.

Anahtar Kelimeler: Antakya (Antioch) kentsel sit alanı, Kahramanmaraş depremleri, hasar tespiti, bütüncül yaklaşım, koruma, afet risk yönetimi.

CONTENTS

M.Sc. THESIS EXAMINATION RESULT FORM ii
ETHICAL DECLARATION iii
ACKNOWLEDGMENTS iv
ABSTRACT v
ÖZ vi
NOMENCLATURE x
LIST OF TABLES xi
LIST OF FIGURES xv

CHAPTER 1 - INTRODUCTION 1
1.1 Statement of the Problem 2
1.2 Research Purpose and Scope 3
1.3 Research Method and Material 4
1.4 Constraints 5
1.5 Literature Review 6

CHAPTER 2 - THE CITY OF ANTIOCH 12
2.1 Physical, Historical and Cultural Structure of Antioch 12
2.1.1 Geographical features of the Antioch 12
2.1.2 Brief History of the Antioch 14
2.1.3 Transportation and Economy of the Antioch 15
2.1.4 Ethnic Diversity of the Antioch 17
2.2 Urban development of the city 18
2.2.1 Prehistoric Period 18
2.2.2 Hellenistic Period (300 B.C.- 64 A.D.) 19
2.2.3 Roman Period (64 A.D. – 395 A.D.) 22
2.4.4 Byzantine Period (395-638) 25
2.2.5 Arab Period (638-968) and II. Byzantine Period (968-1085) 26
2.2.6 Seljuk Period (1085-1098) and Crusaders Period (1098-1268) 27
2.2.7 Mamluk Period (1268-1516) 28
2.2.8 Ottoman Period (1516-1918) 29

2.2.9 French Mandate Period (1918-1938) and Turkish Republic Period (since 1939) 33
2.3 Assesment of Chapter 36

CHAPTER 3 - ANTIOCH URBAN SITE 38
3.1 The Historical Urban Fabric and Architectural Features of Antakya 38
3.1.1 Neighborhoods, Squares and Streets 41
3.1.2 Traditional Antakya Houses 46
3.1.3 Commercial and Housing-Commercial Buildings 52
3.1.4 Monumental Buildings 55
3.2 Antioch Zoning Plans 58
3.2.1 1932 Danger Plan of Antioch 58
3.2.2 1948 and 1957 Zoning Plan of Antioch 59
3.2.3 1978 The Historical Site Special Development Plan of Antioch 61
3.2.4 1987 Conservation Zoning Plan of Antioch 62
3.2.5 2009 Conservation Revision Zoning Plan of Antioch 64
3.3 Assesment of Chapter 65

CHAPTER 4 - FIELD STUDY IN ANTIOCH URBAN SITE AFTER THE 6 FEBRUARY 2023 KAHRAMANMARAŞ EARTHQUAKES 68
4.1 Türkiye as an Earthquake Country and 6 February 2023 Kahramanmaraş (Pazarcık and Elbistan) Earthquakes 68
4.2 Earthquake History of Antakya 73
4.3 The Effect of 6 February 2023 Kahramanmaraş Earthquakes on Cultural Heritage 73
4.4 Antioch Urban Site Field Study 76
4.5 Damage Assessment Criteria of Field Study 84
4.6 Evaluation of Field Studies 93
4.6.1 Post-Earthquake Situation of the 1st group buildings 96
4.6.2 Post-Earthquake Situation of the 2nd group buildings 98
4.7 Assesment of Chapter 103

CHAPTER 5 - A HOLISTIC APPROACH TO THE RECOVERY PROCESS OF ANTAKYA URBAN SITE AFTER THE KAHRAMANMARAŞ EARTHQUAKES 105
5.1 The Definition and Importance of Heritage 105

5.2 Development of Conservation Concept 106
5.3 International organizations, guidelines and regulations 108
5.4 Suggestions for disaster risk management and conservation in Antakya Urban Site 117
5.5 Evaluation of the conservation works carried out in Antakya before and after the earthquake 129
5.5.1. Conservation works carried out in Antakya before the earthquake ... 129
5.5.2. Conservation works carried out in Antakya after the earthquake 133
5.6 Assesment of Chapter 137

CHAPTER 6 - CONCLUSION 141
REFERENCES 147
APPENDICES 168
Appendix A – 1st Group Buildings Identified in the Field Study 169
Appendix B – 2nd Group Buildings Identified in the Field Study 213
CURRICULUM VITAE 226

NOMENCLATURE

Acronyms

AFAD	Disaster and Emergency Management Presidency
CCI	Canadian Conservation Institute
EAF	East Anatolian Fault
EAFS	East Anatolian Fault System
DRM	Disaster Risk Management
ICBS	The International Committee of the Blue Shield
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
ICOM	International Council of Museums
ICOMOS	International Council on Monuments and Sites
ICORP	International Scientific Committee on Risk Preparedness
NAF	North Anatolian Fault
RCE	The Netherlands Cultural Heritage Agency
SBB	Presidency of the Republic of Türkiye, Presidency of Strategy and Budget
TCIP	Turkish Catastrophe Insurance Pool
UNESCO	United Nations Educational, Scientific and Cultural Organization

LIST OF TABLES

Table 1.1 Main sources written in the history of the field. 6

Table 1.1 (continued): Main sources written in the history of the field. 7

Table 1.2 Current studies in the topic. 7

Table 1.2 (continued): Current studies in the topic. 8

Table 1.3 Some current and basic studies related to the research topic. 8

Table 1.3 (continued): Some current and basic studies related to the research topic. . 9

Table 4.1 Masonry bearing walls damage classification (I Level GNDT- Ministry of Labour, Civil Protection- form). Source: [73]. 85

Table 4.2 Damage classification used in Marche Region after 1997 Umbria-Marche. Source: [73]. 86

Table 4.3 Damage classification in 1998 Pollino. Source: (Goretti & Di Pasquale, 2002). 86

Table 4.4 The revised version of TCIP Damage Assessment System (Revised by the Author). 87

Table 4.5 The damage degree of the 1st group buildings (monuments). Source: Prepared by the author. 88

Table 4.6 Damage degree of the 2nd group buildings (houses and commercial buildings). Source: Prepared by the author. 89

Table 4.6 (continued): Damage degree of the 2nd group buildings (houses and commercial buildings). Source: Prepared by the author. 90

Table 4.6 (continued): Damage degree of the 2nd group buildings (houses and commercial buildings). Source: Prepared by the author. 91

Table 4.6 (continued): Damage degree of the 2nd group buildings (houses and commercial buildings). Source: Prepared by the author. 92

Table 5.1 International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author. 114

Table 5.1 (continued): International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author. 115

Table 5.1 (continued): International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author. 116

Table 5.1 (continued): International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author. 117

Table 6.1 Summary of damage status of the 1st group buildings. Source: Prepared by the author. 144

Table 6.1 (continued): Summary of damage status of the 1st group buildings. Source: Prepared by the author. 144

Table 6.2 Summary of damage status of the 2 nd group buildings. Source: Prepared by the author. 145

Table 6.2 (continued): Summary of damage status of the 2 nd group buildings. Source: Prepared by the author. 145

Table A.1 Buildings Identified in the Field Study (Prepared by author). 169

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 170

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 171

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 172

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 173

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 174

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 175

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 176

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 177

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 178

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 179

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 180

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 181

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 182

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 183

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 184

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 185

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 186

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 187
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 188
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 189
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 190
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 191
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 192
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 193
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 194
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 195
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 196
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 197
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 198
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 199
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 200
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 201
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 202
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 203
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 204
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 205
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 206

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 207
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 208
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 209
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 210
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 211
Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author). 212
Table B.1 Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author). 213

LIST OF FIGURES

Figure 1.1 Workflow diagram for the study. 5

Figure 2.1 Location, limits and districts of Hatay Province. Source: Map taken from GeographyMap site, edited by the author. Source: [6]. 12

Figure 2.2 Asi River, Amanos Mountains and Amik Plain. Source: [10]. 13

Figure 2.3 Silk cocoons producers in Antakya. Source: Library of congress. 16

Figure 2.4 Ethnic settlements in Antioch. Source: [26]. 18

Figure 2.5 Map of Tel Tainat and Tel Atçana (Alalah) mounds. Source: [22]. 19

Figure 2.6 The walls of Antakya, the expansion area bordered by the Asi River. Source: [28]. 20

Figure 2.7 Grid plan applied when the city was founded. Source: [20]. 21

Figure 2.8 Hellenistic street layout in the north-east of today's historic city centre. Source: [24]. 21

Figure 2.9 6 February earthquakes before the Saint Pierre Church Memorial Museum. Source: Google Maps. 23

Figure 2.10 The settlement areas of the Seleucis and Roman periods. Source: [24].24

Figure 2.11 The settlement areas of the Seleucis, Roman and Byzantine periods. Source: [24]. 26

Figure 2.12 The city walls reinforced during the II. Byzantine Period. Source: [20]. 27

Figure 2.13 The waterwheel, the mosque, and houses banks of the Asi River during the Ottoman period. Source: [31]. 30

Figure 2.14 View of Antioch across the Orontes between 1784 and 1787. Source: [20]. 32

Figure 2.15 Narrow, winding and organic streets and dead ends in the Ottoman period. Source: [28]. 33

Figure 2.16 The city plan of Antakya from 1936. In this map, it can be seen that Kurtuluş Avenue has not yet been opened. Source: [28]. 34

Figure 2.17 The Old Roman Bridge during the French Mandate period. Source: [31]. 35

Figure 3.1 Spatial development of the city throughout history. Source: edit by author from [32]. 39

Figure 3.2 Satellite photograph of Antakya dated 2019, representation of New Antakya and the Old Antakya city texture. Source: edit by author from [32]. 40

Figure 3.3 The historical fabric of Antakya. Source: [18]. 41

Figure 3.4 Communities in Antioch. Source: edit by author from [33]. 42

Figure 3.5 The Saray Street. Source: [36]. 43

Figure 3.6 Narrow Antioch streets and drain (oluk-arık) sample. Source: [38]..... 45

Figure 3.7 Example of kabaltı(vaulted passage) in historical Antakya houses. Source: Google Maps. 45

Figure 3.8 Example of a dead-end street (zokmak) in historical Antioch houses. Source: [39]. 46

Figure 3.9 Courtyard house plan scheme in ancient times. Source: [2]. 47

Figure 3.10 Asi River and Antakya villas in 1922. Source: [40]. 47

Figure 3.11 Traditional Antakya houses. Source: [38]. 48

Figure 3.12 Courtyard and landscaping of traditional Antakya Houses. Source: [38]. 48

Figure 3.13 Plan typology of the Traditional Antakya House. Source: The plan diagram was created by the author using the base in [2]. 49

Figure 3.14 Example of stairs in the courtyard in traditional Antakya houses. Source: [40]. 50

Figure 3.15 Courtyard facades and bird boxes (kuş takaları) in traditional Antakya houses. Source: [18]. *(Note: This building was used as a Museum of Medicinal and Aromatic Plants before the earthquake.)* 51

Figure 3.16 An old photograph from the historical Antakya bazaar. Source: [18]... 54

Figure 3.17 A view from Uzun Bazaar Street (left). A pool and fountain in the bazaar area (right). Source: [42]. 54

Figure 3.18 The existing street network of Antakya in 1932 (left), The proposed street network (right). Source: [24]..... 59

Figure 3.19 1/5000 scale Land Use decisions on the urban development plan of Antakya. Source: [24]. 61

Figure 3.20 1987 Conservation zoning plan site boundaries. Source: [24]. 63

Figure 3.21 2009 Conservation Revision Zoning Plan of Antioch, 2009. Source: Prepared by the author. 65

Figure 4.1 Türkiye Earthquake Map. Source: edit by author from [56]. 69

Figure 4.2 Map of Eastern Anatolia Fault Line. Source: [57]..... 70

Figure 4.3 Destruction after the Kahramanmaraş earthquakes. Source: [55]. 71

Figure 4.4 11 provinces adversely affected by the 6 February Kahramanmaraş Earthquakes. Source: [57]. 72

Figure 4.5 A shot from the huge debris in Antakya after the Kahramanmaraş earthquakes. Source: [58]. 72

Figure 4.6 After the 6 February Kahramanmaras Earthquakes, the situation in Antakya. Source: [60]. 75

Figure 4.7 Approach maps to Antakya urban site area. Source: The maps was created by the author using Google Earth. 77

Figure 4.8 462 registered buildings located within the urban protected area. (In addition to registered buildings, suggestion registered buildings and traditional buildings compatible with the environment are also shown on the map). Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive. 78

Figure 4.9 Map of 250 registered buildings examined in the field. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive..... 80

Figure 4.10 Building groups analysed in the field 81

Figure 4.11 Building types analysed in the field..... 81

Figure 4.12 Type of buildings examined in the field. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive..... 82

Figure 4.13 Detailed location map of the buildings examined in the Antakya urban site area. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive..... 83

Figure 4.14 Collapsed among 250 registered buildings examined in the field. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive. 95

Figure 4.15 1st group buildings damage level. 96

Figure 4.16 2nd group building damage level. 96

Figure 4.17 Damage condition of the housing. 98

Figure 4.18 Situation of B32-Housing *(Liwan Deluxe Otel)* pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author. 99

Figure 4.19 Situation of B95-Bekir Çelik House pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author. 99

Figure 4.20 Situation of B132-Yiğitbaş House pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author. 100

Figure 4.21 Situation of B147-Housing *(Hatay Expo Evi)* pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author. 100

Figure 4.22 Damage condition of the commercial. 101

Figure 4.23 Situation of B14-Commercial next to Orthodox Church pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author. 101

Figure 4.24 Damage condition of the housing-commercial. 102

Figure 4.25 Situation of B34-Housing-Commercial pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author. 102

Figure 4.26 Situation of B138-Housing-Commercial (Francıs Otel) pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author. 102

Figure 5.1 The cultural heritage risk management cycle. Source: [102]. 120
Figure 5.2 Disaster risk management cycle. Source: [108]..... 121
Figure 5.3 Disaster cycle. Source: [109]. 124
Figure 5.4 6 February earthquake before the Long Bazaar Restoration. Source: [115]. 130
Figure 5.5 After the 6 February earthquake, the Long Bazaar. Source: By author. 130
Figure 5.6 6 February earthquake before the Kurtuluş Street Restoration. Source: [116]. 131
Figure 5.7 After the 6 February earthquake, the Kurtuluş Street. Source: By author. 132

CHAPTER 1

INTRODUCTION

Historic buildings are among the most significant cultural heritage elements that reflect the cultural identity, history, and collective memory of a society. These structures, with their aesthetic, architectural, engineering, cultural, and technological features, document the era in which they were built and convey important information to future generations. Therefore, the preservation of historic buildings is a cultural, social, and national responsibility. Antakya, with its long historical background, is one of Türkiye's important cities, rich in historical, geographical, religious, ethnic, social, cultural, and architectural heritage. This city, which embraces tolerance and multiculturalism, has hosted many civilizations, and despite earthquakes, it has managed to carry the traces of these civilizations into the present day. The structures in the urban protected areas, in particular, play a significant role in shaping the city's identity. The mosques, churches, synagogues, historic bazaars, inns, baths, tombs, soap factories, squares, fountains, public buildings, and civil architecture in this area offer a unique architectural richness.

Natural disasters, which cause profound losses and collapses in societal, environmental, physical, psychological, and economic structures, also threaten the physical integrity of architectural buildings, leading to significant destruction. Earthquakes, in particular, pose a constant threat to cities located in active seismic regions, such as Antakya, where historic buildings can be severely affected by such disasters. Throughout history, Antakya has been shaken by many devastating earthquakes, the most recent of which occurred on February 6, 2023. With a history spanning approximately 2,500 years, Antakya added valuable data to its urban memory, but it suffered significant material and emotional losses in the February 6, 2023 Kahramanmaraş earthquakes. Among the most significant of these losses is its cultural and architectural heritage. Many historic buildings of Antakya's rich cultural heritage were either completely destroyed or severely damaged. To protect cultural heritage from the devastating effects of earthquakes and minimize the damage, there

is a need for scientifically grounded, accurate methods, interdisciplinary coordinated efforts, and consistent, systematic studies.

1.1 Statement of the Problem

A city is not only defined by its built environment. The abstract values reflected in the city's physical structure (its spiritual, customary, moral, and cultural infrastructure) are also of great importance in terms of the city's uniqueness. Antakya, which has hosted many civilizations and been shaped by various religious, ethnic, and cultural diversities, has gradually developed its own distinct architecture [1] With the architectural heritage predominantly influenced by Roman, Byzantine, Arab, and Ottoman civilizations, it has always maintained its Eastern character [2]. Cultural heritages are rapidly disappearing due to changing social and economic life, rapid and unconscious urbanization, population growth, natural disasters, and technological advancements. Furthermore, the lack of correct preservation policies and practices has accelerated this process of loss. Changes and degradations in Antakya's urban identity are clearly influenced by population growth, technological developments, differences in lifestyles, natural disasters, and rapid urbanization, with the impact of natural disasters being particularly pronounced.

Located at the southwestern edge where the Orontes River meets Mount Habib-i Neccar, Antakya lies at the northern tip of the Jordan Rift Valley, an active fault zone, in an area where various tectonic movements are felt. Throughout history, the city has witnessed earthquakes of varying magnitudes, with some being relatively slight and some extremely powerful and destructive [3]. The city has witnessed numerous devastating earthquakes throughout history, resulting in significant losses both in terms of buildings and lives. As in the past, such destructions are still occurring today. A concrete example of this is the devastation caused by the Kahramanmaraş earthquakes, which affected eleven provinces in Türkiye and Syria. The scale and extensive impact of the earthquake widened the scope of the destruction, leading to a major humanitarian crisis.

Due to the prioritization of human life, widespread chaos across the country, and difficulties in accessing basic needs, immediate intervention and rapid preservation measures for these structures could not be implemented after the earthquake.

The February 6 earthquakes caused the destruction of most monumental structures and examples of civil architecture within the Antakya urban site area, resulting in significant damage to the city's historical fabric and identity. One of the primary reasons for this major crisis was the lack of comprehensive and multi-faceted disaster preparedness plans. The absence of necessary preventive measures prior to the disaster, combined with the lack of an effective risk management plan for the preservation of cultural heritage sites, further exacerbated the severity of the crisis. It has been identified that disaster preparedness plans, particularly those involving cultural heritage, lacked a holistic approach, and protection strategies specific to these areas were insufficient. This situation clearly highlights the need for more integrated and comprehensive works, both to mitigate the impacts of natural disasters and to safeguard cultural heritage.

1.2 Research Purpose and Scope

The primary cause of the crisis faced during natural disasters is the lack of comprehensive and multidimensional disaster preparedness plans. It has been identified that these plans are insufficient, especially in incorporating the protection of cultural heritage into large-scale administrative frameworks. During the earthquake, most of the monumental structures and civil architecture within Antakya's urban site area were destroyed, resulting in a significant loss of the city’s identity. The goal of this study is to document, analyze, and assess the current situation and to propose future-oriented solutions aimed at preserving the city’s identity through an integrated conservation approach, with the aim of protecting the cultural heritage of Antakya affected by the earthquake. Additionally, this study aims to serve as a handbook and a resource for future research. Within this framework, a comprehensive thesis study was conducted, encompassing 250 structures located in the urban conservation area of Antakya.

1.3 Research Method and Material

The idea of preserving and revitalizing the remaining urban memory after the earthquake has been a determining factor in conducting a study on this city. In this regard, a literature review and archival research were first conducted on the location and boundaries of the area, its importance, historical development process, cultural and natural assets, as well as the area's natural, physical, social, and economic structure. The most up-to-date Conservation Master Plans for the Antakya (Antioch) Urban Protected Area were accessed (A Proje Architecture Office Archive), and an inventory list of buildings and maps was prepared, collecting data on the architectural features of the buildings. The primary source used during the data collection process was the Cultural Inventory. Subsequently, a field study was conducted between September 8-11, 2023, to assess the condition of the registered buildings in the Antakya Urban Protected Area after the February 6 earthquakes. The field study was carried out as a team effort, with contributions from Assoc. Prof. Dr. Filiz Karakuş and Asst. Prof. Dr. Ekrem Bahadır Çalışkan. The buildings identified in the field were photographed according to their inventory numbers, and their damage status was noted. The necessary notes were made on the zoning plans and maps, and the study was conducted accordingly. After the field study, the notes taken in the field were recorded digitally (CAD/EXCEL/WORD). During this process, maps, photographs, and Google Earth street images were used to clarify the buildings, and a new inventory list was created. In this context, new maps were generated for damage assessment. Additionally, tables and graphs were prepared to present the architectural features of the buildings, comparing their pre- and post-earthquake conditions, and evaluations were made. Based on these evaluations, proposals for the sustainable repair of the city through an integrated conservation approach were presented. The workflow diagram (Figure 1.1) provides an overview of the methodology followed in this study. It outlines each step of the research process in a clear and systematic manner, highlighting the sequence of actions taken to achieve the study's objectives. The diagram visually represents the progression from data collection and analysis to the development of proposals and strategies.

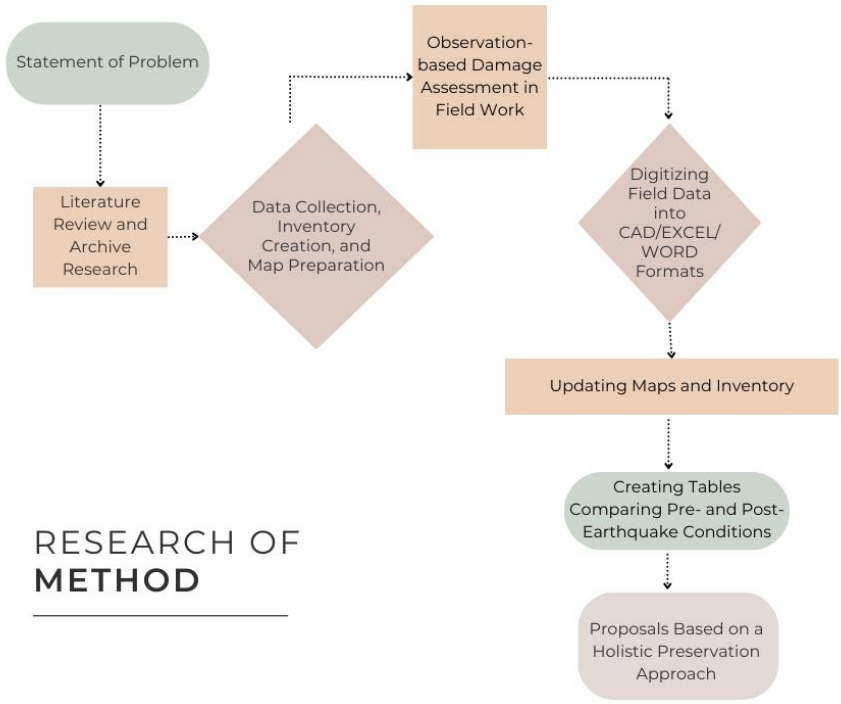

Figure 1.1 Workflow diagram for the study.

1.4 Constraints

Some of the most significant limiting factors encountered in this study include deficiencies in zoning plans, inconsistencies between the zoning plans and building addresses on Google Maps, the extensive destruction that caused streets to disappear and transform into large vacant lots, and the difficulty in accessing buildings due to debris. These factors have hindered the accurate identification of some of the buildings listed in the inventory. In particular, inconsistencies between the zoning plans and local maps have created difficulties in determining the exact locations of existing buildings. Additionally, due to widespread destruction, some streets have completely disappeared, replaced by vast empty spaces, which has further complicated the identification process. In areas where debris has not yet been cleared, physical access to buildings has been significantly obstructed, preventing the damage assessment of certain structures. Additionally, for certain areas with two or more structures within a courtyard, access to the courtyard could not be provided, so only the parts of the buildings facing the street could be identified, while the other sections remained inaccessible.

1.5 Literature Review

Although Türkiye is in a seismic belt, studies on earthquakes that have occurred throughout history are limited. Some historical sources provide information on the history of the Antakya and its earthquakes. There are main sources written for certain historical periods in the region. Some of these works, which were the main sources, were written during the Byzantine period. During the first dominion period of the Byzantine Empire, historians provided detailed information on the city of Antakya. While these sources describe the earthquakes that occurred in Antakya and its surroundings, they also provide important information about the formation of earthquakes and their effects on the city. Religious, social, political, intellectual, and economic issues are mentioned in the information given about the history of the city until the 6th century, religious, social, political, intellectual and economic issues are mentioned. At the same time, the topography of the city, the physical and psychological effects of the earthquake, and data on the post-earthquake relief activities of the emperors are reflected from different perspectives [3]. The most significant of these sources are also presented in (Table 1.1).

Table 1.1 Main sources written in the history of the field.

Main Sources Written in the History of the Field
• *Works of the preacher Libanios (4th century)* • *Emperor Julianus' Misopogon (4th century)* • *Speeches by St. John Chrysostomos* • *Chronographia by Ioannes Malalas (6th century)* • *Church Historian Evagrios Scholastikus's History of the Church (6th century)* • *About Buildings by Procopius* •
The information about the period when the city was under Arab domination is not as detailed as the Byzantine main sources. These sources provide information about the topography of the city during this period and the earthquakes that occurred in the city. Examples of these sources are [3]: • *10th-century historian Mas'udi* • *10th-century geographers Istahri and Ibn Hawkal* • *11th-century chronicler John (Yahya) from Antakya* • *12–13th century historian Ibn al-Athir*

Table 1.2 (continued): Main sources written in the history of the field.

Works containing important information about the 11th-century topography of the city during the Crusader period of Antakya are as follows [3]: • *Gesta Francorum et aliorum Hierosolimitanorum (Anonymous work)* • *Archbishop William of Wall* • *Albert from Aachen* • *Chancellor Walter*

Other studies related to the city are presented in table form (Table 1.2), (Table 1.3).

Table 1.3 Current studies in the topic.

Current Studies in the Topic
The most important among these works is Glanville Downey's *"A History of Antioch in Syria from Seleucus to the Arab Conquest (1961)"*. This study is the main secondary source. This study conveys important information about the process from the foundation of the city to the 7th century [3].
The most recent work on Antakya is "*Antioch: A History (2021), a joint work of Andrea U. De Giorgi and A. Asa Eger"*. This study of Antakya is a detailed city biography that describes the historical process from the foundation of the city to the present day. The following works are the joint work of Guidoboni, A. Comastri and G. Traina, which chronologically compile the earthquakes that occurred in the city [3]: • *E. Catalog of Ancient Earthquakes in the Mediterranean Area up to the Tenth Century (1994)* • *Catalog of Earthquakes and Tsunamis in the Mediterranean Area from the Eleventh to the Fifteenth Century (2005).* Another resource on earthquakes is Earthquakes in the Mediterranean and Middle East: A Multidisciplinary Study of Seismicity Up to 1900 (2009) by N. Ambraseys.
One of the main sources used while researching the history of a city is the "Şer'iyye Registers" kept by the judges working in the researched city. These notebooks provide important information in terms of the history of the region [4]. In this context, the following studies are also important: • Bolat, Mahmut, "XVIII Numaralı Antakya Şer'iyye Sicili'nin Transkripsiyon ve Değerlendirilmesi (H. 1239–1242 / M.1823–1827)", Yüksek Lisans Tezi, Kayseri: Erciyes Üniversitesi Sosyal Bilimler Enstitüsü, 2000. • Özdemir, R. (1994). Osmanlı döneminde Antakya'nın fizikî ve demografik yapısı 1709-1860. Belleten, 58(221), 119-158.

Table 1.2 (continued): Current studies in the topic.

Apart from these sources, current archaeological studies also provide important information. Archaeological excavations carried out by Princeton University between 1932-1939 and surface surveys in Antakya, Samandağ and Harbiye are among these studies. The main sources and archaeological data provide us with important clues about religious and public buildings and vital areas destroyed as a result of earthquakes [3]. The doctoral thesis titled *"The Effects Of Earthquakes In Antioch And Its Vicinity Evidence Of Reparation, Rebuilding And Urban Reorganization Between The Fourth And Thirteenth Centuries"* written by Mevlüde Bakır in 2022 is among the most up-to-date and important sources.

Table 1.3 Some current and basic studies related to the research topic.

Some Current and Basic Studies Related to the Research Topic
Arıman, B. (2002). Antakya Kenti tarihi doku içinde tipolojik analiz çalışmaları, Yüksek Lisans Tezi, İstanbul Teknik Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.
Tutar, A. (1997). XX. Yüzyıl Hatay Tarihi ve Günümüz İnanç Coğrafyası, Doktora Tezi, Malatya İnönü Üniversitesi, Sosyal Bilimler Enstitüsü, 1997.
Sahillioğlu, H., (1991). Antakya, İslam Ansiklopedisi, C. 3, 228-232, İstanbul: TDV Yayınları, https://islamansiklopedisi.org.tr/antakya.
Asarcıklı, M. (1989). Antakya Kent Formunu Oluşturan Öğelerin Araştırılıp Değerlendirilmesi. Gazi Üniversitesi Fen Bilimleri Enstitüsü Yüksek Lisans Tezi, Ankara.
Bahadır, G. (2010). Kuruluşundan iv. Yüzyıl'a kadar antakya/antıoch from the foundatıon to the fourth century. Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 7(13), 349-372.
Demir, A. (1996). Çağlar Boyunca Antakya. İstanbul: Akbank Kültür ve Sanat Yayınları.
Şancı, F.(2006). Hatay İlinde Türk Mimarisi 1. Doktora Tezi, Ankara Üniversitesi, Ankara.
Ömeroğlu, C. (2006). Antakya Kentinin Özgünlüğü Ve Günümüz Koruma Sorunlarının Antakya Kentsel Sit Alanında İrdelenmesi, Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü, Ankara.
Rifaioğlu, M. N. (2003). Antakya Eski Kent Dokusunda Gazipaşa Sokağının Mekansal Analizi. *Yüksek LİSans Tezi*. Adana: Çukurova Üniversitesi Fen Bilimleri Enstitüsü.
Rifaioğlu, M. N. (2012, February). An enquiry into the definition of property rights in urban conservation: Antakya (Antioch) from 1929 title deeds and cadastral plans. *Ph.D. Thesis*. Ankara: The Graduate School Of Natural And Applied Sciences Of Middle East Technical University.
Hatay Valiliği. (2011). Hatay kültür envanteri. Ankara: Sistem Ofset.
Kara, A.(2005). 19. yüzyılda bir Osmanlı şehri: ANTAKYA. Hatay: IQ Kültür Sanat Yayınları.
Açıkgöz, Ü. F. (2008). A Case in French Colonial Politics of Architecture and Urbanism: Antioch and Aleandretta During the Mandate. *Ph.D. Thesis*. The Graduate School Of Social Sciences Of Middle East Technical University.
Çelebi, E., Dağlı, Y., & Kahraman, S. A. (2006). *Günümüz Türkçesiyle Evliya Çelebi Seyahatnamesi: Konya-Kayseri-Antakya-Şam-Urfa-Maraş-Sivas-Gazze-Sofya-Edirne.* Yapı Kredi Yayınları.
Çelebi, Y., & Günaltay, Ş. (1982). Bir grup eski Antakya evi. Türk Etnografya Dergisi, (67), 159-201.

Table 1.3 (continued): Some current and basic studies related to the research topic.

Temiz, F. (2002). XIX Yüzyıl ve sonrasında Antakya‟nın Kentsel Mekan Oluşumunda Meydana Gelen Değişiklikler Ve Kurtuluş Caddesi. Yüzüncü Yıl Üniversitesi, Doktora Tezi, Van.
Kocaoğlu, B. (2016). Antakya Tarihi Kent Dokusunun Kentsel Tasarım Açısından İrdelenmesi ve Bir Örnek Çalışma, Yüksek Lisans Tezi, Bartın Üniversitesi Fen Bilimleri Enstitüsü, Bartın.
Ömeroğlu, C. (2006). *Antakya Kentinin Özgünlüğü Ve Günümüz Koruma Sorunlarının Antakya Kentsel Sit Alanında İrdelenmesi,* Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü, Ankara.
Aslanoğlu, M. (2023). Sürdürülebilir Korumanın Afet Risklerini Önlemedeki Rolü Antakya Koruma Alanı Örneği. Bozok Üniversitesi, Yüksek Lisans Tezi, Yozgat.
Tekin, M. (2000). Hatay Tarihi. Ankara: Atatürk Kültür Merkezi Başkanlığı Yayınları.

Following the 6 February 2023 Kahramanmaraş Earthquakes, various contemporary studies have been conducted on the historic city center of Antakya across multiple disciplines and topics. Some of these studies are supported by field research, providing fundamental data. Additionally, various official institutions and organizations (e.g., the Republic of Türkiye Presidency of Strategy and Budget, AFAD) have published reports and guidelines, particularly focusing on the preservation of the historic environment, in collaboration with entities such as METU, the Chamber of City Planners (TMMOB), the Chamber of Architects (TMMOB), and ICOMOS. These efforts can be summarized as follows:

- Naycı, N. (2024). 06 Şubat 2023 Kahramanmaraş Depremleri Ardından Riskli Tarihi Yapıları Değerlendirme Yöntemleri Üzerine Bir İnceleme. Sketch: Journal of City and Regional Planning, 5(02), 54-75.

This study discusses the preservation of historical structures against earthquakes and the necessity of risk analysis in this context. It also emphasizes the importance of adopting a holistic approach to the conservation of historical structures.

- TAÇDAM (2023). Antakya’nın Çok Katmanlı Kültürel Mirasının Deprem Sonrası Belgelenmesi, Hasar Tespiti ve Değerlendirilmesi. Ankara: Middle East Technical University. (in Turkish).

This report, prepared three months after the earthquake, addresses the documentation and assessment of the damage to Antakya's historical and cultural heritage. It aims to provide guidance on post-disaster cultural heritage management and adopts an approach aligned with international conservation standards.

- The report titled "Analysis of Planning in Cities Experiencing Destruction: Hatay (Antakya-Defne)," published by the Chamber of City Planners (TMMOB), provides a comprehensive evaluation of the significant losses experienced by Antakya following the earthquake and the subsequent reconstruction process from an urban planning perspective. The report thoroughly discusses both the assessment of the current situation and the measures needed to prevent similar tragedies in the future, along with the methods that should be adopted during the reconstruction process. It emphasizes the necessity of a holistic, scientific, and sustainable planning approach to create more resilient cities.

- Soyluk, A., & Demircan, B. (2023). An architectural review of the behavior of historical masonry minarets under earthquake load on mosque samples damaged in the 6 February Kahramanmaraş Earthquake. Journal of Architectural Sciences and Applications, 8, 329-354.

This study was conducted to assess the damage sustained by historic masonry minarets during earthquakes. Specifically, examples of masonry minarets in the provinces of Adıyaman, Hatay, Şanlıurfa, Kahramanmaraş, Malatya, Gaziantep, and Diyarbakır, which were significantly affected by the earthquakes centered in Kahramanmaraş on February 6, 2023, were examined. Additionally, several mosques located within the Antakya urban archaeological site were included in this study.

- Soyluk, A. & Köse, Z. (2024). Disaster risk reduction plans in historical areas and the Kahramanmaras Earthquake of 6 February 2023: The case of Kurtulus Avenue. Journal of Architectural Sciences and Applications, 9 (Special Issue), 64-83.DOI: https://doi.org/10.30785/mbud.1318866

This study presents urban-scale recommendations for the preservation of cultural heritage following the damage sustained by the cultural assets on Antakya's Kurtuluş Avenue in the aftermath of the February 6, 2023, Kahramanmaraş Earthquakes.

The report published by the ICOMOS Türkiye National Committee on March 1, 2023, evaluates the impact of earthquakes on historic structures and cultural heritage and proposes various strategies and methods for the preservation of these assets. The

primary source used in this thesis is the *Hatay Cultural Inventory*, published by the Hatay Governorship in 2011. The data on the historical structures for which damage assessments were conducted was obtained from this source.

The most recent studies related to the research topic were published on January 7, 2025. These studies, conducted by Ümit Gökhan Çiçek and Güliz Bilgin Altınöz, were presented at the panel titled *"Cultural Heritage and Disasters: Lessons from the Past / Insights for the Future,"* held at the Kubbealtı of the METU Department of Architecture.

CHAPTER 2

THE CITY OF ANTIOCH

2.1 Physical, Historical and Cultural Structure of Antioch

2.1.1 Geographical features of the Antioch

Located in the easternmost part of the Mediterranean and bordering Syria, Hatay is surrounded by Adana, Osmaniye, and Gaziantep to the north; Syria to the east and south; and the Gulf of Iskenderun and the Mediterranean Sea to the west. It has a surface area of 5,403 km² and an elevation of approximately 80 meters above sea level. The city is situated between 35° 52’ and 37° 04’ north latitudes and 35° 40’ and 36° 35’ east longitudes (Figure 2.1) [5].



Figure 2.1 Location, limits and districts of Hatay Province. Source: Map taken from GeographyMap site, edited by the author. Source: [6].

Approximately 46% of Hatay's land area is covered by mountains, 34% by plains, and 20% by plateaus. The Asi River is the most significant watercourse in Hatay. Other important rivers in the region include the Karasu, Büyükkaraçay, Küçükkaraçay, and Afrin streams [7]**.** The Asi River holds significant importance in the region’s geography. Originating in Lebanon, the Asi River, known as the Orontes in antiquity,

flows through the center of Antakya [5]. The Orontes River (Asi River) forms a delta to the south of Samandağ in the Hatay province and flows into the Mediterranean Sea (Figure 2.2). The river has a total length of approximately 560 km, with the majority of its course located within Syrian territory. The portion within Türkiye spans about 95 km. The region experiences a Mediterranean climate, characterized by hot, dry summers and mild, rainy winters. The dominant vegetation consists of forests and maquis shrubs [8]. Annual average temperatures range between 15.1°C and 20°C, while the annual total precipitation varies between 562.2 mm and 1,216.3 mm. The highest rainfall occurs during winter, while summer experiences the least precipitation [7].

Antakya is situated along the banks of the Asi River, at the foothills of Mount Habib-i Neccar. To the southwest of Antakya lie the Kel Mountains (Jebel Aqra-Casius); to the north are the Amanos Mountains (Nur Mountains), and to the east is Mount Habib-i Neccar (Silpius) [9]. Stretching northeast of Antakya, the Amik Plain boasts high agricultural potential and represents the largest expanse of flatlands in the region (Figure 2.2) [2].

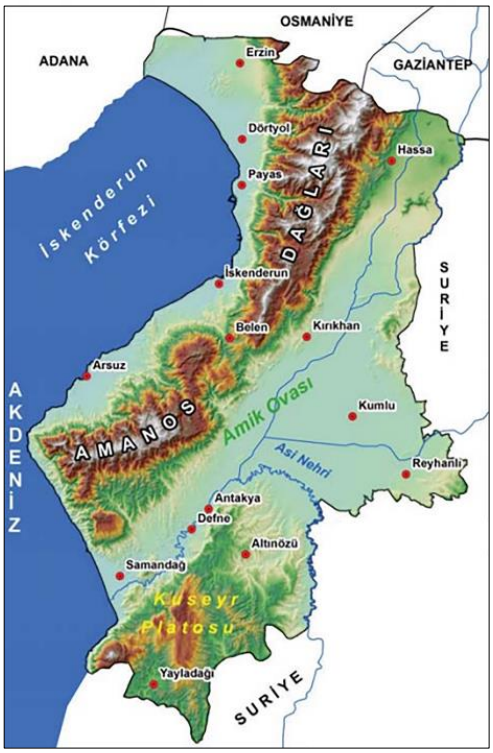

Figure 2.2 Asi River, Amanos Mountains and Amik Plain. Source: [10].

2.1.2 Brief History of the Antioch

Antakya is a cosmopolitan city that has been ruled by numerous civilizations, empires, and states, each leaving behind its unique cultural heritage. Due to its rich cultural legacy spanning from the prehistoric era to the present, Antakya holds significant importance both globally and within Türkiye [2]. Historically, it was one of the three great metropolises of the ancient world and earned the title "Queen of the East." Even today, Antakya serves as an example to the world with its cultural diversity, lifestyle, and spirit of tolerance [1]. In antiquity, Antakya was a major cultural and civilizational center in the Eastern Mediterranean region. It was also the birthplace of Christianity as an organized religion and the site where it began to universalize. Before the advent of Christianity, two dominant religious beliefs existed in Antakya: paganism and Judaism [11].

Following the spread of Christianity, Islamic conquests led to the gradual introduction and prevalence of Islam in the region. The coexistence of Judaism, Christianity, Islam, and other faiths further enriched the city’s cultural mosaic. The spread of Christianity in Antakya, following its emergence in Jerusalem, established the city as a pilgrimage center for Christians. Its role as a key hub for the exchange of knowledge between Constantinople and the East, as well as its function as a base for preparation and operations during military campaigns, further enhanced Antakya's historical significance. Additionally, due to its strategic location, the city frequently faced foreign invasions throughout its history [12, 3].

Founded in 300 BCE by Seleucus I during the Hellenistic period, Antioch has been under the control of numerous civilizations throughout history, experiencing constant changes in governance during this time. In 64 BCE, the city became an important center of the Roman Empire, later falling under the control of Muslim Arabs, the Byzantine Empire, the Seljuk Empire, the Crusaders, and the Mamluks [13]. In 1515, Antakya came under the rule of the Ottoman Empire and was occupied by the French during World War I. In 1920, it was placed under French Mandate administration and was officially incorporated into Türkiye on June 23, 1938 [14].

The origin of the city's name dates back to its founding. Seleucus I named the city "Antiochia" in honor of his father, Antiochus [13]. During the reign of Antiochus IV, it was also called "Tetropolis" due to its division into four quarters. Islamic sources mention that Antakya is referred to in the Qur'an with the names "Karye" and "Medine." Additionally, it has been called "the city of Habib-i Neccar" after the Antakya-born saint Habib-i Neccar [15]. In antiquity, the city was predominantly known as Antiochia, which later evolved into "Antâkiye" during the Islamic period and has continued in use to the present day [16]. According to Evliya Çelebi, Antakya was such an ancient and beautiful city that it had distinct names in various languages, including "Entakiyye, Antakıyya, Ayn-ı Takıyye, and Antekiye," with the most popular being "Antakıyya" and "Entakiyye" [17]. Throughout history, the city was commonly referred to as Antakya. However, during the French Mandate period, it was renamed "Hatay." In 1936, Mustafa Kemal Atatürk assigned this name in reference to the ancient "Kingdom of Hatena," which once ruled in the region [5, 13]

2.1.3 Transportation and Economy of the Antioch

Antakya has maintained its significance as an important settlement from its foundation to the present day, which has greatly influenced its transportation dynamics. In addition to being located at a crossroads point connecting Anatolia to the Middle East, its proximity to the Yayladağı and Cilvegözü border gates and the seaport of Iskenderun has enhanced the strategic importance of the region [18]. Along with land transportation, Antakya has played a key role in maritime transportation, preserving its value in this regard from antiquity to the present. Over time, it has evolved into a vital connection hub between different civilizations.

Antakya is situated along the route of the Royal Road, which stretched from the city of Sardis to the Persian city of Susa in the 5th century BCE. The fact that Hellenistic settlements in Antakya were established in valleys and at the foothills along the Royal Road indicates that transportation played a crucial role in the city's development [19, 12]. One of the key factors that Seleucus I Nicator considered when founding the city was transportation. He considered the Asi River as both a transportation route and a strategic element for defense, which is why he established the city on its banks [20]. During the Ottoman period, the city's value further increased, as Antakya was

considered the safest and shortest route for European merchants traveling to Aleppo [21]. Throughout the French Mandate period and the early years of the Turkish Republic, the transportation network in Antakya, both in the city center and on the periphery, continued to develop. In addition to improvements to existing roads, key new streets acting as the city's spine were constructed.

Antakya, with its vast and fertile lands, has made progress in its economy based on various sectors. The valley floor of the Lower Asi River is covered with vegetable and fruit orchards [14]. Key agricultural products in Antakya include cotton, grains, tobacco, and olives. The city is well-known for its famous laurel soap factories, olive oil production, and cotton yarn industry. Furthermore, Antakya is also rich in citrus fruits. Among the city's exports, citrus fruits and olive oil are the most prominent [22].

Art and artistic products vary across eras and societies. In Antakya and its surrounding areas, green glass art has developed significantly. Ancient glass is melted and recycled using the reclaiming method for production. Silk production and weaving (Figure 2.3) are practiced in Antakya, although they are more widespread in Samandağ and Harbiye. Another notable craft in Antakya is soap-making [18].

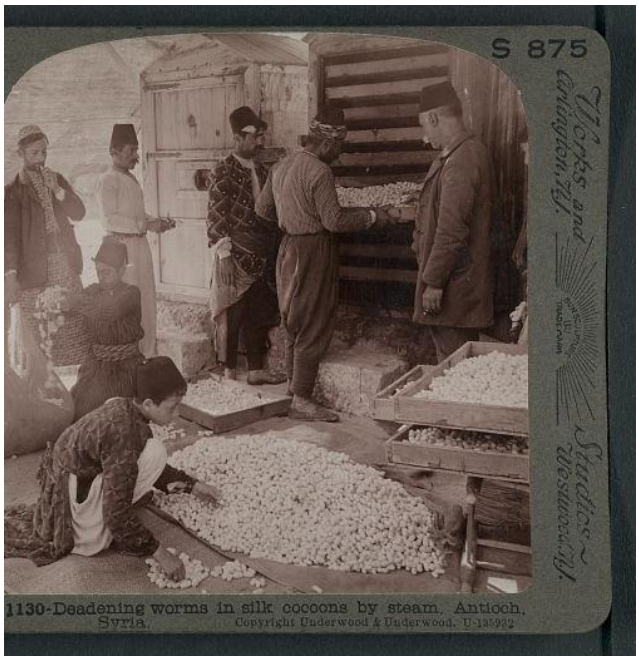

Figure 2.3 Silk cocoons producers in Antakya. Source: Library of congress.

2.1.4 Ethnic Diversity of the Antioch

Antakya is one of Türkiye's most ethnically diverse and multicultural cities. During the Hellenistic period, the city had a cosmopolitan structure, consisting of Jews, Macedonians, Greeks, Cretans, Cypriots, and people from the surrounding areas of present-day Syria [20]. The ethnic diversity and multiculturalism in the city have persisted from ancient times to the present day. Various religious, sectarian, and ethnic groups, such as Muslim Turks, Christian Arabs, Greek and Armenian Christians, Jews, Syriacs, and Alevites, continue to live in harmony with one another [21]. This characteristic of Antakya stands out as a significant element that strengthens the city's identity.

The demographic structure of present-day Antakya has been largely shaped during the Ottoman period. During this time, additional small ethnic groups joined the existing ones, further enriching the cultural and ethnic diversity of the city. For centuries, Antakya and its surrounding areas have been home to various ethnic and religious communities living together in harmony, without conflict, while influencing one another and contributing to each other's transformation and change.

The formation of the neighborhood identities in Antakya, which began during the Ottoman period and continued to evolve until the earthquake of February 6, was significantly influenced by its ethnic composition and cultural diversity. Christian communities lived around Saray Street; Sunni Muslims resided in the market (souk) area and on Mount Habib-i Neccar, while Alevis were located on the outskirts of the city center. Due to their lower income levels and predominance in manual labor, Alevis tended to settle in the peripheral regions of the city (Figure 2.4) [23, 24].

The ethnic and religious diversity in Antakya does not create sharp boundaries between groups. In other words, alongside the various distinguishing characteristics of each group, communities also share common aspects. Among these communities, Jews are an exception, as their interactions with other groups are largely limited to commercial activities. Furthermore, in both Antakya and Hatay, the existence of a sharing-based culture, where common points are emphasized, plays a significant role in the peaceful coexistence of different ethnic and religious groups for centuries [25].

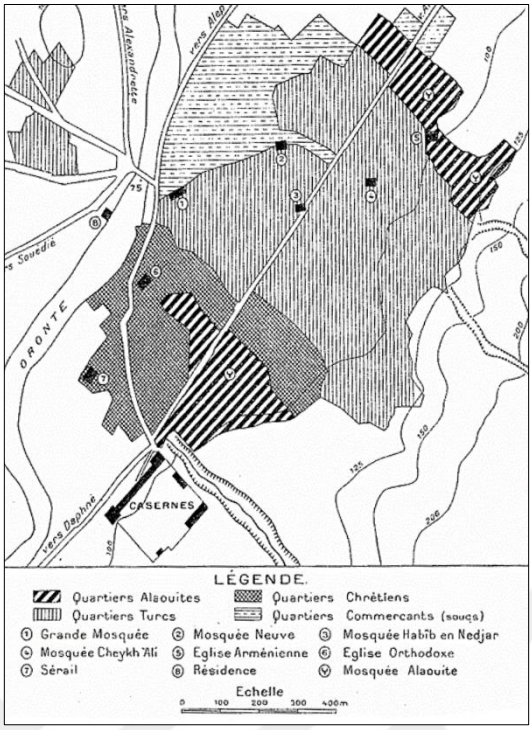

Figure 2.4 Ethnic settlements in Antioch. Source: [26].

2.2 Urban development of the city

2.2.1 Prehistoric Period

Although Antakya is geographically located in the Eastern Mediterranean region, it carries the characteristic features of Northern Syria in terms of history and culture. In this regard, it developed separately from Anatolia. Throughout history, this region has continuously served as a bridge between Mesopotamia, Egypt, and Anatolia in the fields of culture and art, and as a result of these interactions, it has evolved into a culturally blended area [27].

In ancient times, particularly during the Roman and Byzantine empires, Antakya stood out as one of the largest cities in the Mediterranean basin. It was an important center for trade and industry, known for hosting Olympic games, its crowded population, and its immense 12 km-long city walls [16].

According to surface surveys and excavation studies conducted in the region, the settlements in the area date back to 100,000 BC. Antakya has been an attractive

settlement throughout history due to its location at the crossroads of routes connecting Anatolia to Syria and the Middle East, its proximity to the most accessible ports linking Mesopotamia to the Mediterranean, its favorable climate and vegetation, and the fertile plains irrigated by the Asi River. As a result, it has been a vibrant city that has experienced intense migration. The excavations conducted in the early 20th century at the mounds of Çatalhöyük, Tel Tainat, and Tel Atçana (Alalah) (Figure 2.5), located near the Amik Plain, revealed courtyarded, rectangular mudbrick houses and palace remains, indicating that the region was a dynamic and significant settlement area. Recent findings of carved stones near Sungur Village, dating back 250,000 years, show that the history of the city extends as far back as 250,000 BC [13].

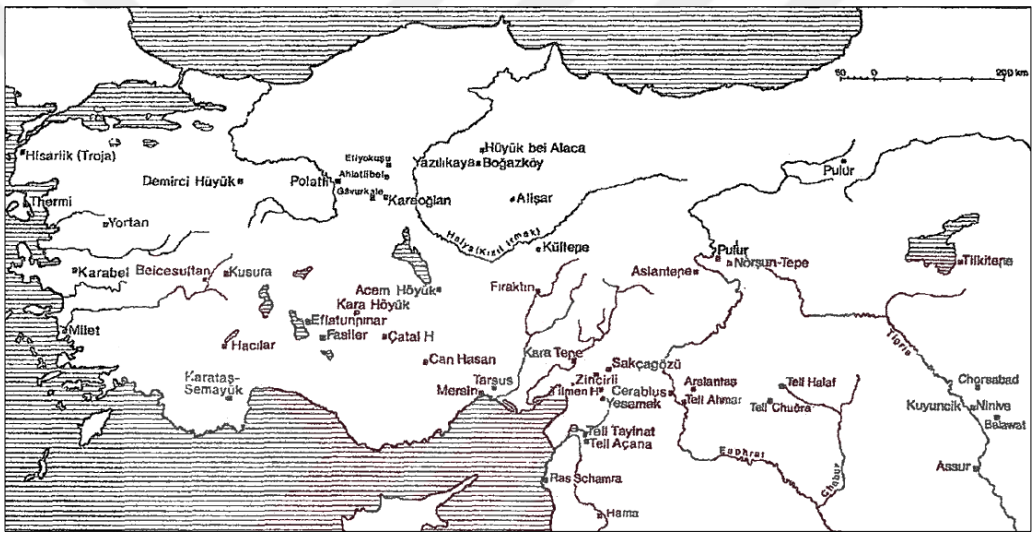

Figure 2.5 Map of Tel Tainat and Tel Atçana (Alalah) mounds. Source: [22].

2.2.2 Hellenistic Period (300 B.C.- 64 A.D.)

The founding of Antakya dates back to the time of Alexander the Great. However, the city was actually founded and named by one of Alexander's generals, Seleucus I Nicator [16]. The city is located between the western slope of Mount Habibinaccar (Silpius) and the Asi (Orontes) River. Until two centuries ago, the city was surrounded by a wall, but today only some remnants of it can be found on the slopes of Mount Silpius (Figure 2.6). After Alexander's death, the empire was divided among his generals, and as a result, Syria, Mesopotamia, and all Eastern territories fell under the rule of Seleucus I Nicator. The newly established empire was named the Seleucid

Empire. Due to the need for access to the sea, the city of Antakya was founded in 300 BC, and the region became the center of the empire [27].

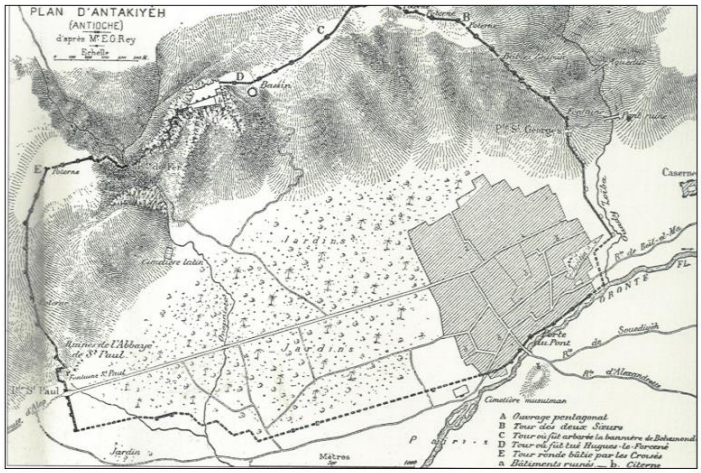

Figure 2.6 The walls of Antakya, the expansion area bordered by the Asi River. Source: [28].

Seleucus, who founded Antioch in honor of his father Antiochus, established at least 16 other cities named Antioch, which is why this particular city on the Orontes River is referred to as Antioch on the Orontes or Antioch near Daphne. The city of Antakya, developed in a long rectangular shape between the mountain and the river, initially consisted of two neighborhoods. These neighborhoods were inhabited by Macedonians, Greeks, Jews, and the local population. Over time, the city expanded, and third and fourth neighborhoods were established. The city's major growth occurred during the reign of Antiochus IV (175–163 BC), when the fourth neighborhood was founded. As a result, Antioch became a tetropolis (a city with four neighborhoods). Due to Antiochus IV's youth spent as a hostage in Rome, Roman traditions and customs gained prominence in Antioch. During this period, water was brought into the city from Daphne through aqueducts [16].

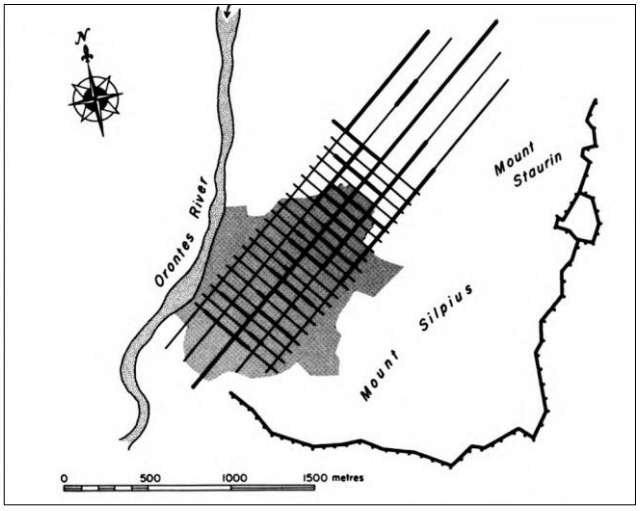

Figure 2.7 Grid plan applied when the city was founded. Source: [20].

When the city of Antakya was founded, the urban planning system implemented followed the typical "Grid Plan" of the Hellenistic era (Figure 2.7). According to this plan, streets were constructed at right angles, and buildings were placed on the blocks between the streets. The direction of the streets was determined based on the prevailing wind, running from the northeast to the southwest, ensuring the city had good ventilation [20]. Although the urban layout applied during the city's foundation has not been well preserved over time, traces of it can still be seen in some of the streets today (Figure 2.8) [24].

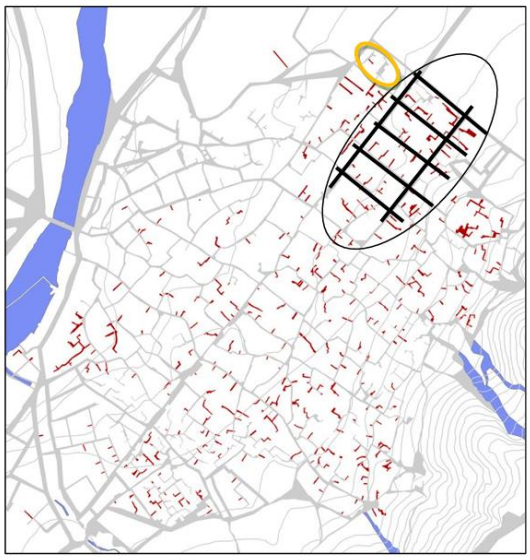

Figure 2.8 Hellenistic street layout in the north-east of today's historic city centre. Source: [24].

The city of Antakya, as the capital of the Seleucid Empire, was adorned with magnificent structures. It was decorated with aqueducts, temples, fruit orchards, theaters, inns, public baths, marble streets, and various sculptures. During this period, daily life, needs, and aesthetic values played a significant role in the placement of buildings in the city [2]. After the basic elements of the city (such as streets and roads) were laid out, monumental public structures like the agora, temples, and the bouleuterion (city council) were constructed [28]. The agora and other important civic buildings were located around the agora in the city center (today's Ulu Mosque area). During this time, no special palace for the king was built; instead, a large house served this purpose. Villas were located at the slopes of Mount Silpius, which physically limited the city's settlement. Stone buildings, arched entrances, and mostly two-story garden houses are architectural features that reflect this period [2].

In Hellenistic culture, the mutual interaction between the West and the East led to the emergence of a new culture, where the Western characteristics gradually weakened and changed as one moved further east [19]. Antakya, located at one of the first crossroads between East and West, carried Western cultural influences, but its dominant character was distinctly Eastern. This blend of Eastern and Western influences contributed to Antakya's unique cultural identity, where Western elements were present but the city's overall essence remained rooted in Eastern traditions.

Antakya, both a center of trade and entertainment, flourished with such vibrancy that its fame spread across the world. The city became cosmopolitan due to the influx of people from various races and distant lands. However, the intense uprisings, continuous wars, and power struggles during this period weakened the Seleucid Empire. As the empire faltered, the rising power of the Romans led to their conquest of the city in 64 BCE, marking the end of the Seleucid Empire's dominance [27].

2.2.3 Roman Period (64 A.D. – 395 A.D.)

After approximately 250 years of Hellenistic rule, Roman Emperor Pompey defeated Tigranes' army in 64 BCE and incorporated Antakya into the Roman Empire. Emperor Pompey was the first to mint bronze coins in Antakya, marking the city as a "Metropolis." Thus, the official Roman Empire period in Antakya began in 64 BCE

[29]. One of the most significant events during the Roman period in Antakya was the arrival of Christian missionaries (apostles), who began spreading Christianity from here to the Roman Empire. In the first half of the 1st century CE, Christianity emerged, and Antakya became the first place outside Jerusalem where it was spread [29].

Antakya, an important religious, cultural, and commercial center of the ancient world, had trade connections with the Roman Empire, which facilitated the spread of Christianity from Antakya to the Roman world. It was one of the three key Christian centers (Antakya, Rome, and Alexandria) where the Apostles spread Christianity. The name "Christian" was first given to the followers of Christ here, and the construction of the first church began in Antakya. The church, known today as Saint Pierre Church (Figure 2.9), played a key role in the growth of the Christian population by welcoming people of all races in a Roman world where Paganism was prevalent [29]. It is believed that Apostle Peter delivered his first sermon in a cave church built on the slopes of Mount Habib-i Neccar in Antakya. As a result, it was declared a Christian pilgrimage site by the papacy in 1963 [14]. This church was not adversely affected by the recent February 6 earthquake.



Figure 2.9 6 February earthquakes before the Saint Pierre Church Memorial Museum. Source: Google Maps.

During this period, Antakya became one of the largest centers of the Roman Empire after Rome itself [27]. Antakya was designated as the capital of the Roman province of Syria, and during this period, the city's boundaries were expanded through the urban

development activities carried out. Various structures were built, including an amphitheater, circus, hippodrome, government buildings, and city walls. Although the city experienced destructive earthquakes from time to time during this period, restoration work was carried out by the Roman emperors [16].

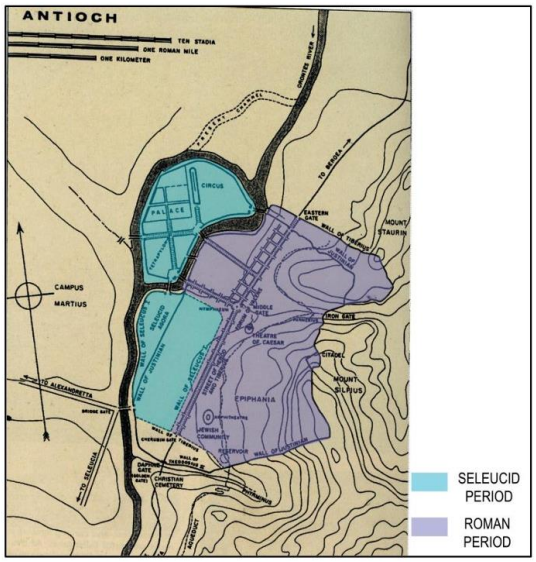

Figure 2.10 The settlement areas of the Seleucis and Roman periods. Source: [24].

One of the most important construction activities of this period was the construction of the famous "Colonnaded Street" (Herod Street), which runs across the city and is 2,956 meters long. The neighborhoods that developed on both sides of the street and the surrounding commercial buildings expanded the central area of the city (Figure 2.10) [28]. According to sources, street lighting was first implemented on this street in the world. The city's first drainage system was also built during the Roman period, extending from Silpius (Habibi Neccar) Mountain to the city. One of the significant landmarks from the Roman period in the city is the exquisite mosaics [2]. These mosaics were displayed in the Hatay Archaeology Museum, which held the world's largest mosaic collection until the earthquake on February 6. The museum building was damaged in the earthquake and has been temporarily closed. The Ministry of Culture and Tourism is currently conducting restoration work on the damaged artifacts and the museum building.

Unfortunately, due to the earthquakes, subsequent fires, and the wars that the city has endured, very few structures from Antakya's glorious ancient history remain to this day. Many valuable buildings have been lost over time [2]. Between 256 and 260 AD, the city was captured by the Sassanids, and its population was deported to Iran. Later, the Emir of Palmyra, Odenatus (Üzeyne), retook the city [16]. During the Persian invasion in 256 AD, the urban environment was severely damaged. Although the city was rebuilt, it suffered serious damage due to subsequent disasters, including earthquakes and fires in the early 6th century [28]. In 395 AD, the city came under Byzantine control.

2.4.4 Byzantine Period (395-638)

In 396 AD, the city came under Byzantine (Eastern Roman) control. Antakya holds a very important place in Christian history. Its proximity to Jerusalem, being a large and wealthy settlement, and its location at the crossroads of routes leading to Anatolia and Greece made it a key center for the apostles sent from Jerusalem. They gathered here and spread Christianity to other regions. After the destruction of Jerusalem, Antakya continued to be a central hub for Christianity, with various Christian sects emerging. In the 4th century, it became a metropolis, and by the 5th century, it had become a patriarchal center. Even under the Byzantines, Antakya retained its significance, and during this period, it was used as a base for the Iranian campaigns [16]. The city’s architectural development continued during this time (Figure 2.11). In this context, the city walls surrounding the ancient city were extended, and at the southern end facing Defne, a gate known as the Golden Gate was built. Additionally, several aqueducts, a water reservoir, a stoa, several basilicas, and a church dedicated to the Bishop of Antakya were constructed [24].

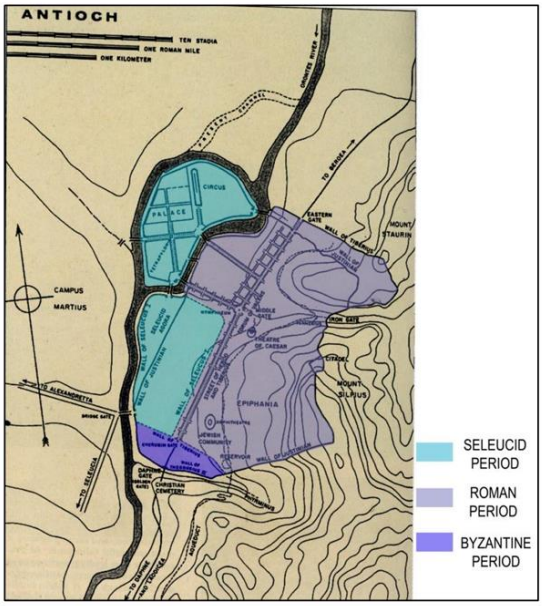

Figure 2.11 The settlement areas of the Seleucis, Roman and Byzantine periods. Source: [24].

In 540, the Iranians captured the city, looted it, and set it on fire, forcing its population to migrate to Iran. Between 611 and 628, the city was once again under Sassanid occupation. After the Iranians withdrew, Antakya came back under Byzantine control, but this rule was short-lived, as the city was eventually captured by Muslim Arabs. From this point on, the city began to lose its ancient character and entered a new era [16].

During the Byzantine period, Antakya was one of the most vibrant cities in Anatolia, maintaining its status as a large and lively city for centuries. The city frequently changed hands between the Arabs and the Byzantines. Even when under Muslim control, a large Christian community continued to exist in Antakya [19].

2.2.5 Arab Period (638-968) and II. Byzantine Period (968-1085)

After the Byzantine defeat at the Battle of Yarmouk in 636, the city of Antakya was besieged by the Islamic forces under the command of Abu Ubayda ibn al-Jarrah. The siege lasted for a long period, and to avoid further damage to the city, no combat occurred. The city surrendered in 638 under the condition of paying the designated jizya tax. Following the conquest, the population of the city decreased, and many of its inhabitants left. During this period, efforts were made to resettle and repopulate the

city. Under Islamic rule, Antakya became a frontier city (serhad city), serving as a military base and a defense point to stop potential attacks [16]. The year 638 marked the beginning of a new era for Antakya, as the cultural influences of Rome and Byzantium, shaped by Christianity, met the Islamic civilization, laying the foundation for the city's transformation into its current Islamic character [2].

During the Abbasid period, Antakya, which was the center of Cilicia, came under the rule of Ahmed ibn Tulun in 877, after the Abbasid Caliphate began to decline. It was later controlled by the Ikhshidids and the Hamdanids. Antakya remained under Muslim rule for nearly three centuries before coming back under Byzantine control from 968 to 1084 [16]. During this more than a century-long Byzantine period, Antakya was revived with efforts to restore it to its former glory. Significant efforts were made to restore the city's walls and gates during this period (Figure 2.12) [1].



Figure 2.12 The city walls reinforced during the II. Byzantine Period. Source: [20].

2.2.6 Seljuk Period (1085-1098) and Crusaders Period (1098-1268)

In 1085, Antakya came under the control of the Seljuk Empire. During this period, churches were converted into mosques, and a hammam was built. A destructive earthquake in 1091 caused the city's walls and houses to collapse. Under the rule of the Seljuks, traces of Turkish culture and civilization began to be observed in Antakya [24]. In 1098, the city was surrendered to the Crusaders, and the population was massacred. During the Crusader period, Antakya developed to the north, much like it

had in ancient times. Described as a "water city" in both Arab and Western sources, Antakya played an important role in trade with the West. The city was not attacked during the Mongol invasions and was taken over by the Mamluks in 1268 [16].

During the Crusader period, the Principality of Antioch was established, which significantly increased the city's political and religious importance. As trade became a strategic political tool for the Crusaders, the city's economic prosperity grew. Antakya became a center for silk production and fine textiles, and these products were exported to Europe. The city experienced two major earthquakes in 1157 and 1169, which caused significant damage. During this period, the city's walls were rebuilt and repaired [24].

2.2.7 Mamluk Period (1268-1516)

On May 18, 1268, the conquest of Antioch by Mamluk Sultan Baybars marked the end of 170 years of Crusader rule. At the time of the conquest, the city was looted, set on fire, and heavily damaged. This extensive destruction may have been aimed at diminishing the image of Antioch in the Christian world. From the ancient Antioch, only remnants of the city walls, the St. Pierre Cave Church, and the Charnion relief sculpture remain. Sultan Baybars later had the city rebuilt. The Cindi Hamam, which remained until the February 6, 2023, earthquake, was constructed by Sultan Baybars. Another urban development activity carried out during this period was the construction of mosques. The transformation of the Habib Neccar Mosque, originally a Roman temple and later a church, into a mosque occurred during the Mamluk period [16, 1].

During Baybars' reign, Turkmen people were settled in Antioch, strengthening the city's Turkish identity. The integration of the Turkmen population into the city influenced both the social structure and cultural dynamics, with traces of Turkish culture becoming more evident. Historical sources describe Mamluk-era Antioch as a city rich in water resources and green spaces, with a dense population and notable for its aesthetically pleasing buildings [13]. During this period, Antioch gradually began to lose the religious, economic, and political prominence it had held during the Christian era. European merchants shifted their trade to Aleppo, and the center of Orthodox churches in Syria was moved to Damascus [24].

Antakya, despite losing much of its former significance during the Mamluk period, continued to thrive as a key stop along important trade routes due to its strategic location. This allowed the city to maintain economic vitality, with commercial activities continuing to flourish. During this period, the city's entire bazaar, which was located within the city walls, contained 10 separate markets and 318 shops. These shops were situated within nine caravanserai buildings, illustrating the extent of the trade networks and the importance of Antioch's economy during the Mamluk era [15]. This situation demonstrates how well-developed the trade network in Antioch was during the Mamluk period and highlights that the city's economic structure continued to maintain its significance.

2.2.8 Ottoman Period (1516-1918)

Antakya, which came under Ottoman control during Yavuz Sultan Selim's Egyptian Campaign in 1516, became a district center of the Aleppo province in the Ottoman Empire [16]. During this period, Antakya lost its former vibrancy and transformed into a smaller city focused on arts and trade [27]. In this era, there was no need for a public building or a main square in the city's center. The function of a square was taken over by the easily accessible mosques, which served as forums. The Ulucami and Habib-i Neccar Mosque became two key centers of social life in Antakya. Commercial structures such as the bedesten, inns, and bazaars in the commercial district emerged as defining elements in the city's organization and became its dynamic features. In contrast to the bustling commercial area, residential neighborhoods had limited commercial activity, and a more tranquil atmosphere prevailed [13]. In the 16th century, the number of neighborhoods in Antakya ranged from 22 to 24. All of these neighborhoods were located within the city walls, and there were few neighborhoods outside the walls until the mid-19th century [16].

During this period, the scope of construction activities was expanded, and various structures such as inns, baths, mosques, caravanserais, bedestens, mills, and bridges were built. The construction of water mills was particularly important because these mills were used to transport water to the city. The water for the baths was also supplied in this manner (Figure 2.13) [24]. In the growth of Ottoman cities and the construction of buildings, foundations played a significant role, as the funding for construction

activities and the maintenance of the buildings after completion were provided by these foundations [13]. Especially, the "külliyes" established and managed through foundations were of great importance in terms of their intended purposes and functions within the urban fabric [12]. Külliyes are social centers composed of a mosque at the core, surrounded by buildings serving various functions. Most of the mosques built in Antakya during this period were constructed as part of külliyes [30].

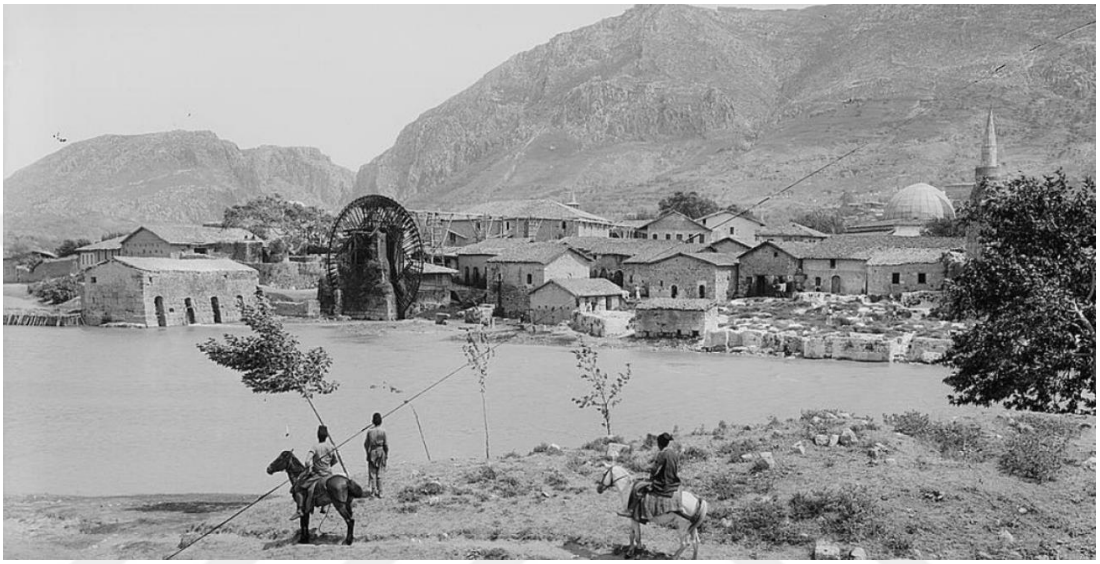

Figure 2.13 The waterwheel, the mosque, and houses banks of the Asi River during the Ottoman period. Source: [31].

During the Ottoman period, many foundation (vakıf) buildings were constructed in Antakya for various purposes. Some of these include the Habib-in Neccar Mosque, Ulu Mosque, Şeyhali Mosque, Meydan Mosque, Kantara Mosque, Halil Ağa Mosque, Ağa Mosque, Deveci Bekir Oğlu Mosque, Şirince Mosque, Barbaros Mosque, Mahremiye Mosque, Sofular İslam Mosque, Kiremitli Mosque, Semerci Mosque, Osmaniye Mosque, and Meydan Mosque, along with the shops associated with these foundations. Additionally, structures such as Kurşunlu Khan, Bedesten, Meydan Hamam, Saka Hamam, and Cündi Hamam are examples of vakıf buildings from the Ottoman period [12].

In the region, olives were the most important agricultural product, and consequently, olive processing facilities were widespread in Antakya. Particularly, soap factories were common during this period. In the market located in the middle of the section

between the street that runs through the city and the river (the Long Bazaar and its surroundings), there were shops belonging to various trades such as cobblers, ironmongers, tailors, carpenters, tin smiths, jewelers, haberdashers, yogurt sellers, cheesemongers, coppersmiths, knife makers, and kebab sellers. On the street along the Orontes River, hotels and coffeehouses were lined up. The street leading to the Governor's House was considered the most fashionable district of the city. Additionally, by the end of the 19th century, a cotton factory had been established in the city [16]. During the Ottoman period, Antakya was not only a trade and transit hub but also a center of science and culture. Many scholars were raised, and a library composed solely of works by Antiochian scholars was established. The city's wealth of books was recorded in the late 19th century [13].

During the Ottoman period, Antakya lost its military and economic significance, gradually transforming from a large city into a small town, which led to a period of stagnation (Figure 2.14). The city was severely affected by successive earthquakes and wars in 1615, 1822, and 1872, which caused significant destruction and a decrease in population, contributing to its transformation into a town. The 1872 earthquake was the most devastating, nearly obliterating the city walls. The bridge over the Orontes River was damaged, and two-thirds of the city was destroyed [28]. The old wooden Christian school and church building near Cindi Hammam/Bath were also demolished in this earthquake [24]. In place of this church, a two-story structure using stone masonry was built, which is now the Greek Orthodox Church. This famous monumental building of Antakya was again destroyed in the earthquake of February 6, 2023.

During the Seleucid period, Antakya was the capital; in the Roman period, it was a border-protecting frontier city and the third-largest metropolis of the empire, often referred to as the "Queen of the East." However, under the Ottomans, Antakya became a small town. Its distance from Istanbul, the loss of its military and economic significance, and the decline in population all contributed to its shrinkage [2]. Despite numerous earthquakes, fires, damages, and reconstruction efforts, the urban fabric of Antakya was largely preserved until the end of the 19th century. By the end of the 19th century, while the city still remained within its ancient walls, a new settlement began

to develop on the opposite bank of the Orontes River. This area, initially known as "Muhacirin Osmaniye," later came to be called "Yeni Mahalle." Due to the suitability of its topography, this area rapidly developed, laying the foundations for what is now modern Antakya [22].

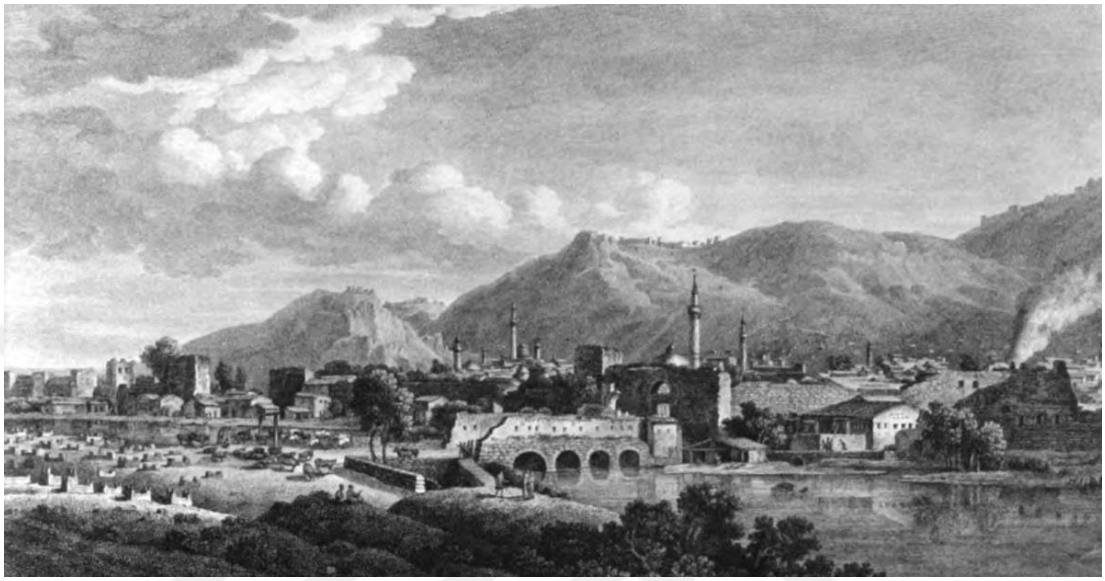

Figure 2.14 View of Antioch across the Orontes between 1784 and 1787. Source: [20].

The grid plan of the Roman period was reshaped according to the characteristics of an Islamic city during the Ottoman period. Within this grid, courtyard typologies became dominant, and inward-facing architecture started to prevail [28]. The road network in Antakya did not emerge as a result of a specific planning or design but developed organically in response to the needs, existing fabric, and topographical conditions. This layout is intricate, winding, and organic in structure. The walls of buildings and courtyards often define the streets, which are narrow, with many dead ends (Figure 2.15) [1].

In the Old Antakya, to the east of the Orontes River, Ottoman-era buildings and traditions were still alive and well-preserved even after the February 6th earthquakes. The city maintained its antiquity with its small, fading handicraft workshops, markets, characteristic houses, bustling bazaars, and shops [27]. However, much of the Ottoman legacy was erased in the aftermath of the earthquake, leaving the city undefined.



Figure 2.15 Narrow, winding and organic streets and dead ends in the Ottoman period. Source: [28].

2.2.9 French Mandate Period (1918-1938) and Turkish Republic Period (since 1939)

At the end of World War I, in 1918, Antakya was occupied by the British and later came under French mandate administration. Since the urban structure of the historic city center on the eastern side of the Orontes River did not align well with modern European urban planning principles, development activities were initiated on the western side of the river, which was generally vacant (Figure 2.16). Major streets, intersections at slanted or right angles, and Western-style monumental buildings began to be constructed on the western bank of the Orontes River [26]. Infrastructure was strengthened, and new streets were opened. One of the most significant urban projects of this period was the creation of Kurtuluş Street, replacing the historic colonnaded street, and the opening of Kemalpaşa Street, which intersected this street perpendicularly [2]. These two streets, forming a linear axis, played a crucial role in shaping the city plan.

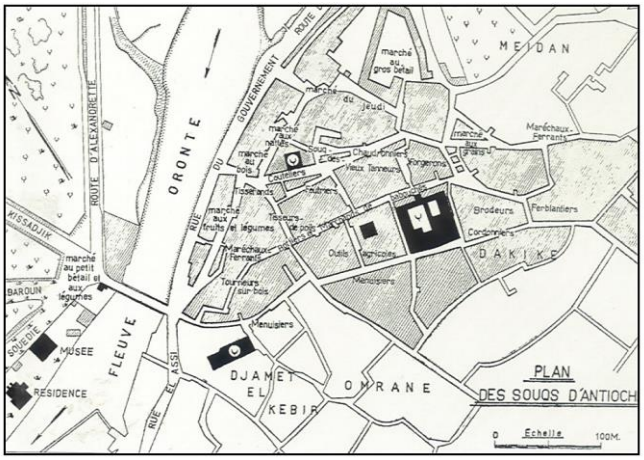

Figure 2.16 The city plan of Antakya from 1936. In this map, it can be seen that Kurtuluş Avenue has not yet been opened. Source: [28].

During the mandate period, there was no distinct architectural style in the city; instead, various styles such as neo-classical, Islamic revival, a more severe interpretation of European Modernism, and Eclecticism were employed. Additionally, the French preferred repurposing existing buildings for different functions. Many of these transformed buildings were located in the Saray neighborhood [26].

During the French Mandate period, the area east of the Orontes River, the old city center, became densely populated with residential and commercial areas, while the new city center to the west was characterized by administrative structures. The upper floors of commercial buildings were repurposed for residential use, aiming to create a new social structure. In the developing new city, various public and cultural buildings were constructed on the western bank of the Orontes River to introduce administrative and public functions, such as the Post Office, Municipality, Museum, Bank, and the Assembly (Gündüz Cinema) building. The decision to settle Circassian immigrants on the western bank of the Orontes River during the Ottoman period was one of the key factors that initiated the development of Antakya on this side of the river. The French Mandate period also contributed significantly to the rapid development of New Antakya [2].

During this period, most of the Ottoman-era civil architecture is located in the northern section of Kemal Paşa Street [2]. New residential buildings were constructed on both sides of Kemal Paşa Street, and the ground floors of these houses were used as shops. Saray Street, which was constructed by Ibrahim Paşa, was transformed into an area with casinos and restaurants during this time [12]. The Ulucami Square, located at the end of Hürriyet Street, continued to bear traces of Ottoman architecture during the French Mandate period [28].

In 1938, with the establishment of the independent Hatay State, French mandate rule in Hatay ended. Shortly after its establishment, in 1939, Hatay was incorporated into the Republic of Türkiye. During the Republican period, Antakya's urban development continued. The city continued to expand horizontally and vertically on both sides of the Orontes River [16]. There are four bridges on the Orontes River that connect Old Antakya to New Antakya. The oldest of these is the Ata Bridge. This bridge was constructed as part of the project to drain Lake Amik through the Orontes River, replacing the city's most famous stone bridge, which had stood since the Roman period (Figure 2.17). In 1970, the contractor Mehmet Ali Güleç, who built the new bridge, stated that the remnants of the old bridge were found underneath the new one [24]. The Ata Bridge connects to Atatürk Monument and Square, one of the busiest intersections in New Antakya, and facilitates access to the official and cultural buildings located around this square.

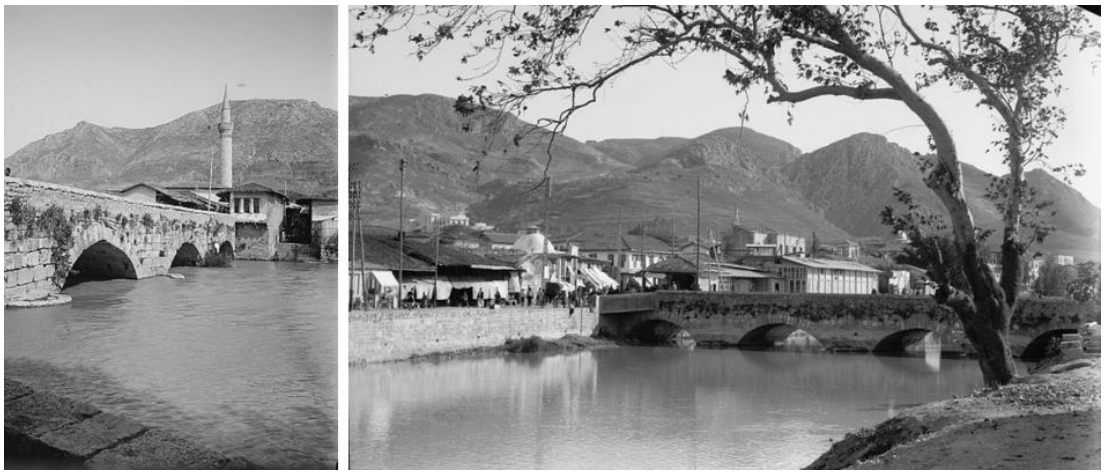

Figure 2.17 The Old Roman Bridge during the French Mandate period. Source: [31].

Parallel to the accelerated urban development of Antakya during the Republic period, there has been an increasing need for new settlement areas. The insufficient space in the city center and the emergence of new functions made the preparation of urban plans essential. Following these plans, the city developed towards New Antakya, new residential areas were established, and it reached its modern structure. However, in recent years, while construction has accelerated in New Antakya, the traditional fabric of the old city center has rapidly deteriorated.

2.3 Assesment of Chapter

Antakya is a cosmopolitan city located in the eastern Mediterranean, known for its strategic position, historical, and cultural richness. The Orontes River (Asi Nehri), which flows from Lebanon, passes through the city and into the Mediterranean, playing a central role in the city's geography and daily life. The city enjoys a Mediterranean climate, with fertile plains and significant agricultural potential. Throughout history, Antakya has been home to various civilizations, including the Seleucid, Roman, Byzantine, Islamic, and Ottoman empires. Founded in 300 BCE by Seleucus I Nicator, the city became an important center for trade and culture, particularly in the spread of Christianity, which, after Jerusalem, spread first in this region. Under Ottoman rule, Antakya's multicultural structure flourished, with Muslims, Christians, Jews, and other ethnic groups coexisting harmoniously. Although geographically part of the Eastern Mediterranean, culturally and historically, it bears the marks of Northern Syria. In the Hellenistic period, Antakya was built with a grid layout and had a cosmopolitan population composed of Macedonians, Greeks, Jews, and indigenous peoples. During the Roman and Byzantine periods, it grew into a significant cultural and religious hub, with numerous religious structures, marble streets, aqueducts, and monumental buildings. Throughout history, the city has been rebuilt after various calamities, invasions, and earthquakes.

In the Ottoman period, the grid plan of the city transformed into an organic layout. Before the earthquake on February 6, 2023, much of Antakya's historic urban fabric still bore traces of the Ottoman period. During the French Mandate period, the city underwent modernization with Western-style urban planning, large streets, and public

buildings. The period of the Republic of Turkey has been a time of continued growth for Antakya. Urban development has continued on both sides of the Orontes River, and the city has been modernized. Additionally, zoning plans and conservation-based zoning plans have been implemented. However, rapid urbanization led to the destruction of traditional elements in the historic city center. Also, the February 6, 2023, earthquakes caused widespread destruction across both the old and new parts of Antakya, severely impacting the city's physical and social structure. Throughout history, the city's architectural and social fabric has been continuously reshaped due to wars, earthquakes, and invasions, resulting in a city that has evolved both physically and culturally under the influence of various civilizations.

CHAPTER 3

ANTIOCH URBAN SITE

3.1 The Historical Urban Fabric and Architectural Features of Antakya

Antakya has been a city that has continuously evolved throughout history, shaped by the diverse urban planning approaches of various civilizations, and developed its own spatial patterns. After being founded by Seleucus I Nicator, the city experienced spatial expansion in parallel with the increase in its population. However, until the great earthquake of 1822, the city did not exhibit spatial growth beyond its walls. The destruction of the city walls during the 1822 earthquake allowed the city to expand. Over the next 50 years, Antakya underwent steady development until it was devastated once again by a major earthquake in 1872. With the partial collapse of the walls, the city's growth resumed. In this context, the city walls acted as a limiting factor for urban expansion [18].

Following the Ottoman-Russian War of 1877-78, the settlement of a Circassian population on the western bank of the Asi River contributed to the continued spatial expansion of Antakya [22]. The first urban development outside the city walls began in 1832 with the construction of the military barracks, located in what is now the Kışlasaray neighborhood. From 1832 onward, the city experienced continuous spatial growth. The rapid acceleration of Antakya’s spatial development, however, began in the 1950s. During this period, Antakya adapted to the nationwide urbanization movements occurring throughout Türkiye. Particularly after 1958, the city began to receive significant migration, primarily from districts such as Yayladağı and Altınözü, leading to rapid expansion both southward and northward [18] (Figure 3.1).

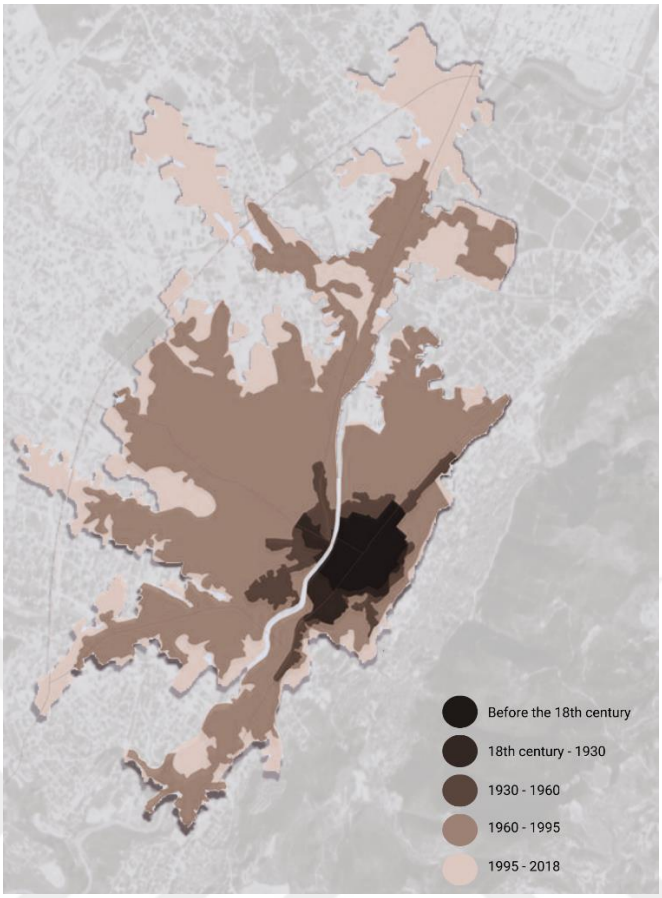

Figure 3.1 Spatial development of the city throughout history. Source: edit by author from [32].

The factors influencing the formation of a city's urban form include the city's natural structure, the cultural and socio-economic characteristics of its inhabitants, ethnic diversity, beliefs, traditions, and governance systems. Antakya's urban structure was initially shaped by elements such as streets, shops, forums, theaters, temples, and agoras. However, over time, the city exhibited morphological changes in line with evolving cultural dynamics. A prominent example of this transformation is the shift from the grid plan on which the city was founded to an organic urban layout during the Ottoman period. The Ottoman era was the most significant period in shaping the spatial structure of what is now known as Old Antakya. While the city reflects the architectural characteristics of the Ottoman period, it also differs from the architecture of typical Ottoman Anatolian cities. The reasons for these differences include Antakya's geographical distance from Anatolia, limited cultural interaction, its high degree of religious and ethnic diversity, its unique climate, and its traditional architectural features [12].

The historic city center of Antakya is located between the Asi River, which divides the city in two, and Mount Habib Neccar. The Asi River serves not only as a geographical element that gives the historic texture its identity but also as a boundary separating the historic area from the "New Antakya" region [22].

The boundaries of Old Antakya are defined by the neighborhoods situated between Mount Habib Neccar and the Asi River, many of which are historically significant. On the other hand, New Antakya is characterized by the areas located on the western bank of the Asi River, which experienced rapid development following Hatay's annexation to Türkiye and particularly after the 1950s (Figure 3.2).



Figure 3.2 Satellite photograph of Antakya dated 2019, representation of New Antakya and the Old Antakya city texture. Source: edit by author from [32].

The historical urban fabric of Antakya encompasses cultural and architectural traces from various periods. The core elements of this fabric are predominantly located in the historic city center, commonly referred to as Old Antakya (Figure 3.3). In contrast, historical structures are less common in New Antakya, which reflects the urbanization dynamics of the 20th century. The key factors shaping Antakya's traditional architecture include its topography, climatic conditions, social practices, and proximity to the Arab world. Squares, streets, alleys, fountains, houses, and

commercial buildings constitute the main components of the city's historic texture [2]. In addition to civic architecture, monumental structures such as mosques, churches, synagogues, khans, baths (hamam), soap factories, and tombs also play a significant role in completing the unique historical fabric of Antakya.

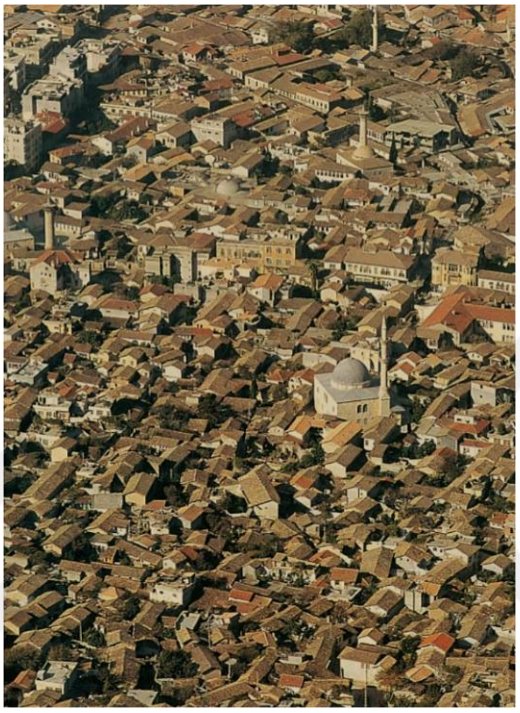

Figure 3.3 The historical fabric of Antakya. Source: [18].

3.1.1 Neighborhoods, Squares and Streets

Neighborhoods (mahalles) are living spaces within cities where elements such as mosques, fountains, and coffeehouses converge under the shade of trees, providing easily manageable and socially cohesive environments [13]. They serve as core units that ensure urban coherence and play a significant role in the administrative organization and functioning of the city [15]**.** Antakya, established with an initial structure of two neighborhoods, expanded over time, with the number of neighborhoods increasing in parallel with its development and administrative organization [16]. In situations where no single national or religious community dominates the city, the urban structure often takes shape based on religious or ethnic identities. Ethnicity and religion have played a significant role in shaping the neighborhoods of Antakya. By the early 20th century, the city's neighborhoods were

divided into three main groups: Turkish, Alawite, and Christian (Figure 3.4). Traces of this division have persisted to the present day [21, 33]. For instance, within the urban conservation area, the Alawite neighborhoods in the northeast feature Alawite shrines, the Turkish neighborhoods in the center contain mosques, and the Christian neighborhoods in the southwest are home to churches.

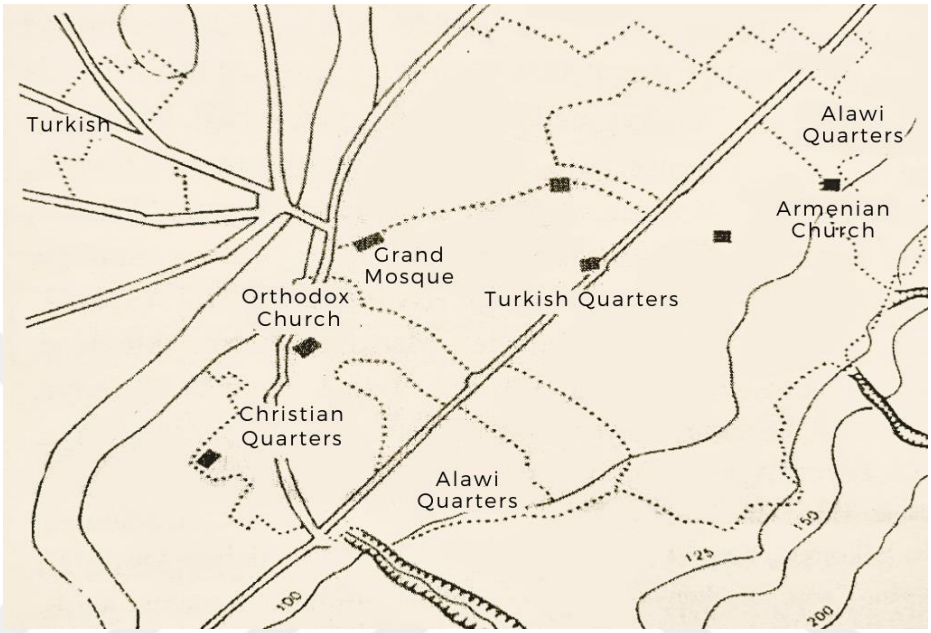

Figure 3.4 Communities in Antioch. Source: edit by author from [33].

In some neighborhoods of Old Antakya, such as Dutdibi, Habib-i Neccar, Şirince, and Sofular, there are public squares, which typically also feature fountains. These squares have traditionally served as play areas for children [13]. Within the Urban Conservation Area, key arterial streets that form the primary transportation network and connect to the city's dynamic points include Kurtuluş Street, Hürriyet Street, Kemal Paşa Street, Saray Street, Uzun Çarşı Street, and Kırk Asırlık Türk Yurdu Street. Over time, these streets have integrated with the city’s commercial, social, and cultural spaces, acquiring new functions [34].

Kurtuluş Street, running in a northeast-southwest direction between the Asi (Orontes) River and Mount Habib Neccar (Silpius), divides Old Antakya into two. The grand colonnaded street of Roman-era Antakya (Herod Street or Kolonatlı Street) forms the foundation of the present-day Kurtuluş Street. Although part of this street is now

underground and has lost its original alignment, it remained a vital axis running through the city until the late Ottoman period. The Ottoman city was restructured in accordance with the naturally formed urban fabric. Due to some houses extending into the street, the route became irregular and winding, making it difficult to use, which led to the need for a new Street [34].

During the French Mandate period, the necessary planning was carried out, and Kurtuluş Street was opened in the early 20th century [34]. Kurtuluş Street is primarily lined with commercial establishments. In contrast, the streets perpendicular to it feature residential buildings, squares, and fountains [2].

In 1832, urban development in Antakya became concentrated in the Kışla and Saray areas, and it accelerated after the Tanzimat period. The road extending from the palace to the barracks was widened and named Saray Street (Figure 3.5). Over time, commercial activities shifted to this street, making Saray Street the central hub of commercial activity [18]. Hürriyet Street was created by closing part of Saray Street to vehicle traffic and opening it to pedestrians after 2013. This street lies between the Orthodox Church and the Ulu Mosque [35].



Figure 3.5 The Saray Street. Source: [36].

Kemal Paşa Street was a narrow and irregular street during the Ottoman period, extending from Habib-i Neccar Mosque to the Asi River and perpendicular to Kurtuluş Street [13]. Over the past century, it has transformed into a major thoroughfare. This street, which is actively used today, has led to significant changes in the residential and street system of Antakya in recent years. Following the opening of this street, the multi-story buildings that began to rise to the south have contributed to the degradation of the historic fabric [18]. Uzun Çarşı Street starts near Ulu Mosque and extends towards the northeast of the city, ending at the point where it intersects with Kurtuluş Street. This street, including the area of Uzun Çarşı, forms the main axis of Antakya's commercial center [21]. Kırk Asırlık Türk Yurdu Street is an important axis that connects Saray Street and Kurtuluş Street. During the Ottoman period, many streets were connected to this axis, which is predominantly a residential area. It is particularly significant due to its location and the fact that it reflects Ottoman-era housing [37].

The historic streets of Antakya are generally connected to the main avenues mentioned above, with residential buildings arranged along these streets. These houses, linked by strong community ties, form an inward-facing neighborhood and urban fabric [2]. When Antakya was founded, the streets and avenues were organized in a northeast-southwest direction to facilitate the distribution of the prevailing winds throughout the city and to ensure air circulation [12].

The streets of Antakya are designed to be narrow, creating shaded spaces suitable for the hot climate, and they also have a complex structure. The centers of these streets are designed in the form of channels (gutters-oluk-arık) to facilitate the drainage of rainwater (Figure 3.6). Rainwater is carried through these channels to the Asi River [12]. The width of the streets varies between 1.5 and 5 meters. In some streets, there are spaces called "Kabaltı," where a house covers the street like a bridge (Figure 3.7). Over time, Kabaltı has become a characteristic feature of Antakya's streets, contributing to their aesthetic value [13].



Figure 3.6 Narrow Antioch streets and drain (oluk-arık) sample. Source: [38].

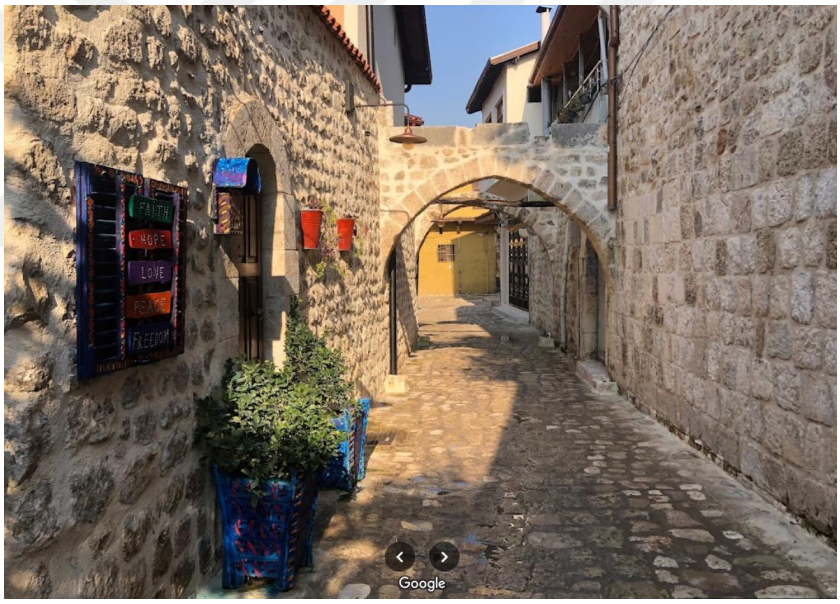

Figure 3.7 Example of kabaltı(vaulted passage) in historical Antakya houses. Source: Google Maps.

The relationship between the house and the street, the expansions and contractions along the street, dead-end streets (zokmak) (Figure 3.8), functionality, infrastructure system, stone paving, and the perspectives at street corners are fundamental elements that define the characteristic features of the streets of Antakya. Over time, especially under the influence of urbanization movements, these streets were paved with asphalt, resulting in the loss of their original structural qualities [2].



Figure 3.8 Example of a dead-end street (zokmak) in historical Antioch houses. Source: [36].

The streets unique to Antakya have not been adequately preserved despite the protection laws enacted by the Supreme Council of Real Estate Antiquities and Monuments, the Supreme Council for the Protection of Immovable Cultural and Natural Assets, and the Adana Regional Council for the Conservation of Cultural and Natural Assets. In 1987, as part of an implemented project, all the historic streets within the old city of Antakya were covered with concrete, leading to the destruction of the city's cultural richness [2].

3.1.2 Traditional Antakya Houses

In ancient times, houses in Antakya featured courtyards with carefully arranged gardens. The design of these gardens was influenced by climatic conditions, social traditions, and the cultural impacts of Roman and Arab civilizations. Due to the effects of the Mediterranean climate, emphasis was placed on creating shaded and cool spaces. For the purpose of privacy, courtyards were designed to be inwardly oriented and surrounded by high exterior walls (Figure 3.9) [2].

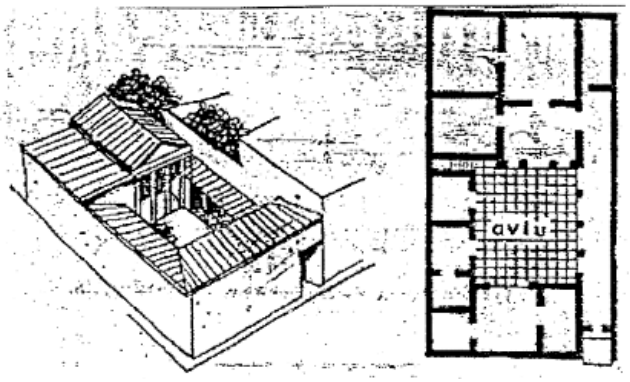

Figure 3.9 Courtyard house plan scheme in ancient times. Source: [2].

The traditional Antakya houses, which have survived to the present day and reflect the social and cultural life of Antakya, are predominantly located in the Old Antakya region (on the eastern bank of the Asi River) between the Habib-i Neccar Mountains and the Asi River, particularly along Kurtuluş Avenue (Figure 3.10). These houses are aligned in rows along the street and share common walls for defensive purposes (Figure 3.11). There are no open spaces between the houses apart from the streets, and each house is independent within itself. Due to concerns for privacy, the ground floor façades of the houses facing the street are usually blind. The courtyard walls are also high and made of stone. The only opening in the courtyard wall is the arched entrance gate [2].

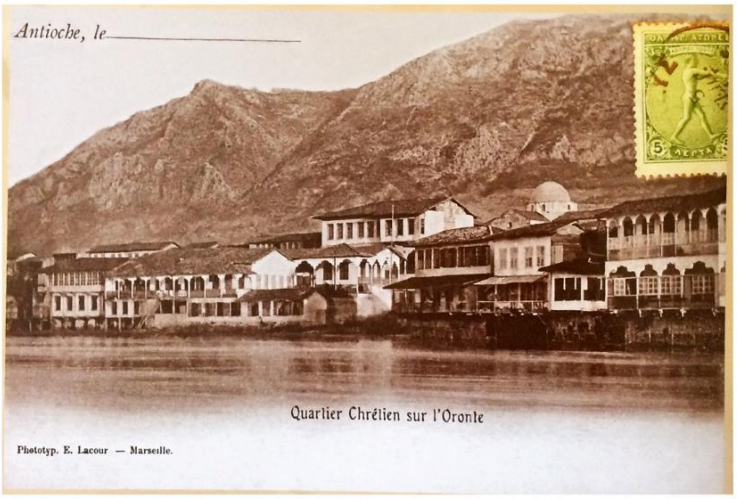

Figure 3.10 Asi River and Antakya villas in 1922. Source: [39].



Figure 3.11 Traditional Antakya houses. Source: [38].

A significant portion of daily life takes place in the stone-paved courtyard. To reduce the impact of heat and create shaded spaces, various trees, plants, citrus fruits, and grapevines are planted in the courtyard (Figure 3.12). The courtyard also contains a platform, a well, and a pool. In traditional Antakya houses, the courtyard is the most important part of the interior and serves the function of a sofa. Rooms are arranged on one, two, or three sides of the centrally located courtyard (Figure 3.13). The room doors open to the courtyard through arched or rectangular windows and doors [2].

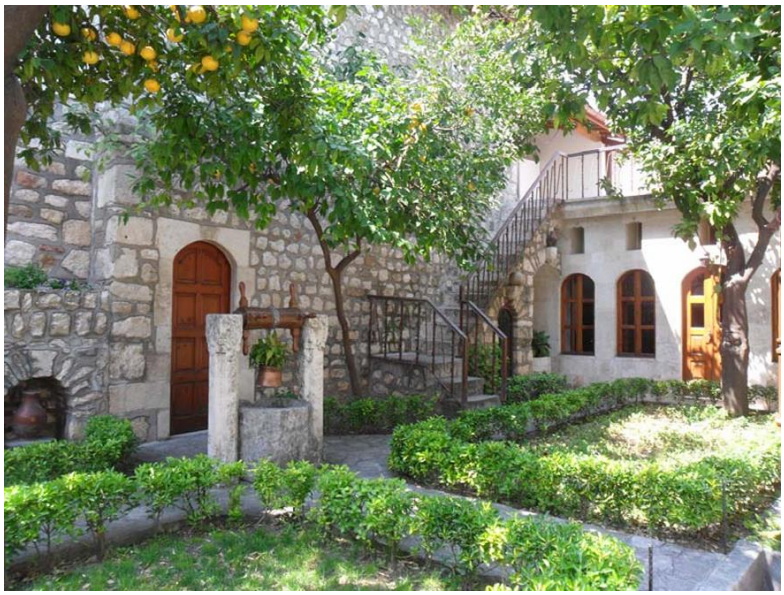

Figure 3.12 Courtyard and landscaping of traditional Antakya Houses. Source: [38].

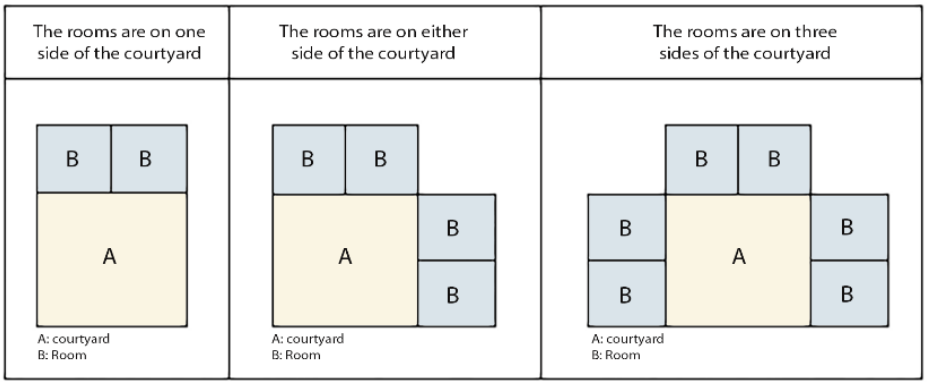

Figure 3.13 Plan typology of the Traditional Antakya House. Source: The plan diagram was created by the author using the base in [2].

The traditional houses of Old Antakya share the same characteristic features as courtyard houses found in the Eastern Mediterranean region and Northern Syria. These houses are typically two-story structures, although single-story examples exist, and the most commonly used construction material is stone. In addition to stone, wood and adobe are also employed. Among the single- or two-story Antakya houses that have survived to the present day, two main structural systems are observed. These include the less common load-bearing stone masonry system and the more prevalent system, which consists of a stone masonry ground floor and an upper floor with a timber frame infilled with stone [39]. Generally, the ground floor is built with thick load-bearing walls for a heavy structure, while the upper floors feature lighter construction using the bağdadi (lath and plaster) technique [2]. Access to the upper floor is provided by a stone staircase located in the courtyard, embedded into the courtyard wall (Figure 3.14). The roofs of these houses are wooden and covered with alaturka (traditional Turkish) tiles. This lightweight roofing system is considered a precaution against earthquakes [13].



Figure 3.14 Example of stairs in the courtyard in traditional Antakya houses. Source: [39].

In Antakya's residential architecture, there are two façades that stand in contrast to each other in terms of closedness and openness. One is the street-facing façade, which is more enclosed, and the other is the courtyard-facing façade, which is more permeable. Windows on the street-facing façades of houses are generally located in upper-floor cumba and are arranged in groups of four, three, or two. On the façades facing the courtyard, windows are located on both the ground and upper floors. Due to the hot climate, window sizes are generally large, with those on the courtyard-facing façades being slightly larger than those on the street-facing façades. These windows are designed to match the shape of the doors opening into the courtyard, either with arched or rectangular forms (Figure 3.15). The courtyard-facing façade is the most significant façade of the house [2]. Above the main windows on the courtyard-facing façade, there are rows of smaller windows. These windows, which showcase unique examples of stone craftsmanship, are called kuş takası (Figure 3.15) [12].



Figure 3.15 Courtyard facades and bird boxes (kuş takaları) in traditional Antakya houses. Source: [18]. *(Note: This building was used as a Museum of Medicinal and Aromatic Plants before the earthquake.)*

The exterior walls of the houses are plain and simple, while the interior walls are richly ornamented. These elaborate decorations, reflecting the inward-focused lifestyle, also highlight the importance given to the interior spaces. On the ground floor, there are spaces allocated for daily activities, a guest room, and a kitchen, while the bedrooms are located on the upper floor. The rooms feature built-in elements such as closets, storage units (yüklük), and shelves. The attic spaces are used as storage (kiler) areas. The ceilings are adorned with arabesque motifs [2].

In Antakya, most houses are generally built with a similar plan layout and architectural character; however, differences may arise depending on the economic status of the homeowners. These differences are particularly evident in features such as craftsmanship, size, and ornamentation. The elements defining Antakya's traditional residential architecture include interlocking street gates, spacious courtyards, the contrast between street-facing and courtyard-facing façades, large windows, cumba on the street façade in straight or zigzag forms, and roofs covered with tiles [2]. Additionally, inward-oriented living, the imperceptibility of interior spaces from the outside, and a deeply rooted sense of "privacy" that has persisted since antiquity are key factors shaping the architectural identity of the houses [39].

In contrast to the dominant architectural style of old Antakya, the architecture that has emerged in recent years in New Antakya has significantly diverged from the traditional fabric. The concept of detached houses has completely disappeared, replaced by a dominant apartment building typology [2].

The integrity of residential areas within the historic city center of Antakya has deteriorated over time. With the emergence of newly established commercial centers, some residential buildings have been repurposed for commercial use. In the residential areas located to the east of the historic fabric, the original function has been preserved; however, issues such as subdivision, neglect, and degradation have led to significant deterioration. These areas have gradually become the least healthy and least comfortable parts of the city. Additionally, the encroachment of informal housing (*gecekondu*) into the historic urban fabric has further contributed to the area's decline [40].

3.1.3 Commercial and Housing-Commercial Buildings

Antakya has been a renowned trade city situated on significant trade routes throughout history. Since its foundation, the city has experienced various changes and developments in its commercial activities, shaped by the civilizations it has hosted. Weaving, olive oil production, and soap manufacturing are among the historically rooted and significant industries in Antakya [41]. The emergence of Antakya's commercial fabric dates back to the era of Seleucus I Nicator, the city's founder. During the Seleucid period, a structure known as the "Agora" was constructed in the area that corresponds to the present-day Old Antakya. This structure served as a major trade hub within the city [20]. Agoras, which were prominent structures in Ancient Greece, were established at the center of cities and functioned as spaces for political gatherings, markets, promenades, meetings, and commerce [42]. From the Roman Empire to the Ottoman period, Antakya suffered significant damage due to natural disasters and wars. Additionally, shifts in trade routes caused the city to gradually lose its former glory and its prominence as a military and commercial center [18].

During the Ottoman period, changes in lifestyle were reflected in the urban fabric of Antakya. The interweaving of streets, alleys, and courtyard houses created a dense

settlement pattern and an inward-oriented social structure. As a result, streets, alleys, covered bazaars (bedesten), khans (han), mosques, and residential buildings became integral components of the city's commercial activity [18]. The marketplace district occupies approximately one-quarter of Antakya's historic urban fabric. The city's main commercial axis during the Ottoman period was formed by its two most significant streets: Kurtuluş Street and Uzun Çarşı Street [41].

During the Ottoman period, the city center of Antakya consisted of the Ulu Mosque and its adjacent marketplace (Arasta). The historic Antakya Bazaar, along with khans (han), soap factories (sabunhane), and covered bazaars (bedesten), formed the key elements of the city's commercial fabric. Starting at the Ulu Mosque and its complex (külliye), the Historic Antakya Bazaar extends to the end of Uzun Çarşı Street. This bazaar features Ottoman-era civil architecture. The organically structured bazaar spreads toward the northeastern part of the city, with some streets narrowing to less than one meter in width. Within the bazaar, one can find inns, covered bazaars, marketplaces dedicated to various crafts, simple workshops, shops, mosques, masjids, and public baths (hamam) [12].

The bazaar serves as the topographical façade of a craft or guild. In Antakya's bazaar district, certain streets are organized as marketplaces named after specific trades. The shops within these bazaars typically feature narrow entrances, are deep, closely aligned, and single-story (Figure 3.16). They are covered with wooden roofs topped with terracotta tiles [13]. Bazaars are generally named according to the professions practiced within them, with similar professions often located together. Some of these bazaars include the merchants' bazaar (Tüccarlar), jewelers' bazaar (Kuyumcular), shoemakers' bazaar (Kunduracılar), cotton dealers' bazaar (Pamukçular), butchers' bazaar (Kasaplar), carpenters' bazaar (Marangozlar), spice dealers' bazaar (Baharatçılar-Attarlar), blacksmiths' bazaar (Demirciler), oil sellers' bazaar , (Yağcılar) saddle makers' bazaar (Semerciler), and coarse fabric dealers' bazaar (Kılcılar) [43].



Figure 3.16 An old photograph from the historical Antakya bazaar. Source: [18].

Some of the bazaars have lost their original functions over time, being replaced by other professions. However, there are still bazaars that have preserved their functions to this day. Bazaars such as those for mat weavers, saddle makers, coppersmiths, felt makers, and tinmen continue to exist on a smaller scale. Due to the constantly changing dynamics of the city, some commercial buildings have undergone functional transformations and no longer exist in their original form. It is known that in some of the khans in the bazaar district, the courtyard gates were opened to integrate with the street, and the rooms were converted into shops. In the shops along Uzun Çarşı Street, traditional products specific to Antakya culture are sold and produced. This street and its connected alleys feature fountains and water basins (Figure 3.17) [41].



Figure 3.17 A view from Uzun Bazaar Street (left). A pool and fountain in the bazaar area (right). Source: [41].

The width of Uzun Çarşı Street ranges from 3.5 to 7 meters, and its surface is paved with stone. Currently, the street is covered by a semi-transparent plastic sheet mounted on a metal structure along its length (Figure 3.17). This covering system not only disrupts the historical fabric but also creates a greenhouse effect during the summer months. Additionally, the area has suffered from neglect and low-quality interventions [41]. Despite the interventions and damage, traces of the organic fabric that once dominated old Antakya could still be observed in the bazaar district up until the February 6th earthquakes.

Influenced by the changing commercial and social characteristics over the centuries, the urban structure of Antakya has evolved into its current form. During the Ottoman period, the city fabric concentrated around the commercial center, but in recent years, it has spread toward different centers. The clear distinction between commercial and residential areas, a defining feature of Ottoman cities, has gradually diminished, and these areas have started to intermingle. Starting from the late 19th century, commercial structures began to be built in combination with residential spaces, where the ground floor was dedicated to commerce and the upper floors served as living areas [41].

3.1.4 Monumental Buildings

Muslims, in order to facilitate the Islamization of the lands they conquered, built places of worship at the centers of the settlements they established. In cities founded by Muslim Turks, large mosques that served as the main places of worship and where the community gathered were called "ulucami" or "câmi-i kebîr." The term "mescid" refers to smaller places of worship, such as neighborhood mosques [44]. After Antakya came under Muslim rule, mosque architecture began to develop. The city is home to many historical mosques and prayer halls. In the Antakya Urban Protected Area, in addition to the Ulu Mosque and the Habib-i Neccar Mosque, mosques and prayer halls are densely located, especially in the bazaar district.

In Antakya, there are examples of both dome-covered mosques typical of Anatolia (such as Şeyh Ali Mosque, Yeni Mosque, and Habib Neccar Mosque) and vaulted mosques from the early period (such as the Ulu Mosque). In addition to these, mosques with stone walls, tiled roofs, and wooden structures are other mosque types specific to

the city (such as Meydan, Nakib, and Mahremiye Mosques). This construction style is considered to be the most suitable method for a region prone to earthquakes [13]. Some mosques and masjids in Antakya have been built as part of larger religious complexes, known as külliye, which also include madrasa buildings.

In Antakya, two types of minarets are commonly found. One type is the octagonal, wide-bodied, low minaret without a balcony (şerefe). The call-to-prayer section (ezanlık) is located at the top and covered with an umbrella-style roof. This type of minaret has examples from various periods in Antakya, and the tallest of them is the minaret of Habib Neccar Mosque. The other type of minaret is similar to those found in Anatolian mosques, with a cylindrical body and a balcony [13].

Hatay is a mosaic of religions, a city where people of various religions and beliefs live together in harmony, with mosques, churches, and synagogues coexisting. Among the ten most important Christian holy sites, eight (Antakya, Urfa, Cappadocia, Tarsus, Demre, Iznik, Istanbul, and Ephesus) are located in Türkiye, with the exception of Jerusalem and the Vatican. Hatay, one of the four major patriarchal centers, is home to the world's first Catholic church, the Saint Pierre Church. Located near Mount Habib-i Neccar, this church is a natural cave that has been converted into a church through additions. The first religious meeting was held here, and it was here that the name "Christian" was first given to believers. In 1983, it was declared a Holy Cross site for Christians [45].

As Christianity spread in the following years, new places of worship were built. The construction of churches that started in Antakya continued in various districts of Hatay, such as İskenderun, Samandağ, and Altınözü. The city is also one of the main centers of Hellenistic Judaism and Second Temple Judaism. For this reason, the city also has synagogues.

The baths (hamam) built in cities and towns to meet the public's need for cleanliness are an integral part of Turkish culture and social life. The Turks place great importance on baths, which is why bath structures have become one of the most distinctive features characterizing Turkish cities [19]. Evliya Çelebi mentions that the baths built in Antakya were small, all located on the inner side of the castle walls along the Asi

River, and that the water was drawn from the river using wheels (su dolapları) [17]. The baths in Antakya and its surroundings are single baths, with no examples of double baths. While Antakya's baths developed in parallel with Turkish bath architecture, they display unique characteristics influenced by regional and cultural factors. The historical and geographical richness of Antakya makes these structures distinctive. Due to Jewish beliefs, some baths (such as Yeni Hamam) feature plunge pools (dalma havuzu). Others (such as Saka Hamam) contain tombs or stone sarcophagi. These aspects distinguish them from traditional Turkish bath architecture [46].

The khans are structures built within cities for accommodation and trade purposes. In khans, production and trade activities are carried out together, and they are often named after the goods produced there [47]. Bedestens, which emerged during the Ottoman period, are commercial structures where shopping and trade activities take place, consisting of one or more streets lined with shops on both sides [48]. The term khan, which is of Persian origin, means "house" or "inn." Originating in the Middle Ages, khans served as places where local and foreign merchants left their goods and carried out activities such as sales, production, and lodging. These buildings typically have a plan centered around a courtyard, often consisting of a two-story arcade and rooms arranged at the back [49].

The khans in Antakya are usually square-plan buildings with a courtyard, containing spaces such as rooms, storage areas, shops, and mosques [13]. In the 18th century, there were 24 khans in Antakya. With changing commercial conditions, some khans were converted into soap factories, some were opened to the public and subdivided into shops, transforming them into bazaars, and some were demolished [41].

One of the prominent types of monumental structures commonly found in Antakya is soap houses. These structures hold a significant place in the historical and cultural heritage of the city. As part of Antakya’s traditional production culture, soap houses have historically persisted and played a role in shaping the city’s economic and social life. Soap production in Antakya occupies an essential place in the city's identity. The raw materials of soap, laurel and olive, are abundant in Antakya and its surroundings due to the region's favorable climatic conditions. This abundance has facilitated increased soap production, making soap an element that has gained meaning in the

memories of both the local population and visitors, thereby solidifying its position as a vital aspect of the city's image. Soap houses remained active until the mid-20th century; however, they began to lose their function due to rural-to-urban migration, rapid population growth, and urban expansion. Despite this decline, soap production continues today in households and workshops [50].

3.2 Antioch Zoning Plans

3.2.1 1932 Danger Plan of Antioch

The first urban plan for Antakya was prepared in 1932 by René Danger, the chief city planner of the French Mandate administration. Prior to 1932, the French had mainly focused on addressing urgent needs, resulting in an incomplete architectural and urban planning project. René Danger's creation of an urban plan for Antakya is considered a significant effort to overcome this issue [26].

Danger's plan included two fundamental principles. The first was the development of the city's road network, with a circular highway connection to link the two parts of the city (Figure 3.18). The second principle was functional zoning within the old and new city layouts. To develop the road network, Danger proposed three main squares in the city center. Two of these squares were located in the old city center (one in front of Habibi Neccar Mosque on Kurtuluş Street and the other in front of Ulu Mosque), while the third square was located across the Orontes River, in the area where new public buildings would be constructed. The plan also defined functional zones throughout the historic core of Antakya and proposed the development of the new city on the western bank of the Orontes River. Within the historic city center, the plan suggested the creation of distinct areas for commerce, industry, and residential purposes. The Danger Plan was accepted by the Antakya Municipality, and the proposals for the western side of the Orontes River were implemented. However, the suggestions for the historic center were only partially realized [24].

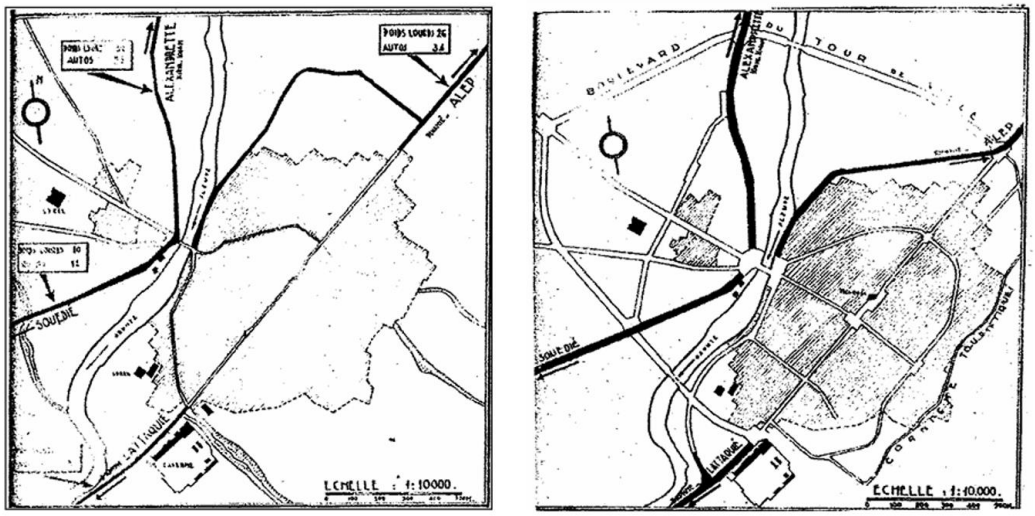

Figure 3.18 The existing street network of Antakya in 1932 (left), The proposed street network (right). Source: [24].

According to the city plan designed during the French colonial period, two completely different urban layouts were created on either side of the Orontes River. This plan aimed to create a separation not only in the physical environment but also in cultural and ideological terms. In this context, the Orontes River was repositioned as a symbolic boundary separating two distinct worldviews, defined as the West and East. On the western side, the new city was designed with large streets intersecting at right angles, geometric squares, and eventually Western-style public and private buildings. This was intended to create a fundamentally different image from the ancient city on the other side of the Orontes River. The old Antakya was characterized by winding streets, a lack of public spaces, and an architecture that was perceived as decaying. This colonial urban principle was supported not only by French authorities but also by some of the city's local inhabitants [26].

3.2.2 1948 and 1957 Zoning Plan of Antioch

Türkiye experienced significant urbanization momentum after the 1950s. Antakya, adapting to these urbanization movements, received substantial migration from rural areas in the early 1950s and rapidly developed [18]. Urban planning efforts for Antakya began in the first half of the 20th century. The first urban development plan was prepared in 1948 by the Bank of Provinces. Subsequently, in 1957, another urban

development plan was prepared by Assoc. Prof. Dr. Gündüz Özdeş [2]. This plan was created in 1:5000, 1:1000, and 1:500 scales. The 1:5000 scale plan aimed to develop the new city across the Orontes River, improve the old town, and expand the northeast and southwest directions of the old city (Figure 3.19). The plan also proposed significant changes to the street system of the city center, including widening and creating new streets, such as Kurtuluş Caddesi [28].

The migration of people from rural areas to Antakya and the increase in population brought about socio-cultural and economic developments, including urbanization. After the urban plan prepared in 1957, urbanization activities gained momentum. In the early 1960s, the first small industrial cooperative was established, and the construction of this industrial site was completed in 1975. As the manufacturing sector developed and the population grew, new industrial sites were later established [18]. The new system proposed by the 1957 plan led to a radical transformation of the traditional urban fabric. The expansion of residential areas in the old fabric towards Harbiye, the creation of an industrial zone around the old fabric, and the widening of narrow streets and opening of many new roads caused a disruption in the traditional urban structure. The unique relationship between streets, houses, and courtyards in Antakya began to disappear [28].

The migration from the districts of Altınözü, Yayladağı, Reyhanlı, Kırıkhan, and Hassa to Antakya accelerated the process of population growth after 1960 [25]. Today, the gecekondu (squatter) neighborhoods of Antakya, including Bağrıyanık, Havuzlar, Şirince, Karaali Bölüğü, Kardeşler, Aydınlıkevler, and Hacı Ömer Alpagot, which are located at the foothills of Habib-i Neccar Mountain, were established as a result of these migrations [18].

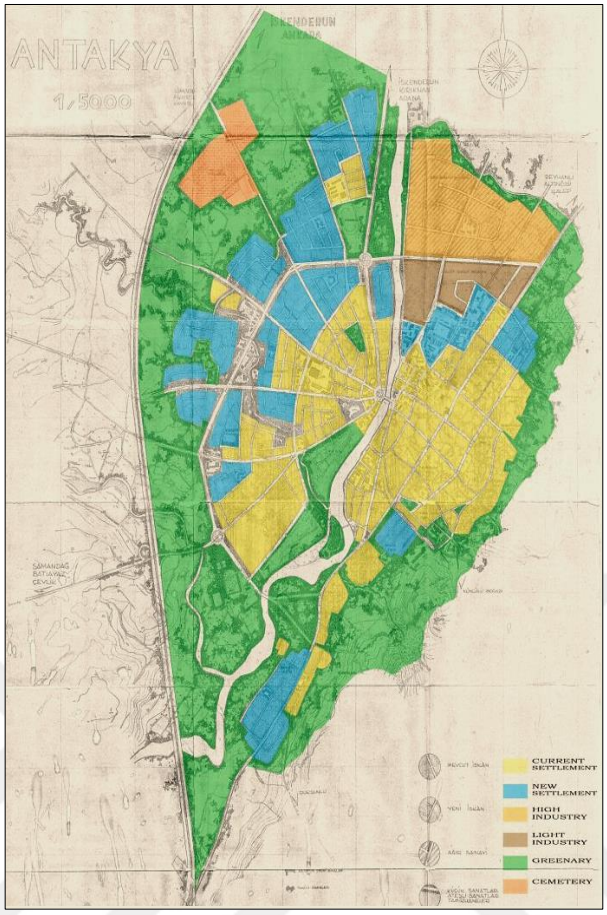

Figure 3.19 1/5000 scale Land Use decisions on the urban development plan of Antakya. Source: [24].

3.2.3 1978 The Historical Site Special Development Plan of Antioch

The Higher Council of Immovable Cultural Assets and Monuments announced the need for a new development plan to define the protected historical buildings, urban areas, and archaeological and natural sites in accordance with the 1710 Law on the Protection of Historical Monuments, which came into force in 1973 [24]. Thus, as the city's zoning plans were being completed, the first serious and fundamental action for its preservation was initiated [28]. In this context, the boundaries of urban, archaeological, and natural sites requiring preservation were defined in 1975. Based on this study, 70 monumental structures *(24 mosques, 6 small mosques, 2 khans, 4 hammams, 3 tombs, 17 fountains, 1 bedesten, 2 soap factories, 2 churches, 1 synagogue, and 8 other buildings)* and 132 examples of civil architecture *(traditional houses)* were registered [1].

The third zoning plan was prepared in 1978 by architect Yavuz Taşçı. This plan was primarily designed to preserve archaeological and natural heritage sites. Atatürk Avenue, Cumhuriyet Avenue, and Adnan Menderes Avenue, which connect to Atatürk Square, reached their current configurations through the 1978 master plan. Additionally, the widespread construction of multi-story buildings in Antakya was also initiated with this plan. The 1978 zoning plan laid the groundwork for conservation-oriented planning efforts by revising construction regulations on the city's eastern side in line with preservation principles [51, 1, 18].

3.2.4 1987 Conservation Zoning Plan of Antioch

Various planning studies have been conducted to preserve the historical city center of Antakya. In 1982, the first inventory of immovable cultural assets was carried out. In 1985, the registered immovable cultural assets were reviewed, and their registration records were updated. In 1987, the Conservation-Oriented Development Plan was approved and implemented (Figure 3.20) [52]. This plan is recognized as Antakya’s first conservation-oriented development plan [2]. Although the 1987 plan aimed to preserve the historical fabric within the Urban Site Area, the specified goals were not fully achieved. Certain shortcomings in its implementation hindered the expected level of preservation of the historical fabric [28].

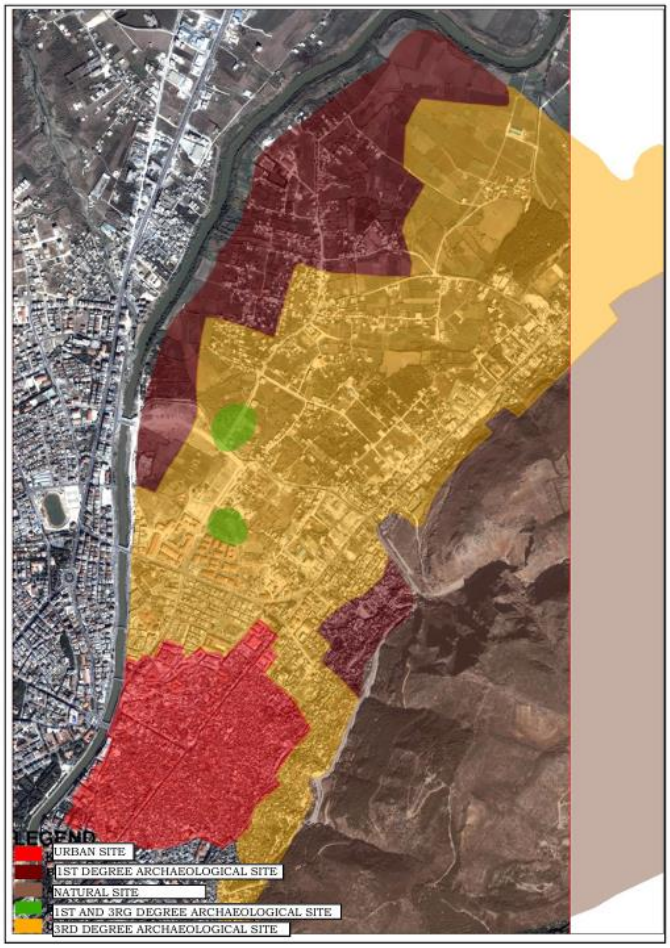

Figure 3.20 1987 Conservation zoning plan site boundaries. Source: [24].

After 1987, many zoning plan amendments were made in Antakya. Some of these changes covered areas on the east side of the Orontes River, while others included areas within the boundaries of neighboring municipalities after the 1994 local elections. In the old part of Antakya, neighborhoods such as Aydınlıkevler, Bağrıyanık, Şirince, Karaali Bölüğü, and Hacı Ömer Alpagot, which were heavily affected by squatter housing along the slopes of Mount Habib-i Neccar, did not see much development of urban functions beyond residential areas during these years. On the other hand, neighborhoods like Sofular, Meydan, Dutdibi, ŞeyhAli, and Kantara, which preserved much of their historical fabric and had existed since the Ottoman period, continued to have residential functions as the dominant urban characteristic [18].

3.2.5 2009 Conservation Revision Zoning Plan of Antioch

In 2009, the revision of the Conservation-Oriented Development Plan was approved and implemented [52]. In this revision, the boundaries of urban sites, urban site impact zones, 3rd-degree, and 1st-degree archaeological sites were redefined and reorganized.

In the 2009 plan, two distinct archaeological site areas were defined: 1st-degree and 3rd-degree archaeological sites. The 1st-degree archaeological site includes four different areas that cover the northern part of the city, the western slopes of Habib Neccar Mountain, and the region around the St. Pierre Cave Church. The 3rd-degree archaeological site consists of areas with industrial and commercial functions located in the northern part of the historic city and urban site impact zones. The urban site area, which was reorganized and renamed as the "Urban and 3rd-Degree Archaeological Site," encompasses the historic city center with registered buildings, extending to the western bank of the Asi River. This plan creates a comprehensive framework that considers the preservation of historic areas and their environmental impacts while defining different layers of the city. These regulations aim to protect Antakya's historical fabric and better manage the challenges arising from the city's growth and development [24].

According to the plan, a large portion of Old Antakya, located between Habib Neccar Mountain and the Asi River, falls within the urban site boundaries, with Kurtuluş Street dividing this area into two parts (Figure 3.21). Along with Kurtuluş Street, other important streets such as Hürriyet, Saray, and Kemal Paşa are also within this area. These streets are the main arteries that form the city's transportation network. In addition, various historical buildings with different functions (such as mosques, masjids, churches, synagogues, inns, baths, and residential areas) are essential elements that constitute the urban site area.

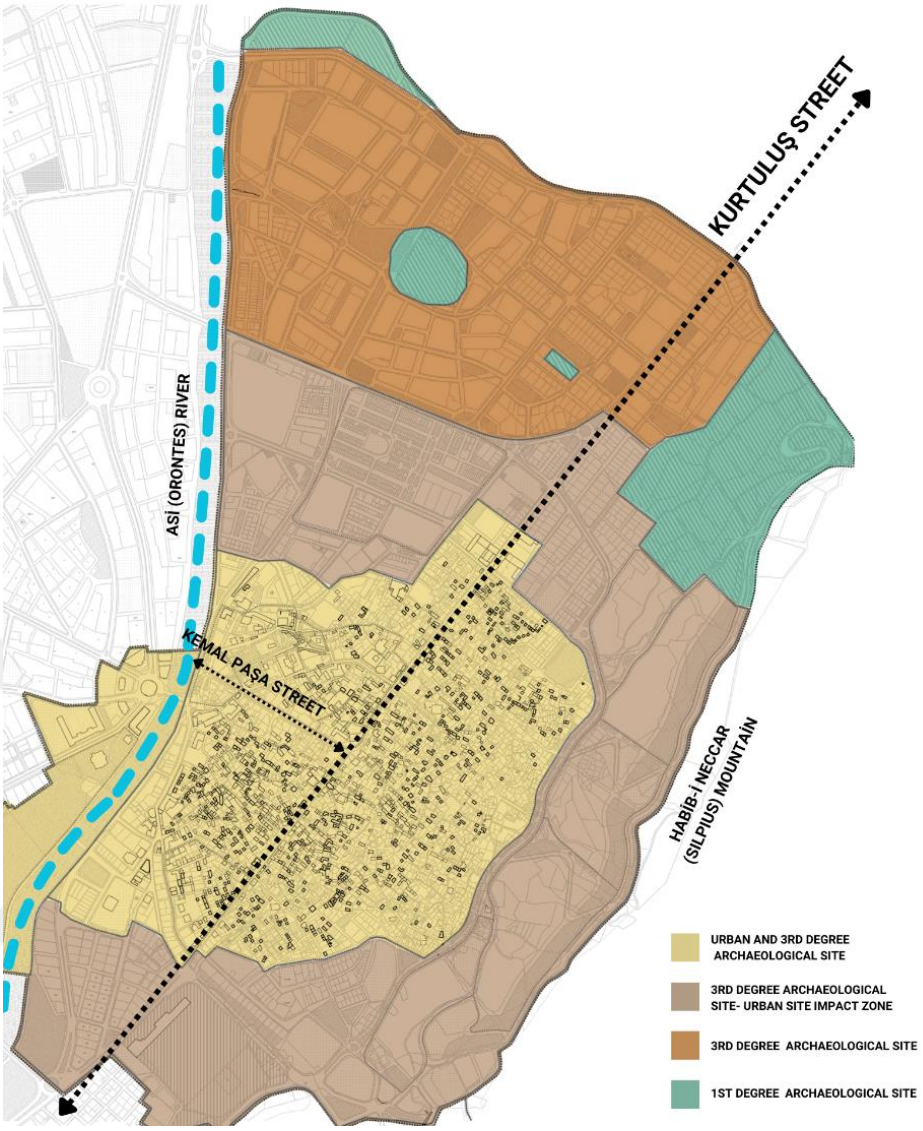

Figure 3.21 2009 Conservation Revision Zoning Plan of Antioch, 2009. Source: Prepared by the author.

3.3 Assesment of Chapter

The historical urban fabric of Antakya reflects the traces of various cultures and periods. Old Antakya is predominantly composed of traditional architectural elements such as narrow streets, courtyard houses, squares, fountains, and monumental structures, while New Antakya generally reflects the effects of modern urbanization. Historical streets, particularly Kurtuluş Street, are some of the city's most dynamic areas and important centers of the transportation network. The streets of Antakya have

developed an identity through their narrow and complex layout. The traditional houses of Antakya are notable for their gardened courtyards and cool, shaded spaces suited to the Mediterranean climate. The design of these houses is influenced by the climate, social traditions, and the legacies of Roman and Arab civilizations. Privacy is a key feature in these houses, which typically have inward-facing courtyards surrounded by high stone walls. Courtyards serve as the focal point of daily life. Antakya has historically been located along important trade routes, and the influence of various civilizations has evolved its commercial structure. During the Ottoman period, bazaars, bedestens, and inns became integral parts of the city's commercial life. The urban fabric, concentrated around commercial centers during the Ottoman period, gradually spread to other areas, blending residential and commercial spaces. By the late 19th century, trade and residential functions began to coexist within the same buildings.

Antakya became a city rich in Islamic architecture following the Muslim conquests, with mosques and prayer houses shaping its religious identity. Major religious sites, such as the Ulu Mosque and Habib-i Neccar Mosque, as well as neighborhood mosques, contributed to the religious fabric of the city. Antakya, a mosaic of religions, also bears traces of Christianity and Judaism. The Saint Pierre Church, a significant Christian center, and synagogues associated with the Jewish community are important parts of the city’s historical identity. In Turkish culture, hamams (public baths) hold significant importance, and in Antakya, they were built with a distinctive architectural style. The Antakya Inns, arranged around a central courtyard, integrate functions such as production, trade, and housing. Bedestens, unique to the Ottoman period, also served as key structures in the commercial life of the city. The rich historical and architectural features of these buildings constitute an important part of Antakya's cultural heritage.

During the Ottoman period, Antakya was predominantly shaped by Islamic architecture; however, with the modernization processes at the beginning of the 20th century, new architectural and urban planning approaches began to emerge in the city. Particularly during the French Mandate period, Western-influenced urbanization movements accelerated in Antakya. Accordingly, in 1932, René Danger prepared

Antakya's first city plan, reflecting the principles of European urban planning. This plan facilitated the construction of new public buildings, educational institutions, and residential structures. Under the French colonial administration, the city plan divided Antakya into two distinct zones on either side of the Asi River. The plan not only reorganized the physical environment but also aimed to establish a cultural and ideological separation. In this context, the Asi River was reimagined as a symbolic boundary that separated the two different worldviews defined as "East" and "West."

In the Republican era, the first urban development plan for Antakya was prepared in 1948, but it was not implemented. In 1957, Associate Professor Dr. Gündüz Özdeş prepared and approved a new urban development plan. This plan aimed at the development of the new Antakya across the Asi River, the redevelopment of the old city, and the expansion of the urban area toward the northeast and southwest. However, the new system envisioned by the 1957 plan led to a radical transformation of the traditional urban fabric. Since this plan did not focus on the preservation of the historic city center, a new urban development plan and Antakya Historic Site-specific Zoning Plan were prepared in 1978 by Yavuz Taşçı. This plan defined the boundaries of both urban and archaeological conservation areas.

In 1987, a new urban conservation and development plan was prepared by Dr. Nurcan Uydaş. While the 1987 conservation-oriented zoning plan provided a framework for preserving Antakya's historic urban fabric, inappropriate planning decisions and ineffective management led to significant deterioration. Consequently, in 2009, the conservation-oriented zoning plan was revised, and a new plan was prepared and approved. These revisions aimed to preserve Antakya's historical texture while addressing urban growth and emerging challenges more effectively.

Following the February 6 earthquakes, Antakya's historic city center suffered extensive destruction. In response, the Ministry of Culture and Tourism initiated new conservation-oriented zoning plan studies to restore the city and safeguard its historical heritage.

CHAPTER 4

FIELD STUDY IN ANTIOCH URBAN SITE AFTER THE 6 FEBRUARY 2023 KAHRAMANMARAŞ EARTHQUAKES

4.1 Türkiye as an Earthquake Country and 6 February 2023 Kahramanmaraş (Pazarcık and Elbistan) Earthquakes

Covering an area of 780,000 square kilometers, Türkiye frequently experiences natural disasters due to its geological, meteorological, and topographical characteristics. Disasters such as earthquakes, landslides, floods, and avalanches are common occurrences, often resulting in significant loss of life and property. In terms of earthquakes, Türkiye is situated in one of the world's "high-risk" zones [53]. The country lies on the Alpine-Himalayan seismic belt, one of the most prominent earthquake zones globally. Türkiye's geology has developed as a result of its location between the Eurasian (Europe-Asia) Plate to the north and the African and Arabian Plates to the south. The seismic activity in and around Türkiye is directly related to the complex tectonic interactions among these plates. Positioned on the highly seismically active Anatolian Plate, Türkiye has experienced numerous major earthquakes throughout its history (Figure 4.1) [54].

The earliest recorded earthquake in Türkiye occurred in 411 BC. Since 1900, Türkiye has experienced 20 earthquakes with a magnitude of 7 or greater, placing the country among the most earthquake-prone nations globally. Between 1900 and 2024, over 250 earthquakes have caused casualties or significant damage in Türkiye. Among these, the most devastating in terms of loss of life and severe destruction were the 2023 Kahramanmaraş Earthquake, the 1939 Erzincan Earthquake, and the 1999 Marmara Earthquake centered in Gölcük [54].

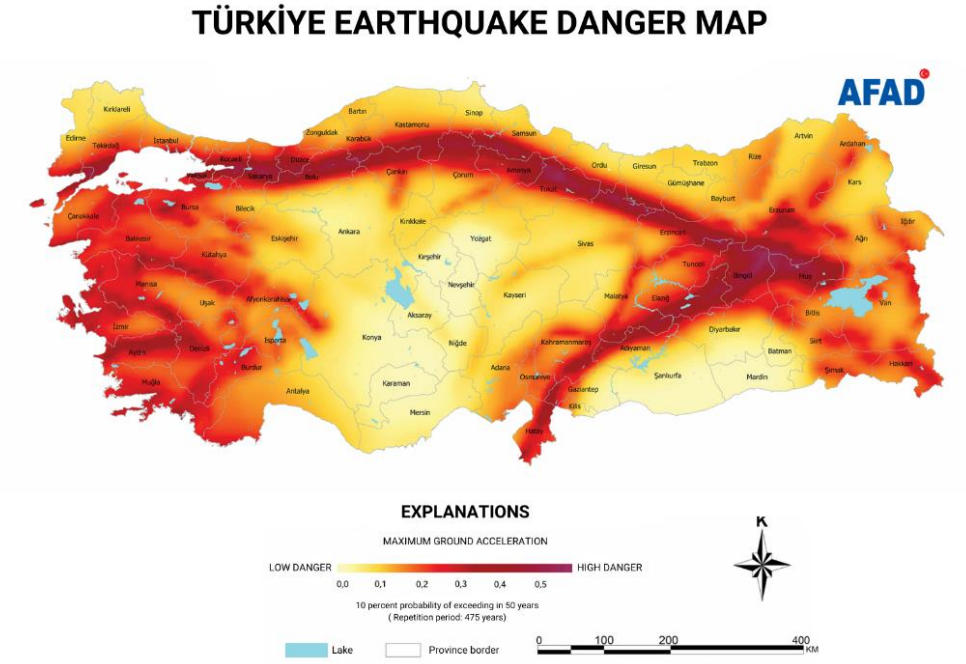

Figure 4.1 Türkiye Earthquake Map. Source: edit by author from [55].

The North Anatolian Fault (NAF) and the East Anatolian Fault (EAF) systems have caused numerous fatalities over the last 150 years with earthquakes exceeding a magnitude of 7. According to the Türkiye Earthquake Hazard Map, published and implemented in 2018, a significant portion of Türkiye is classified as high-risk in terms of seismic activity. This map is a clear indicator of the country's vulnerability to earthquakes and highlights the need for comprehensive disaster preparedness and risk mitigation strategies [54].

The East Anatolian Fault System (EAFS), which has historically been the source of many major earthquakes (Figure 4.2), experienced a particularly active seismic period during the 19th century. This period began with the 1789 Palu earthquake, followed by significant events in 1822, 1866, 1872, 1874, 1875, and 1893, and culminated with the 1905 Malatya earthquake. After this sequence, the fault appeared to enter a relatively quieter period. However, moderate-sized earthquakes occurred in 1971 and 1986, indicating that seismic activity continues to pose a potential risk in the region [56].

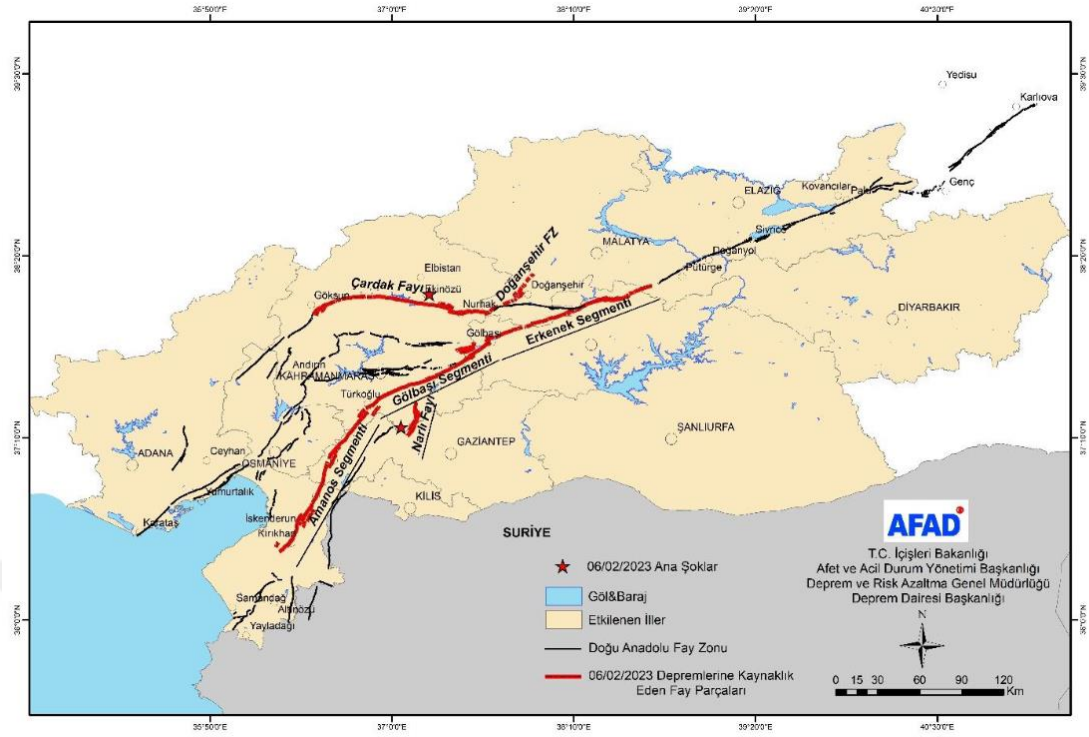

Figure 4.2 Map of Eastern Anatolia Fault Line. Source: [56].

The East Anatolian Fault System (EAFS) did not produce an earthquake with a magnitude greater than 7 during the 20th century. However, in the 2000s, a series of earthquakes with varying magnitudes occurred along the EAFS, causing significant damage. These include: 2003 Bingöl (Mw 6.3), 2005 Karlıova Bingöl (Mw 5.8), 2007 Doğanyol Malatya (Mw 5.7), 2010 Kovancılar Elazığ (Mw 6.1), 2020 Sivrice Elazığ (Mw 6.8), 2020 Karlıova Bingöl (Mw 5.7). The most recent and devastating events along the EAFS occurred on February 6, 2023, with the Pazarcık (Kahramanmaraş) earthquake at 04:17 (Mw 7.7) and the Elbistan (Kahramanmaraş) earthquake at 13:24 (Mw 7.6) (Figure 4.3). These earthquakes directly impacted 11 provinces in southeastern Türkiye, resulting in a catastrophic humanitarian, economic, and physical crisis [56].



Figure 4.3 Destruction after the Kahramanmaraş earthquakes. Source: [54].

On February 6, 2023, at 04:17 and 13:24 Turkish local time, two earthquakes with magnitudes of Mw 7.7 and Mw 7.6 struck, with epicenters in Pazarcık (Kahramanmaraş) and Elbistan (Kahramanmaraş), respectively. Both earthquakes were felt with extreme intensity across 11 provinces (Figure 4.4), causing significant loss of life and severe damage. On February 20, 2023, at 20:04 Turkish local time, another earthquake with a magnitude of Mw 6.4 occurred, with its epicenter in Yayladağı, Hatay. The earthquake impacted an area of 108,812 km², encompassing the provinces of Kahramanmaraş, Hatay, Adıyaman, Gaziantep, Malatya, Kilis, Diyarbakır, Adana, Osmaniye, Şanlıurfa, and Elazığ, located in the Eastern and Southeastern Anatolia regions. This series of earthquakes has been recorded as the most devastating earthquake swarm in Türkiye's history. The first earthquake was more impactful in Kahramanmaraş and Hatay, while the second one was particularly destructive in Malatya [56, 54].



Figure 4.4 11 provinces adversely affected by the 6 February Kahramanmaraş Earthquakes. Source: [56].

As a result of the earthquakes, official reports indicate that 53,537 people lost their lives, 107,213 people were injured, over half a million buildings were either destroyed or severely damaged, and significant financial losses occurred (Figure 4.5). According to analyses conducted by various institutions, including İstanbul Technical University (İTÜ) and Middle East Technical University (ODTÜ), the following factors were identified as critical in the collapse of buildings: the intensity of ground motion, low load-bearing capacity of the soil under the foundations, deficiencies in the design and construction quality of the buildings, the age of the buildings, non-compliance with building regulations, and differences in floor levels of adjacent buildings constructed in a row [54].

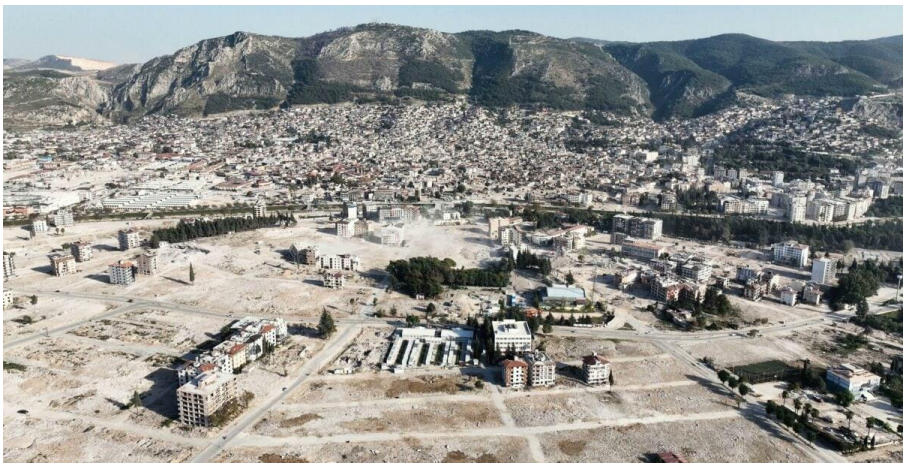

Figure 4.5 A shot from the huge debris in Antakya after the Kahramanmaraş earthquakes. Source: [57].

4.2 Earthquake History of Antakya

An examination of Antakya's seismic history reveals that the city has frequently been subjected to severe earthquakes throughout its existence. This is due to its location at the northern end of the active Jordan Rift Valley fault line, as well as its position in a region influenced by various tectonic movements. Throughout the city's history, some of the earthquakes were of low intensity, while others were so destructive that they brought everything to ruin [3]. Antakya has experienced devastating earthquakes approximately every 110–130 years, with more than ten major earthquakes occurring during the first five centuries CE. The 6th century, in particular, was one of the most challenging periods for the city, as it suffered a fire in 525 and devastating earthquakes in 526, 528, 551, 557, and 577 [16].

Throughout antiquity and subsequent periods, Antakya continued to experience destructive earthquakes approximately every 100–150 years. During the Ottoman period, the city was severely shaken by earthquakes in 1615, 1822, and 1872. These events partially destroyed the city walls, caused significant loss of life, and left lasting impacts on the community [16]. Due to the consecutive earthquakes and wars in 1615, 1822, and 1872, Antakya was reduced to ruins, and the population decline transformed the city into a town [28]. Despite being devastated and rebuilt numerous times since its founding, Antakya has endured and been reconstructed after each catastrophe.

4.3 The Effect of 6 February 2023 Kahramanmaraş Earthquakes on Cultural Heritage

Earthquakes, along with irreparable human losses and injuries, cause significant cultural destruction in cities that are rich in cultural heritage, particularly those that have accumulated traces of ancient civilizations and are enriched by cultural diversity. Examples of earthquakes that have caused large-scale destruction in significant cultural heritage areas include the 2003 Bam earthquake in Iran, the 2008 Wenchuan earthquake in China, the 2015 Nepal earthquake, the 2016 earthquakes in Italy, and the February 6, 2023 earthquakes in Türkiye.

In the 11 provinces, referred to as "disaster zones," that bear the traces of ancient civilizations and represent rich cultural diversity, there are 4 World Heritage Sites, 3,715 protected areas, and 7,987 registered cultural heritage properties, many of which have been negatively affected by the earthquake. Beyond the official statistics, many structures, archaeological sites, rural and urban landscapes, cultural heritage areas, and intangible cultural heritage elements that are not registered but require protection have also been impacted. Many monumental buildings and examples of civil architecture have suffered severe damage, with some partially or completely destroyed. Significant losses have occurred in urban and rural structures, as well as in cultural landscape components. In this region, with its multi-layered and rich cultural accumulation, the destruction of buildings covering previously hidden archaeological layers has made these layers accessible, and the ground conditions in areas containing cultural heritage sites and other settlements have changed [58].

The dangers faced by cultural heritage buildings following the earthquake, which continue to persist, have been outlined in a report published by the ICOMOS Turkish National Committee as follows [58]:

- The loss of parts of cultural heritage structures in the debris and the alteration of their locations without expert supervision.
- Demolition of surviving structures without temporary bracing.
- The destruction of archaeological layers close to the surface during debris removal.
- The lack of thorough damage assessment and failure to learn from past mistakes.
- Separation of cultural layers through individual restorations without holistic rehabilitation programs.
- The neglect of civil architecture examples and structures beyond monumental and symbolic buildings.
- The loss of valuable unregistered structures in cities and especially rural settlements.

- Erasing historical traces in new constructions and urban designs, breaking ties with historical centers.

- The loss of the historical identity of cities, weakening the bond between people and their cities, and the depopulation of historical city centers.

Immediately after the earthquake, the Ministry of Culture and Tourism's initial access to the area was through museums and monumental structures. While the assessment of damage to monumental structures and the implementation of emergency preservation measures are of great importance, this issue should not be limited solely to monumental buildings. There are significant examples of civil architecture in both urban and rural fabric, which are at risk of destruction due to the reasons mentioned above. In multi-layered settlements affected by the earthquake, especially in Antakya (Figure 4.6), it is necessary to conduct new discoveries and evaluations within the scope of urban archaeology [58].



Figure 4.6 After the 6 February Kahramanmaras Earthquakes, the situation in Antakya. Source: [59].

4.4 Antioch Urban Site Field Study

Cultural heritage refers to all movable and immovable assets, whether above ground, underground, or underwater, that have scientific and cultural value and have been part of social life in prehistoric and historical periods, related to science, culture, religion, and fine arts [60]. Sites and monuments constitute immovable cultural assets. Monuments can be individual structures or groups of buildings, and they can also be in the form of large complexes. Sites are areas with features that should be preserved, and these can be natural, man-made, or a combination of both. Based on their characteristics, sites are classified into five groups: natural, historical, archaeological, urban, rural, and mixed. Urban sites are defined as streets, neighborhoods, or areas that have preserved the harmonious layout, architectural integrity, and amenities of ancient cities [61].

Antakya, with its urban conservation area and archaeological site areas, has gained the status of a complex site (Figure 4.7). The city has produced unique historical data through its residential areas *(traditional Antakya houses),* commercial areas *(bazaar, coffeehouse, shops, accommodations),* monumental structures *(complexes, khans,, baths, soap factories, fountains, aqueducts, official buildings)*, religious structures *(mosques, masjids, tombs, synagogues, and churches)*, and archaeological site areas.

An examination of the inventories prepared after the zoning plans and the most recent Conservation-Based Zoning Plan approved in 2009 revealed that there are a total of 462 registered structures within the Antakya Urban Conservation Area (Figure 4.8). The majority of these structures are traditional Antakya houses. Following residential buildings, mosques are the most numerous structure type. Other structures include churches, synagogues, inns, baths, tombs, and soap factories. In addition to the 462 registered buildings, the urban conservation area also contains historical fountains, aqueducts, and Roman walls.

Antakya was severely affected by the major earthquakes centered in Kahramanmaraş on February 6, 2023. As the central city of Hatay province, Antakya experienced significant loss of life and property, suffering extensive damage. Following these devastating earthquakes, there was substantial destruction and loss in the city's cultural

heritage structures, which serve as the memory of Antakya. Key heritage structures within the Antakya urban conservation area, including mosques, churches, synagogues, inns, baths, bazaars, soap factories, ancient structures, traditional houses, commercial centers, and other significant buildings, were deeply affected**.**

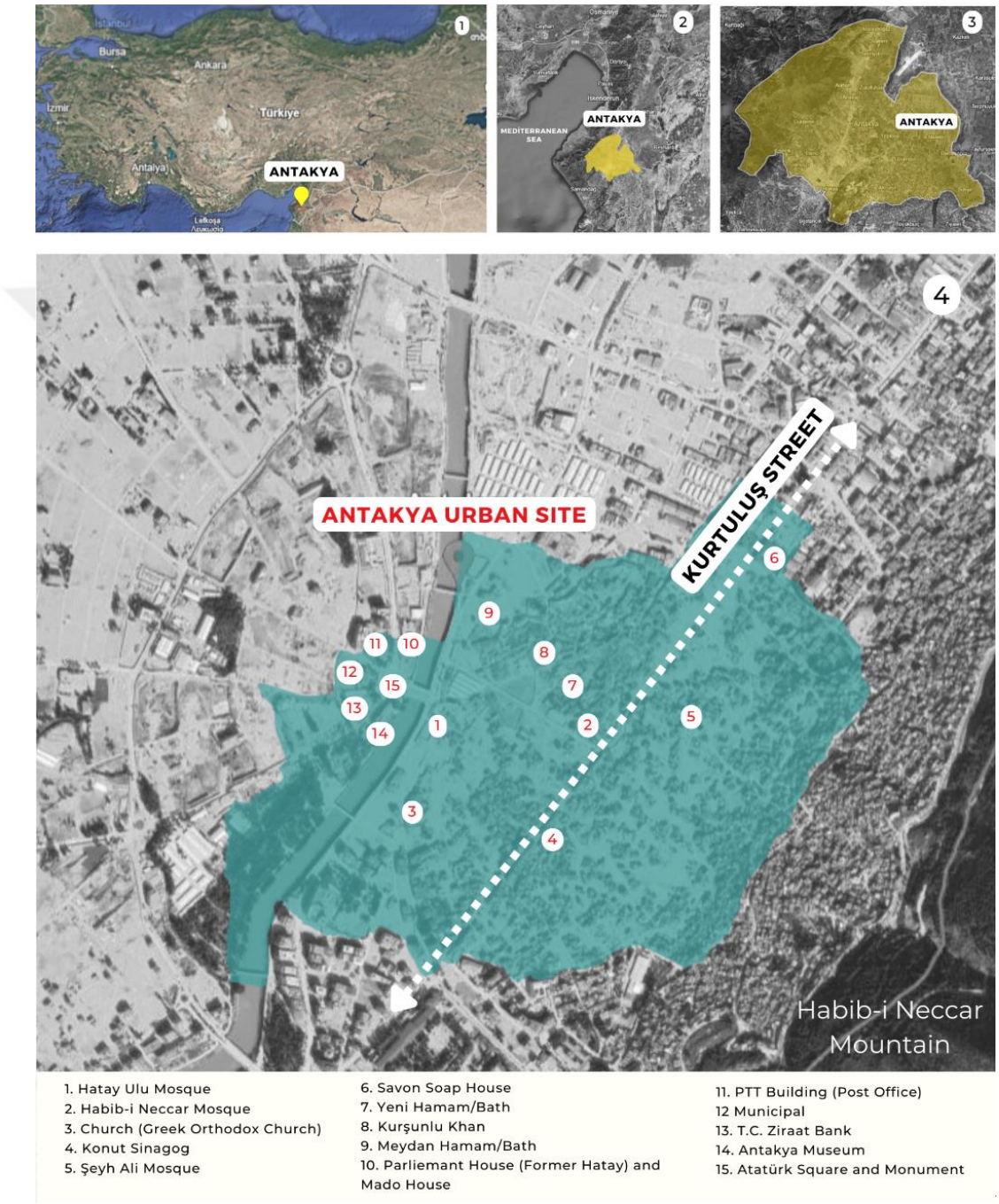

Figure 4.7 Approach maps to Antakya urban site area. Source: The maps was created by the author using Google Earth.

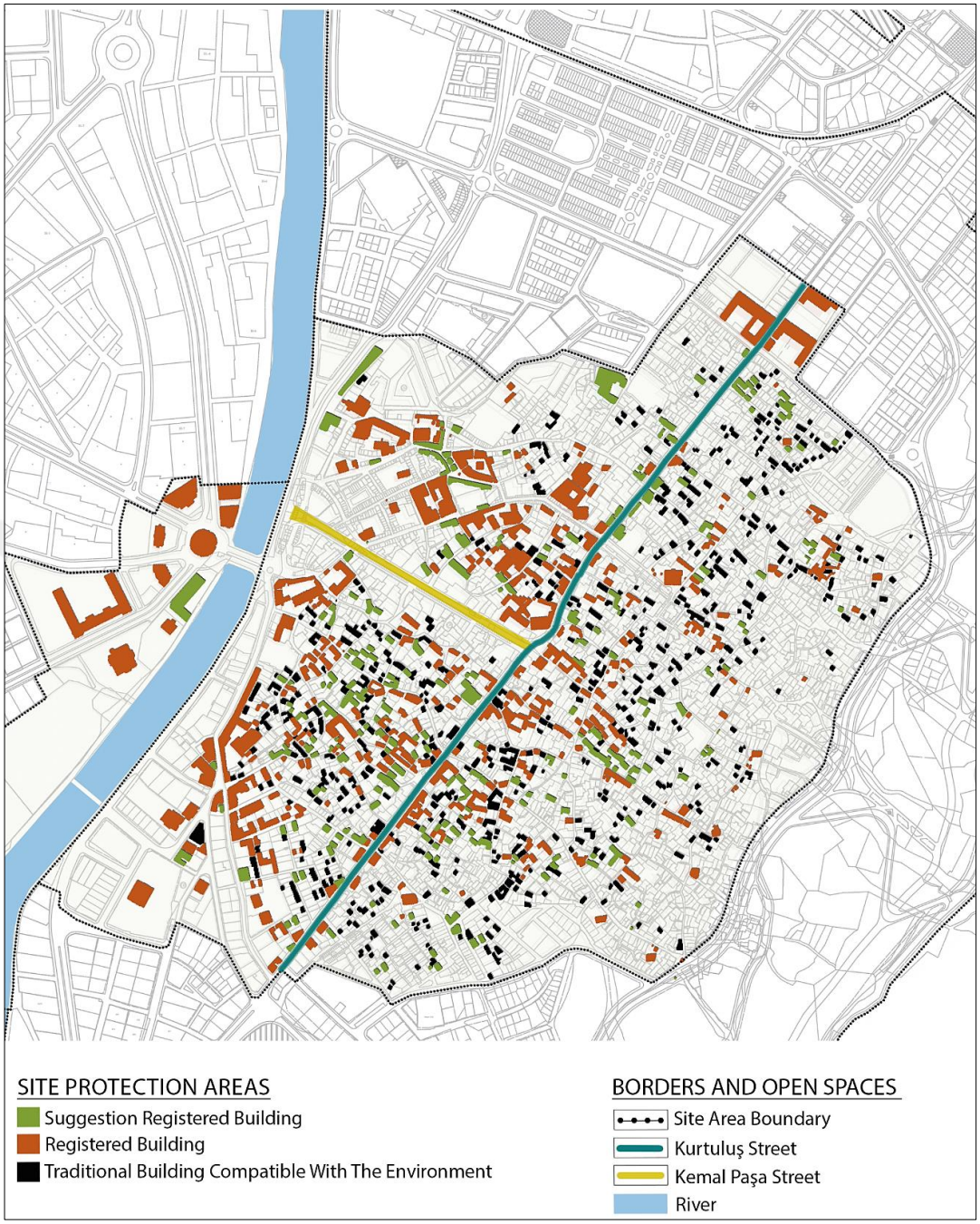

Figure 4.8 462 registered buildings located within the urban protected area. (In addition to registered buildings, suggestion registered buildings and traditional buildings compatible with the environment are also shown on the map). Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive.

A field study was conducted based on the most recent Conservation Zoning Plans for the Antakya (Antioch) Urban Conservation Area, which were derived from the Hatay Cultural Inventory prepared by the Hatay Governorate in 2011 and the archives of A Proje Architecture Office. In this field study, damage assessments were carried out for 250 registered buildings of different functions and characteristics within the urban conservation area (Figure 4.9). The inspections confirmed the scale and depth of the destruction that occurred in the region.

In the study, the 250 buildings examined are divided into two groups and categorized based on their functions (Figure 4.10). The first group consists of 44 monumental structures, while the second group includes 206 civil architecture structures and various buildings with different functions. In the first group, the monumental structures include 19 mosques, 5 masjids, 2 churches, 3 tombs, 4 baths, 4 khans, 5 soap factories, 1 covered market (bedesten), and 1 synagogue. The second group, which includes civil architecture buildings, consists of 13 commercial structures, 22 mixed-use residential and commercial buildings, 158 residential buildings, 1 Atatürk Monument and Square, and 12 buildings with different functions (e.g., Hatay Assembly Building, Post Office Building, Municipality Building, Dispensary, Primary School, Police Station, etc.) (Figure 4.11), (Figure 4.12). The naming of the examined buildings is based on the Cultural Inventory. For example, the building known as the Rum Orthodox Church is listed as “Kilise” (Church) in the cultural inventory; the building referred to as Adalı Konağı is listed as “Mado Evi” (Mado House); the area known as Cumhuriyet Square is listed as “Atatürk Meydanı” (Atatürk Square); and the building known as the Hatay Esnaf ve Sanatkârlar Odaları is listed as “Trahom Savaş Dispanseri” (Trachoma War Dispensary) in the inventory. The locations of 44 monumental buildings in the 1st group and 12 buildings with different functions in the 2nd group within the urban site area can be examined in (Figure 4.13).

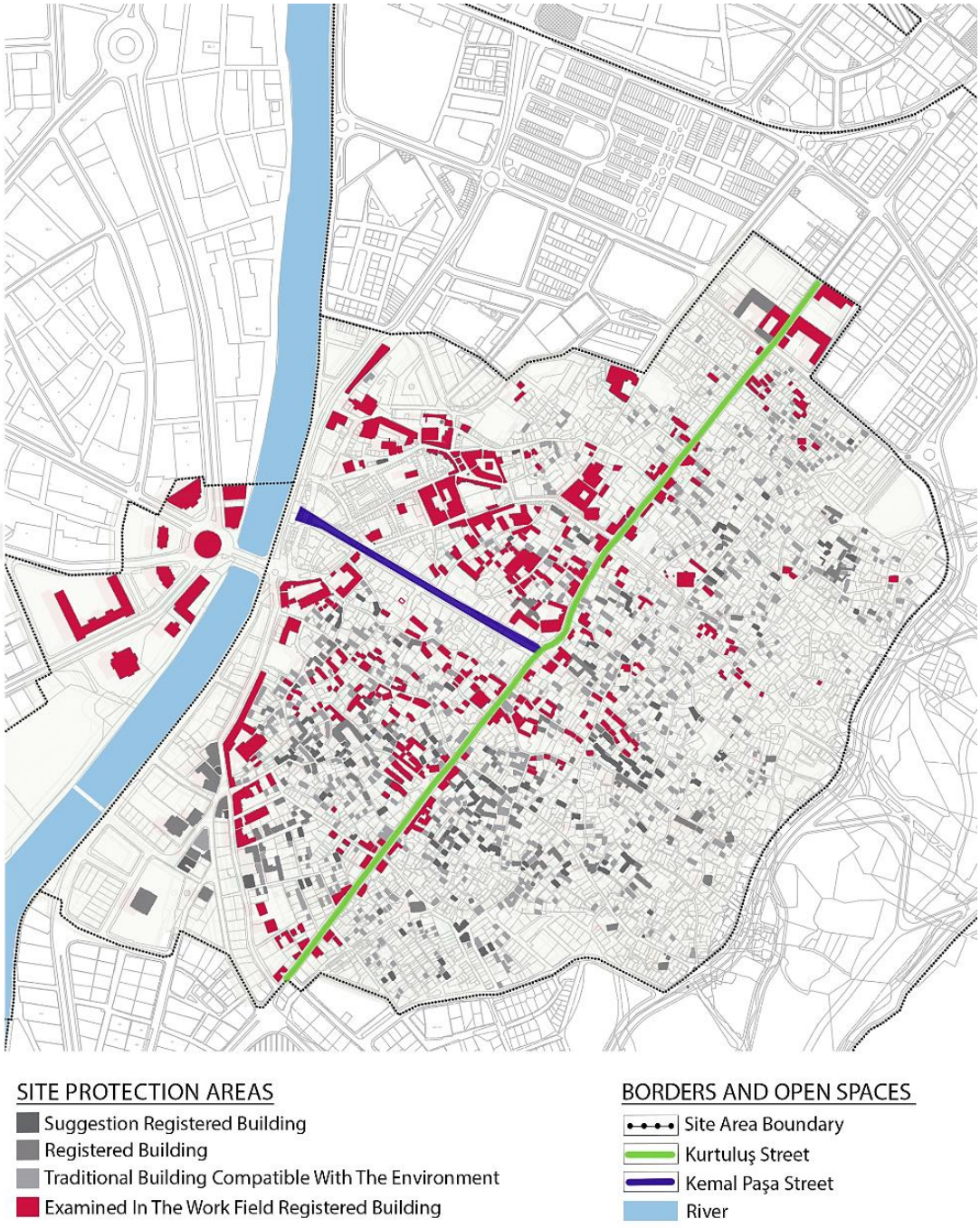

Figure 4.9 Map of 250 registered buildings examined in the field. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive.

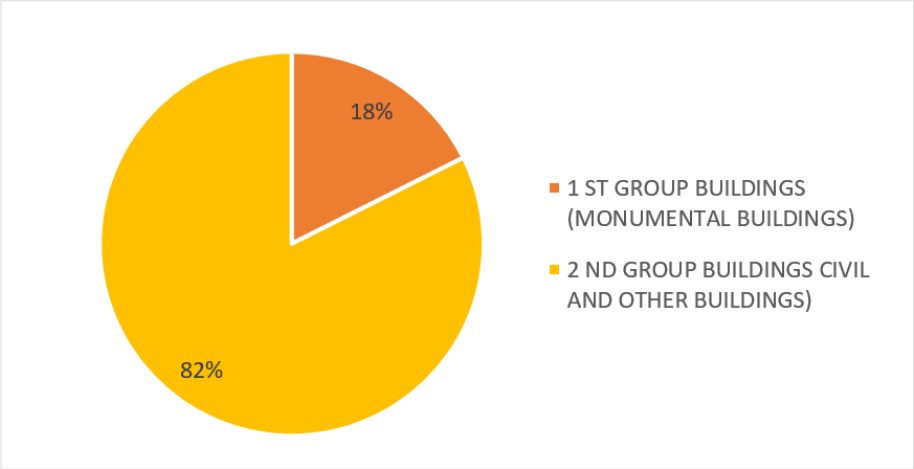

Figure 4.10 Building groups analysed in the field

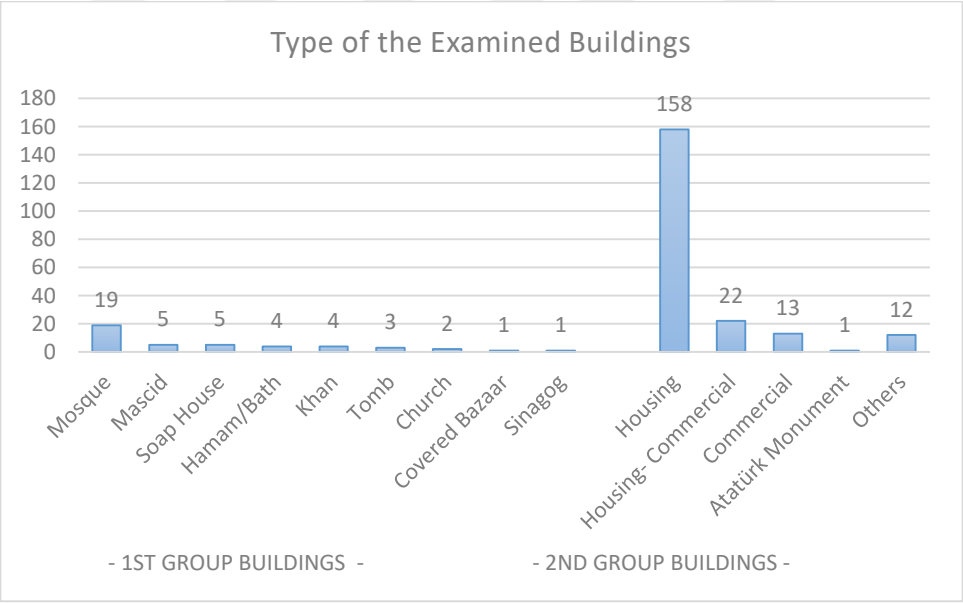

Figure 4.11 Building types analysed in the field.

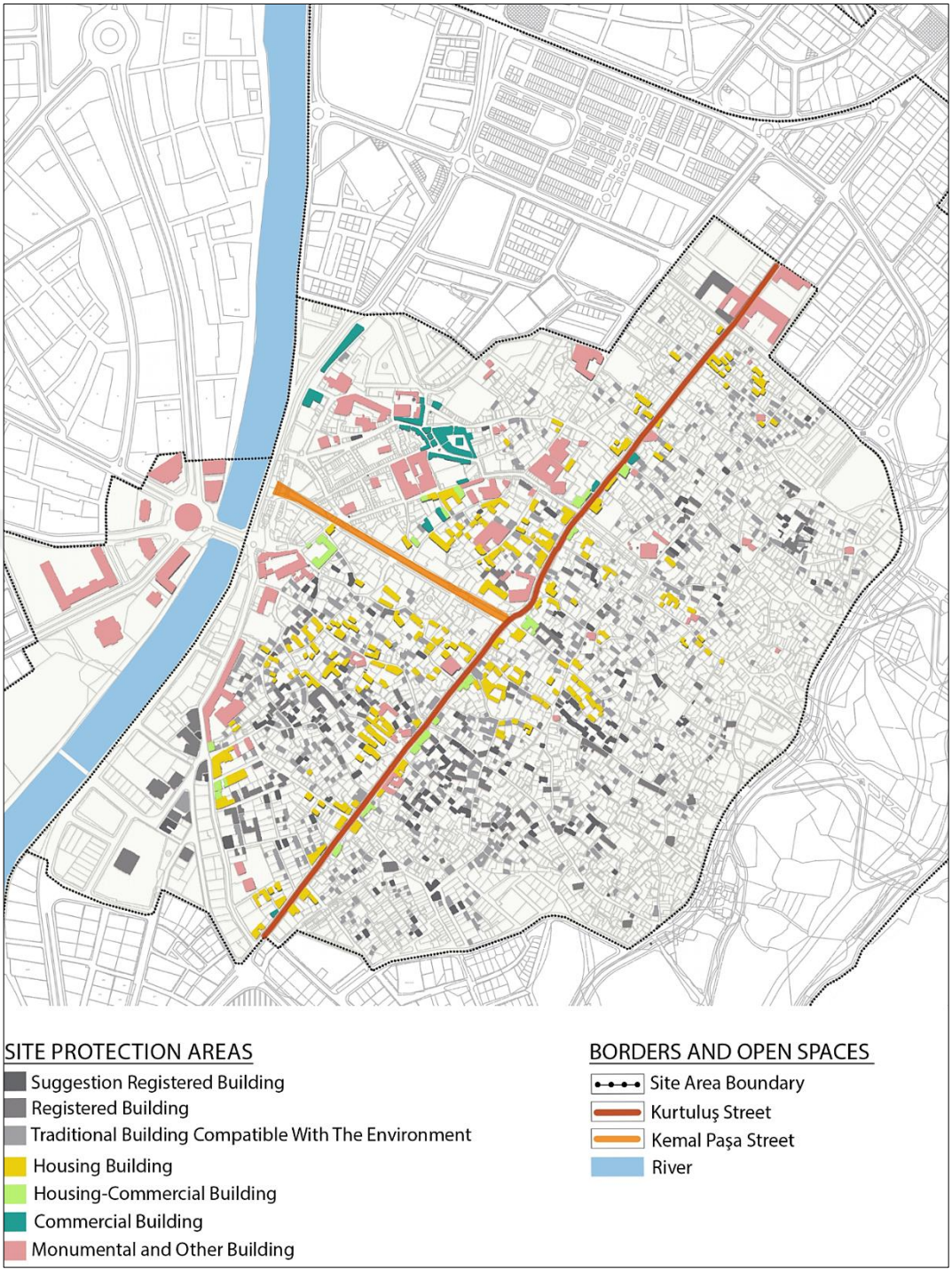

Figure 4.12 Type of buildings examined in the field. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive.

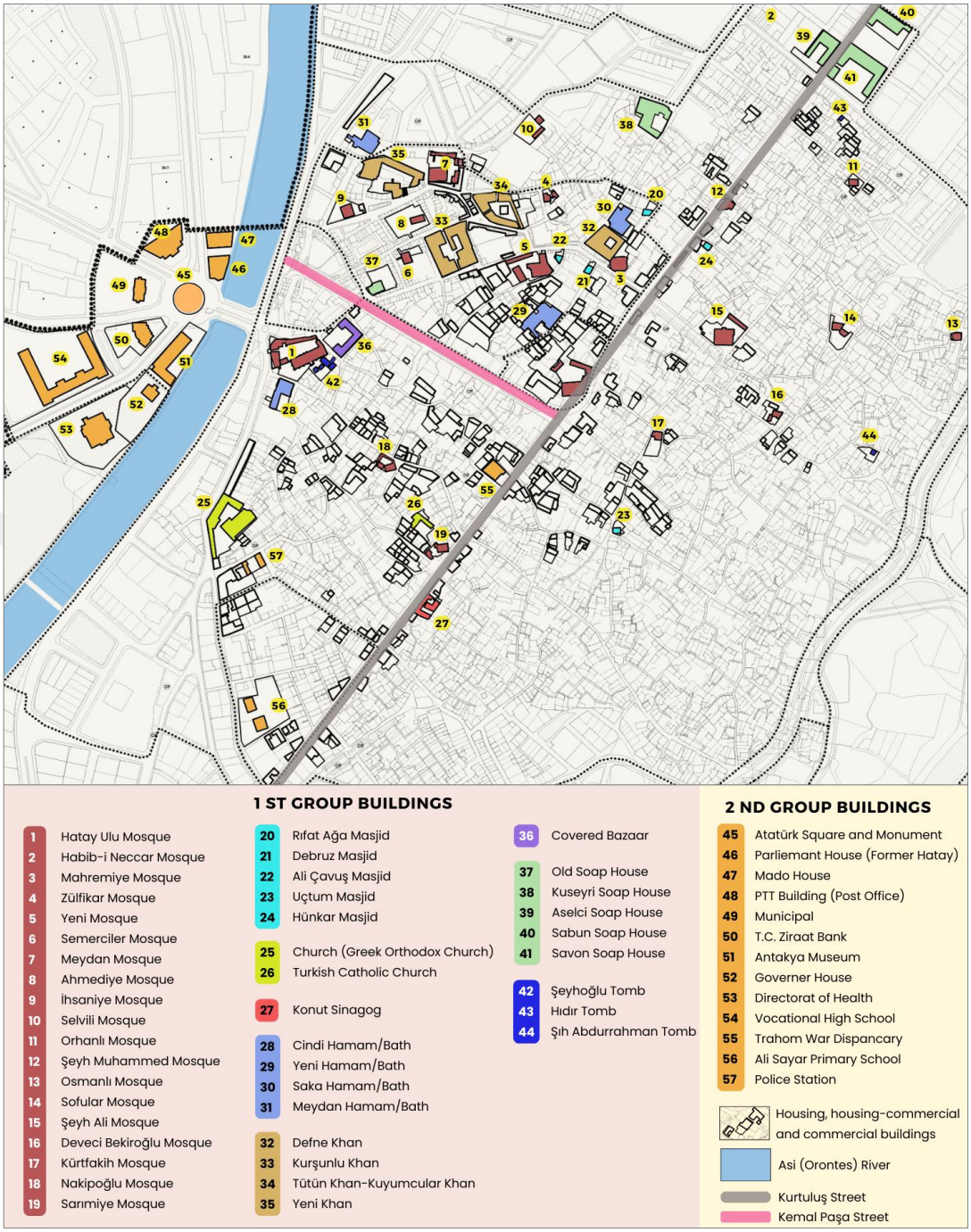

Figure 4.13 Detailed location map of the buildings examined in the Antakya urban site area. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive.

4.5 Damage Assessment Criteria of Field Study

Damage refers to all forms of losses that weaken both the structural (load-bearing) and non-structural systems of buildings, caused by natural events (such as earthquakes, floods, landslides, or wind) or human-induced events (such as explosions, fires, or impacts). These losses manifest as physical phenomena such as cracking, breaking, collapse, or overturning [62]. Damage typically reduces or completely eliminates the functionality, durability, and safety of a structure. Conducting damage assessments and evaluating the current state of a building after natural disasters are critically important for guiding reconstruction and repair processes and minimizing potential risks.

Various studies have been conducted on the impacts of earthquakes on historical cities. Guidoboni and Ferrari (2000) [63] examined the effects of earthquakes on historical cities using the example of Italy. Finkel and Ambraseys (1997) [64] investigated the 1894 Marmara Sea earthquake and its impact on historical buildings around Istanbul. Abdessemed-Foufa and Benouar (2010) [65] studied the 1716 Algeria earthquake and its effects, while Solares and Arroyo (2004) [66] analyzed the 1755 earthquake and its impacts in Spain. Kocaman (2023) [67], Varnacı Uzun and Somuncu (2023) [68], Sezgin and Karagöz (2023) [69], Aktemur and Ünlükaplan (2024) [70] and Soyluk and Köse (2024) [71] have conducted various studies on the impacts of the Kahramanmaraş earthquakes on cultural heritage sites.

Post-earthquake damage assessment is one of the most important preliminary stages in determining restoration strategies. Post-earthquake damage assessment and evaluation of structures' usability are important in earthquake-affected countries such as Italy, Japan, and Türkiye. In Italy, the process after the 1570-74 Ferrara earthquakes, 1661 Tuscany earthquake, 1781 Faenza earthquake, 1887 Liguria earthquake, 1968 Belice, 1976 Friuli, 1980 Irpinia and 1984 Abruzzo earthquakes is important in terms of damage assessment methods and evaluation methods [72].

In Italy, after the 1997 Umbria-Marche and 1998 Pollino earthquakes, an action plan was initiated to bring order to damage and safety assessment. Various forms were issued for damage assessment. The I Level form, prepared after the 1983 Parma and 1990 S. Lucia earthquakes, analyzed the damage in 6 levels from A to F (Table 1).

Table 4.1 Masonry bearing walls damage classification (I Level GNDT- Ministry of Labour, Civil Protection- form). Source: [72].

Level	Severity	Description
A	None	No visible damage
B	Slight	Any crack up to 1 mm
C	Medium	Cracks up to 4 mm when types 1,5,6; up to 2 mm when types 2,3,7; up to 1 mm when types 4, 8 or 9.
D	Heavy	Cracks up to 10 mm when types 1,5,6; up to 5 mm when types 2,3,7; up to 1 mm when types 4, 8 or 9.
E	Very heavy	Cracks and damages higher than D.
F	Destruction	

The 1997 Umbria- Marche earthquake damage classification is characterized by simplicity, immediate comprehensibility, and continuity with previous damage classifications. The damage levels have been reduced to three for easy analysis but with more detailed descriptions. They are grouped into damage to structural elements and damage to non-structural elements. In this forms, the components (vertical structures, horizontal structures, stairs and pre-existing damage) are evaluated with damages levels; very heavy/collopase, medium/heavy and null/slight (Table 4.2). In 1998 Pollino earthquakes, making use of the 1997 experience, the form used in Marche Region was improved. The null damage has been separated from the slight damage, as it was impossible to identify the undamaged buildings. Moreover, the roof and unreinforced masonry infill walls, common in Italian RC buildings, have been included in the damageable building components (Table 4.3) [72].

Table 4.2 Damage classification used in Marche Region after 1997 Umbria-Marche. Source: [72].

Component \ Level		DAMAGE								
		D4-D5 Very heavy or collapse			D2-D3 Medium or heavy			D0-D1 Null or slight		
		> 2/3	1/3 - 2/3	< 1/3	> 2/3	1/3 - 2/3	< 1/3	> 2/3	1/3 - 2/3	< 1/3
		A	B	C	D	E	F	G	H	I
1	Vertical structures	❍	❍	❍	❍	❍	❍	❍	❍	❍
2	Horizontal structures	❍	❍	❍	❍	❍	❍	❍	❍	❍
3	Stairs	❍	❍	❍	❍	❍	❍	❍	❍	❍
4	Pre-existing damage	❍	❍	❍	❍	❍	❍	❍	❍	❍

Table 4.3 Damage classification in 1998 Pollino. Source: (Goretti & Di Pasquale, 2002).

Component \ Level Extension		DAMAGE									
		D4-D5 Very heavy or collapse			D2-D3 Medium or heavy			D1 Slight			D0 Null
		> 2/3	1/3 - 2/3	< 1/3	> 2/3	1/3 - 2/3	< 1/3	> 2/3	1/3 - 2/3	< 1/3	
		A	B	C	D	E	F	G	H	I	L
1	Vertical structures	□	□	□	□	□	□	□	□	□	❍
2	Horizontal structures	□	□	□	□	□	□	□	□	□	❍
3	Stairs	□	□	□	□	□	□	□	□	□	❍
4	Roof	□	□	□	□	□	□	□	□	□	❍
5	URM Infill walls	□	□	□	□	□	□	□	□	□	❍
6	Pre-existing damage	□	□	□	□	□	□	□	□	□	❍

After the 1999 earthquakes that hit northwestern Türkiye (Aydan et al., 2000), the Government of the Republic of Türkiye changed its policy on state aid to earthquake victims whose houses were destroyed and damaged during seismic events. The new regulation pointed to compulsory state insurance of structures. As a result, the Turkish Catastrophe Insurance Pool (TCIP) was established in 2000 to administer compulsory earthquake insurance. In 2002, TCIP commissioned researchers to develop a consistent, fast, easy-to-implement damage assessment method that could be utilized after an earthquake. Accordingly, a methodology (Table 4.4) that fulfills the basic characteristics expected from a reliable damage assessment algorithm was developed for reinforced concrete and masonry structures, Türkiye's two most common building systems [73]. During the development of the methodology, various guidelines for post-earthquake damage assessment in different countries were used [74, 75, 76, 77].

Table 4.4 The revised version of TCIP Damage Assessment System (Revised by the Author).

Level	Name	Definition
0	Undamaged Building	Where there is no earthquake damage in vertical and horizontal load-bearing structural members
1	Slightly damaged Building	The vertical and horizontal members that form the structural system of the building suffered limited damages in such a way that the damaged members either do not entail any repair or require relatively simple repair relatively simple repair applicators
2	Moderately damaged Building	Due to damages in the vertical and horizontal structural membes, the performanca and capacity of the structure can be decrased to a certain degree in comparison to that of pre-earthquake condition
3	Heavily damaged Building	The damages in the structural members can reach to severe levels. In addition, many of the non-structural members of the building are substantially damaged. The building may have lost a signicant amount of its pre-eartquake performance and capacity.
4	Building to be urgently demolished	The building where a partial collapse has occured in at least one storey, or the building exhibiting easily observable residual displacements are classified in this category. The existing condition of this buildings poses danger to the safety of life and property.
5	Collaped Building	The structural system lost its integrity and the building lost its integrity and the building is collaped partially or comltely. The vertical and horizontal load bearing capacity of the building is entirely eliminated.

The damage assessment of the buildings examined in this study was made based on these studies, however; since the study was conducted in September, some of the buildings that needed to be urgently were demolished, and therefore, no examination was made under the title of "building to be urgently demolished". The investigations were evaluated according to the criteria 0 (undamaged building), 1 (slightly damaged building), 2 (moderately damaged building), 3 (heavily damaged building) and 4 (collapsed building). The damage assessments fulfilled for 1st group and 2nd group structures can be examined in Table 4.5 and Table 4.6:

Table 4.5 The damage degree of the 1st group buildings (monuments). Source: Prepared by the author.

NO:	TYPE OF BUILDING	INVENTORY NUMBER	EXPLANATION	DAMAGE LEVEL
1	MOSQUE	B11	Hatay Ulu Mosque	4
2	TOMB	B12	Şeyhoğlu Tomb	4
3	HAMAM/BATH	B13	Cindi Hamam/Bath	3
4	CHURCH	B15	Church	4
5	COVERED BAZAAR	B16	Covered Bazaar	3
6	MOSQUE	B21	Habib-İ Neccar Mosque	3
7	HAMAM/BATH	B31	Yeni Hamam/Bath	4
8	MOSQUE	B45	Mahremiye Mosque	4
9	KHAN	B47	Defne Khan	3
10	HAMAM/BATH	B48	Saka Hamam/Bath	3
11	MASJID	B49	Rıfat Ağa Masjid	1
12	MOSQUE	B52	Zülfikar Mosque	4
13	MASJID	B53	Debruz Masjid	2
14	MASJID	B54	Ali Çavuş Masjid	1
15	MOSQUE	B59	Yeni Mosque	4
16	SOAP HOUSE	B71	Old Soap House	1
17	MOSQUE	B72	Semerciler Mosque	4
18	KHAN	B73	Kurşunlu Khan	3
19	KHAN	B75	Tütün Khan-Kuyumcular Khan	3
20	MOSQUE	B79	Meydan Mosque	4
21	KHAN	B81	Yeni Khan	4
22	MOSQUE	B82	Ahmediye Mosque	3
23	MOSQUE	B83	İhsaniye Mosque	4
24	HAMAM/BATH	B84	Meydan Hamam/Bath	4
25	MOSQUE	B87	Selvili Mosque	2
26	SOAP HOUSE	B88	Kuseyri Soap House	4
27	SOAP HOUSE	B96	Aselci Soap House	3
28	SOAP HOUSE	B97	Sabun Soap House	4
29	SOAP HOUSE	B98	Savon Soap House	1
30	TOMB	B99	Hıdır Tomb	1
31	MOSQUE	B101	Orhanlı Mosque	3
32	MOSQUE	B105	Şeyh Muhammed Mosque	3
33	MOSQUE	B111	Osmanlı Mosque	3
34	MOSQUE	B112	Sofular Mosque	1
35	MOSQUE	B113	Şeyhali Mosque	3
36	TOMB	B118	Şıh Abdurrahman Tomb	2
37	MOSQUE	B120	Deveci Bekiroğlu Mosque	3
38	MOSQUE	B122	Kürtfakih Mosque	3
39	MASCID	B124	Uçtum Masjid	0
40	MOSQUE	B148	Nakipoğlu Mosque	4
41	MOSQUE	B156	Sarımiye Mosque	3
42	SINAGOG	B171	Konut Sınagog	0
43	MASJID	B183	Hünkar Masjid	1
44	CHURCH	B203	Türk Katolik Church	0

Table 4.6 Damage degree of the 2nd group buildings (houses and commercial buildings). Source: Prepared by the author.

NO:	TYPE OF BUILDING	INVENTORY NUMBER	EXPLANATION	DAMAGE LEVEL
1	MONUMENT	B1	Atatürk Square and Monument	0
2	PARLIAMENT HOUSE	B2	Parliemant House (Former Hatay)	4
3	PUBLIC	B3	Mado House	4
4	PUBLIC	B4	PTT Building (Post Office)	3
5	PUBLIC	B5	Municipal	3
6	BANK	B6	T.C. Ziraat Bank	4
7	MUSEUM	B7	Antakya Museum	1
8	PUBLIC	B8	Governer House	2
9	HEALTH SERVICE	B9	Directorat of Health	3
10	SCHOOL	B10	Vocational High School	3
11	COMMERCIAL	B14	Commercial next to Orthodox Church	4
12	HOUSING	B17	Housing	4
13	HOUSING	B18	Housing	4
14	HOUSING	B19	Ramize Karabay House	1
15	HOUSING	B20	House	1
16	HOUSING	B22	Ülkü Ocakları Building	1
17	HOUSING	B23	Housing	1
18	HOUSING	B24	Housing	1
19	HOUSING	B25	Housing	3
20	HOUSING	B26	Housing	2
21	HOUSING	B27	Housing	0
22	HOUSING	B28	Housing	3
23	HOUSING	B29	Housing	4
24	HOUSING	B30	Housing	4
25	HOUSING	B32	Housing	3
26	HOUSING	B33	Housing	4
27	HOUSING-COMMERCIAL	B34	Housing-Commercial	1
28	HOUSING-COMMERCIAL	B35	Housing-Commercial	4
29	COMMERCIAL	B36	Commercial	4
30	HOUSING	B37	Housing	4
31	HOUSING	B38	Housing	2
32	HOUSING	B39	Housing	4
33	HOUSING-COMMERCIAL	B40	Housing-Commercial	4
34	HOUSING	B41	Housing	3
35	HOUSING	B42	Housing	4
36	HOUSING	B43	Housing	3
37	HOUSING	B44	Housing	1
38	HOUSING	B46	Uludağ House	4
39	HOUSING	B50	House-Fountain	1
40	HOUSING	B51	Chemistry House	3
41	HOUSING	B55	Housing	4
42	HOUSING	B56	Sedat Adali House	4
43	HOUSING	B57	Housing	4
44	HOUSING	B58	Housing	4
45	HOUSING	B60	Housing	4
46	HOUSING	B61	Housing	4
47	HOUSING	B62	Housing	4
48	HOUSING-COMMERCIAL	B63	Housing-Commercial	4
49	COMMERCIAL	B64	Commercial	4
50	HOUSING-COMMERCIAL	B65	Housing-Commercial	1
51	HOUSING	B66	Housing	4

Table 4.6 (continued): Damage degree of the 2nd group buildings (houses and commercial buildings). Source: Prepared by the author.

52	HOUSING-COMMERCIAL	B67	Housing-Commercial	4
53	HOUSING	B68	Kuseyri House	0
54	HOUSING-COMMERCIAL	B69	Housing-Commercial	3
55	COMMERCIAL	B70	Commercial	1
56	COMMERCIAL	B74	Commercial	1
57	COMMERCIAL	B76	Commercial	3
58	COMMERCIAL	B77	Commercial	3
59	COMMERCIAL	B78	Commercial next to Meydan Mosque	1
60	COMMERCIAL	B80	Commercial	4
61	COMMERCIAL	B85	Sultan Sofrası	4
62	COMMERCIAL	B86	Hotel-Commercial	4
63	HOUSING	B89	Housing	4
64	HOUSING	B90	Housing	4
65	HOUSING	B91	Housing	4
66	HOUSING	B92	Housing	4
67	HOUSING	B93	Housing	4
68	HOUSING	B94	Housing	3
69	HOUSING	B95	Bekir Çelik House	4
70	HOUSING	B100	Housing	4
71	HOUSING	B102	Housing	4
72	HOUSING	B103	Housing	3
73	HOUSING	B104	House-Fountain	4
74	HOUSING	B106	Housing	4
75	HOUSING	B107	Housing	4
76	HOUSING-COMMERCIAL	B108	Housing-Commercial	4
77	HOUSING	B109	Housing	4
78	HOUSING	B110	Housing	4
79	COMMERCIAL	B114	Commercial	4
80	HOUSING-COMMERCIAL	B115	Housing-Commercial	4
81	HOUSING	B116	Housing	4
82	HOUSING	B117	Housing	4
83	HOUSING	B119	Housing	4
84	HOUSING	B121	Housing	4
85	HOUSING	B123	Housing	4
86	HOUSING	B125	Housing	4
87	HOUSING	B126	Housing	4
88	HOUSING	B127	Housing	4
89	HOUSING	B128	Housing	0
90	HOUSING	B129	Housing	0
91	HOUSING	B130	Housing	3
92	HOUSING	B131	Housing	3
93	HOUSING	B132	Yigitbaş House	0
94	HOUSING	B133	Housing	4
95	HOUSING	B134	Housing	3
96	HOUSING	B135	Housing	4
97	HOUSING	B136	Housing	1
98	HOUSING	B137	Housing	3
99	HOUSING-COMMERCIAL	B138	Housing-Commercial	3
100	HOUSING-COMMERCIAL	B139	Housing-Commercial	4
101	HOUSING	B140	Housing	4
102	HOUSING-COMMERCIAL	B141	Housing-Commercial	2
103	HOUSING	B142	Housing	4
104	HOUSING	B143	Housing	2
105	HEALTH SERVICE	B144	Trahom War Dispancary	2

Table 4.6 (continued): Damage degree of the 2nd group buildings (houses and commercial buildings).

Source: Prepared by the author.

106	HOUSING	B145	Housing	1
107	HOUSING	B146	Housing	4
108	HOUSING	B147	Housing	1
109	HOUSING	B149	Housing	4
110	HOUSING	B150	Housing	4
111	HOUSING	B151	Housing	4
112	HOUSING	B152	Housing	3
113	HOUSING	B153	Housing	4
114	HOUSING	B154	Housing	3
115	HOUSING	B155	Housing	2
116	HOUSING	B157	Housing	3
117	HOUSING	B158	Housing	0
118	HOUSING	B159	Housing	0
119	HOUSING	B160	Housing	0
120	HOUSING	B161	Housing	3
121	HOUSING	B162	Housing	3
122	HOUSING	B163	Alexi K. House	3
123	HOUSING	B164	Fethiye G. House	3
124	HOUSING	B165	Housing	3
125	HOUSING	B166	Housing	3
126	HOUSING-COMMERCIAL	B167	Housing-Commercial	0
127	HOUSING-COMMERCIAL	B168	Housing-Commercial	0
128	HOUSING-COMMERCIAL	B169	Housing-Commercial	2
129	HOUSING	B170	Housing	0
130	HOUSING	B172	Housing	0
131	HOUSING-COMMERCIAL	B173	Housing-Commercial	2
132	HOUSING-COMMERCIAL	B174	Housing-Commercial	2
133	HOUSING	B175	Housing	4
134	HOUSING	B176	Housing	1
135	HOUSING-COMMERCIAL	B177	Caffehouse-Housing	3
136	HOUSING	B178	Housing	2
137	HOUSING	B179	Housing	4
138	HOUSING-COMMERCIAL	B180	Housing-Commercial	2
139	HOUSING	B181	Housing	4
140	HOUSING	B182	Housing	4
141	HOUSING	B184	Housing	4
142	HOUSING	B185	Bedriye Küçük House	0
143	HOUSING	B186	Housing	4
144	HOUSING	B187	Housing	4
145	HOUSING	B188	Housing	4
146	HOUSING	B189	Housing	4
147	HOUSING	B190	Housing	4
148	HOUSING	B191	Housing	4
149	HOUSING	B192	Nuriye Kumru House	4
150	HOUSING	B193	Kemal Bilgin House	4
151	HOUSING	B194	Housing	4
152	HOUSING-COMMERCIAL	B195	Housing-Commercial	3
153	HOUSING	B196	Housing	4
154	HOUSING	B197	Housing	4
155	HOUSING	B198	Housing	4
156	HOUSING	B199	Housing	4
157	HOUSING	B200	Housing	4
158	HOUSING	B201	Housing	4
159	HOUSING	B202	Housing	0

Table 4.6 (continued): Damage degree of the 2nd group buildings (houses and commercial buildings). Source: Prepared by the author.

160	HOUSING	B204	Housing	4
161	HOUSING	B205	Housing	3
162	HOUSING	B206	Housing	4
163	HOUSING	B207	Housing	4
164	HOUSING	B208	Housing	4
165	HOUSING	B209	Housing	4
166	HOUSING	B210	Housing	4
167	HOUSING	B211	Housing	4
168	HOUSING	B212	Housing	4
169	HOUSING	B213	Housing	4
170	HOUSING	B214	Housing	4
171	HOUSING	B215	Housing	4
172	HOUSING	B216	Housing	3
173	HOUSING	B217	Housing	3
174	HOUSING	B218	Abdul Keberiti House	4
175	HOUSING	B219	Housing	4
176	HOUSING	B220	Housing	4
177	HOUSING	B221	Housing	4
178	HOUSING	B222	Housing	4
179	HOUSING	B223	Housing	4
180	HOUSING	B224	Housing	4
181	HOUSING	B225	Housing	4
182	HOUSING	B226	Housing	4
183	HOUSING	B227	Housing	4
184	HOUSING	B228	Housing	4
185	HOUSING	B229	Housing	1
186	HOUSING	B230	Housing	4
187	HOUSING	B231	Housing	0
188	HOUSING	B232	Housing	2
189	HOUSING	B233	Housing	0
190	COMMERCIAL	B234	Commericial	0
191	HOUSING	B235	Housing	3
192	HOUSING	B236	Housing	3
193	SCHOOL	B237	Ali Sayar Primary School	0
194	HOUSING	B238	Housing	3
195	HOUSING-COMMERCIAL	B239	Housing-Commercial	3
196	HOUSING	B240	Housing	4
197	HOUSING	B241	Housing	4
198	PUBLIC	B242	Police Station	4
199	HOUSING-COMMERCIAL	B243	Housing-Commercial	4
200	HOUSING	B244	Housing	4
201	HOUSING	B245	Housing	1
202	HOUSING	B246	Housing	3
203	HOUSING	B247	Housing	4
204	HOUSING	B248	Housing	4
205	HOUSING	B249	Housing	4
206	HOUSING	B250	Housing	4

4.6 Evaluation of Field Studies

In this thesis, a field study was conducted in the Antakya urban conservation area in September 2023. During the field study, since most of the debris had been cleared in the central area of Antakya, there were no major issues in terms of accessing buildings. However, the significant loss of street and road traces in the city created serious challenges in determining the current locations of structures. This situation posed obstacles in identifying the locations of historical buildings and understanding the overall architectural fabric, making the data collection process more difficult.

The main streets and avenues of the city, once vital axes, have become unidentifiable and undefined. This transformation signals a profound loss of the city's historical and cultural fabric, leading to the erasure of its urban identity. The street network, previously narrow, complex, and organic, has turned into vast, empty plots of land after the earthquake. This change is not just a physical transformation but also marks a significant rupture in the social and cultural memory of the city. The erasure of old road networks and urban traces has resulted in the loss of the historical and spatial integrity of the urban fabric.

The destruction and damage to both historical and modern buildings have significantly impacted the physical structure of the city. A large portion of the historic urban fabric, including key structures, has been severely damaged, with some buildings completely destroyed. However, the existence of well-preserved buildings despite the extensive damage offers valuable insights into the quality of the city's building stock. Interestingly, some monumental buildings with thick stone walls have been completely destroyed, while certain smaller-scale and more modest historic buildings remain undamaged, raising a question. This observation could suggest that large-scale monumental buildings, especially those with thick stone walls, may be at a higher risk in the event of natural disasters like earthquakes, compared to smaller-scale structures. Additionally, factors such as past restoration methods, the building's location, and its foundation system may also play a role in these discrepancies. Addressing this question through more detailed future studies will be crucial for the development of resilient historic cities.

In the field research, it was determined that out of the 250 registered buildings in the Antakya urban conservation area, 131 were collapsed (Figure 4.14). The majority of the remaining structures have sustained heavy or moderate damage. In 1st group, which consisted of 44 monumental buildings, 3 were undamaged, 7 were slightly damaged, 3 were moderately damaged, 16 were heavily damaged, and 15 were collapsed (Figure 4.15). In 2nd group, 19 buildings were undamaged, 19 were slightly damaged, 13 were moderately damaged, 39 were heavily damaged, and 116 were collapsed (Figure 4.16).

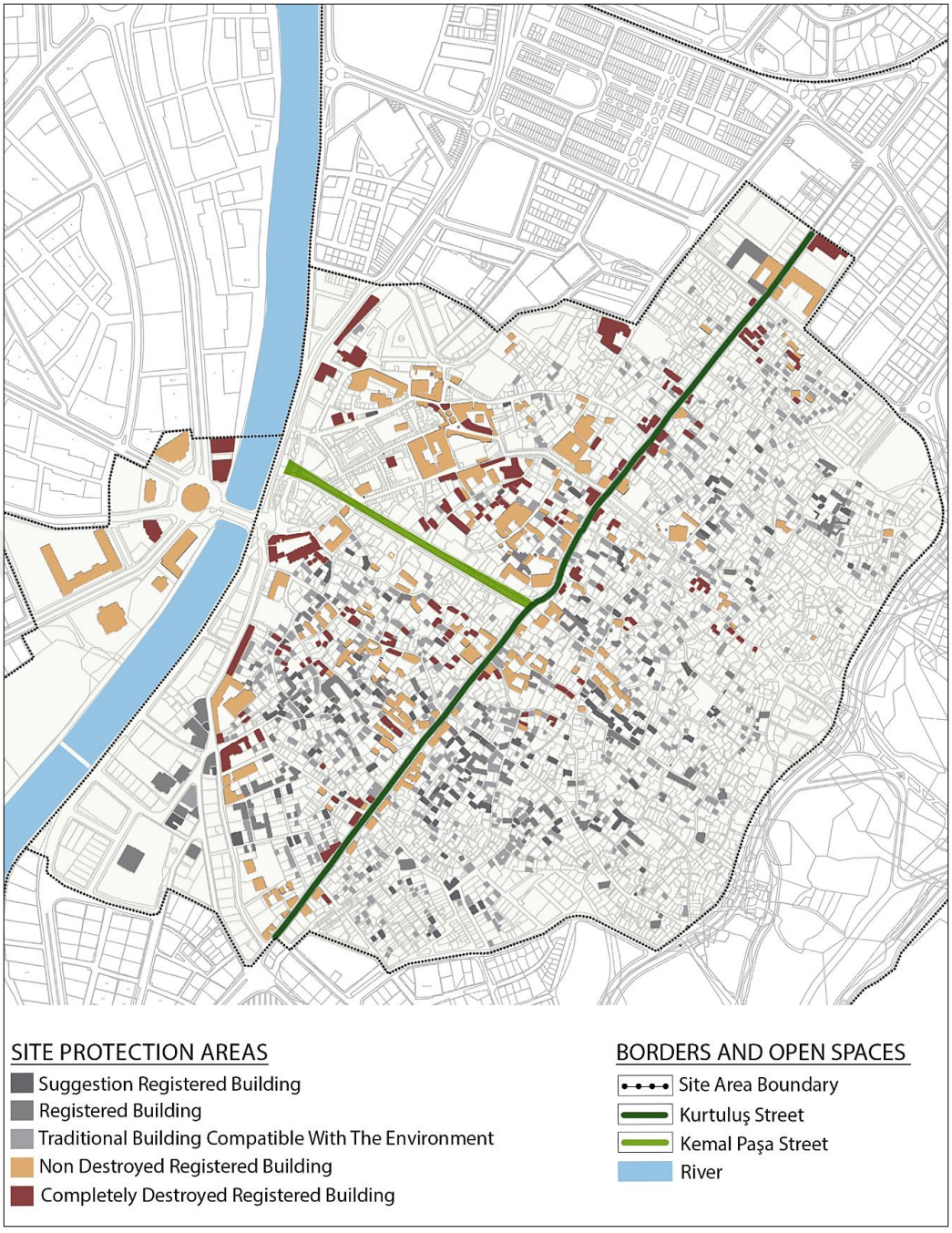

Figure 4.14 Collapsed among 250 registered buildings examined in the field. Source: The map was created by the author using cultural inventory and conservation zoning plan taken from A Proje Architecture Office Archive.

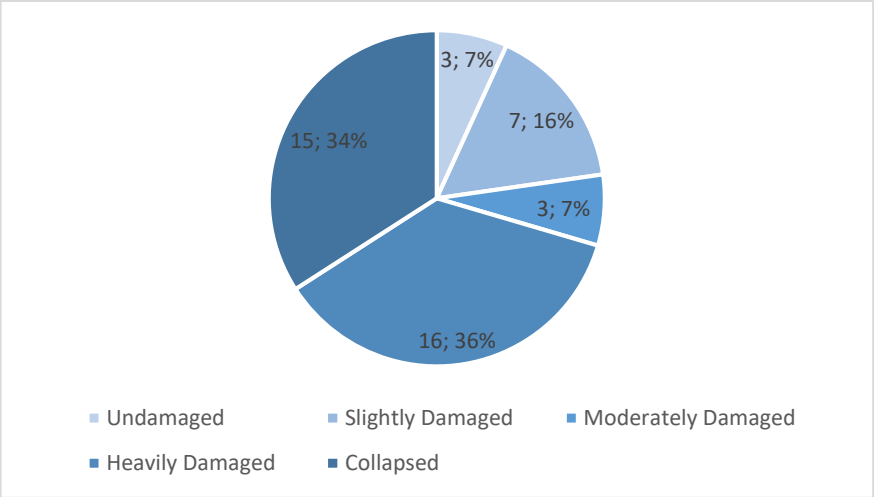

Figure 4.15 1st group buildings damage level.

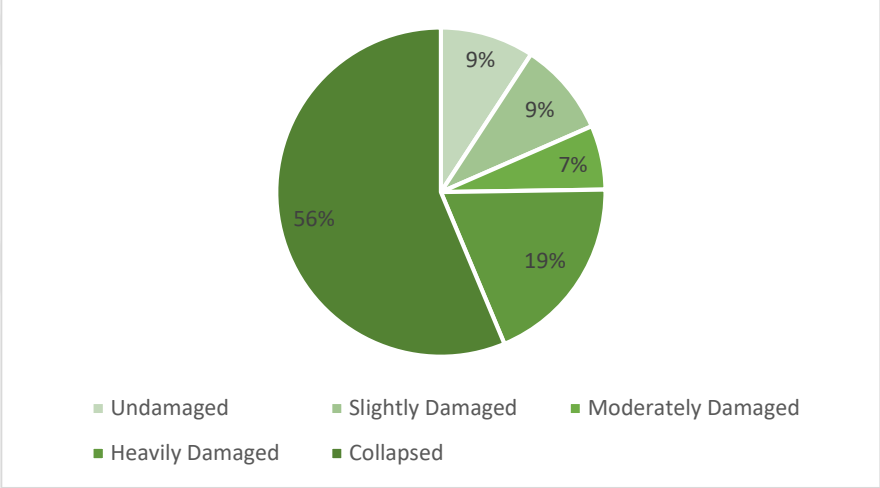

Figure 4.16 2nd group building damage level.

4.6.1 Post-Earthquake Situation of the 1st group buildings

Among the mosques surveyed in the field, Hatay Ulu Mosque, Mahremiye Mosque, Zülfikar Mosque, Yeni Mosque, Semerciler Mosque, Meydan Mosque, İhsaniye Mosque, and Nakipoğlu Mosque have been collapsed. The Habib-i Neccar Mosque, Ahmediye Mosque, Orhanlı Mosque, Şeyh Muhammed Mosque, Osmanlı Mosque, Şeyh Ali Mosque, Deveci Bekiroğlu Mosque, Kürtfakih Mosque, and Sarımiye Mosque were heavily damaged. Selvili Mosque was moderately damaged, while Sofular Mosque was slighty damaged (More detailed information about the damage status of the buildings can be found in Appendix A).

One of the important architectural components damaged in the area is domes. Of the 19 mosques analyzed, four are masonry domed and fourteen have wooden roofs (hipped, gable, pitched, flat, etc.). The domes of Habib-i Neccar Mosque, Yeni Mosque, and İhsaniye Mosque were collapsed, while the dome of Şeyh Ali Mosque was heavily damaged. The wooden roofs of Hatay Ulu Mosque, Semerciler Mosque, and Meydan Mosque were collapsed; Mahremiye Mosque, Zülfikar Mosque, and Orhanlı Mosque's wooden roofs were heavily damaged; the wooden roofs of Nakipoğlu Mosque and Sarımiye Mosque were moderately damaged; and the wooden roofs of Ahmediye Mosque, Selvili Mosque, Şeyh Muhammed Mosque, Osmanlı Mosque, Sofular Mosque, Deveci Bekiroğlu Mosque, and Kürtfakih Mosque were slightly damaged [78].

The minarets of Hatay Ulu Mosque, Habib-i Neccar Mosque, Yeni Mosque, İhsaniye Mosque, Osmanlı Mosque, Kürtfakih Mosque, and Nakipoğlu Mosque were collapsed. The minarets of Mahremiye Mosque, Semerciler Mosque, Ahmediye Mosque, Meydan Mosque, Orhanlı Mosque, Şeyh Muhammed Mosque, Sofular Mosque, Şeyh Ali Mosque, and Sarımiye Mosque were heavily damaged, while the minaret of Deveci Bekiroğlu Mosque was slightly damaged. Additionally, the ezanlık of Zülfikar Mosque was slightly damaged, whereas the ezanlık of Selvili Mosque has collapsed [78].

Among the masjids, Debruz Masjid was moderately damaged, while Rıfat Ağa Masjid, Ali Çavuş Masjid, and Hünkâr Masjid were slighty damaged, and Uçtum Masjid was undamaged. Regarding synagogues and churches, the Greek Orthodox Church (Church) was collapsed, while the Turkish Catholic Church and Konut Synagogue were undamaged (More detailed information about the damage status of the buildings can be found in Appendix A).

The damage assessment of the hamams(baths) revealed that Cindi Hamam and Saka Hamam were heavily damaged, while Yeni Hamam and Meydan Hamam were collapsed. Among the khans, Defne Khan, Kurşunlu Khan, and Tütün Khan were heavily damaged, while Yeni Khan was collapsed. Additionally, the bedesten in the urban site area was heavily damaged. Regarding the soap houses, Kuseyri Soap House and Sabun Soap House were collapsed, Aselci Soap House was heavily damage, while

Savon Soap House and Old Soap House were slightly damaged. In terms of the tombs, Şeyhoğlu Tomb was collapsed, Şıh Abdurrahman Tomb was moderately damaged, and Hıdır Tomb was slightly damaged (For more detailed information about the damage status of the buildings, please refer to Appendix A).

4.6.2 Post-Earthquake Situation of the 2nd group buildings

In the second group, the following buildings were collapsed: Parliament House (Former Hatay), Mado House, T.C. Ziraat Bank, and the Police Station. The following structures were heavily damage: PTT Building (Post Office), Municipal Building, Directorate of Health, and Vocational High School. The Governor House and Trahom War Dispensary were moderately damaged, while Antakya Museum was slightly damaged. Atatürk Square and Monument and Ali Sayar Primary School were undamaged (For more detailed information about the damage status of the buildings, please refer to Appendix B).

In the second group, a large percentage of traditional Antakya houses suffered significant damage during the earthquake (Figure 4.17). Out of 158 houses, 97 were collapsed, 28 were heavily damaged, 6 were moderately damaged, and 13 were slightly damaged. The remaining 14 houses were undamaged.

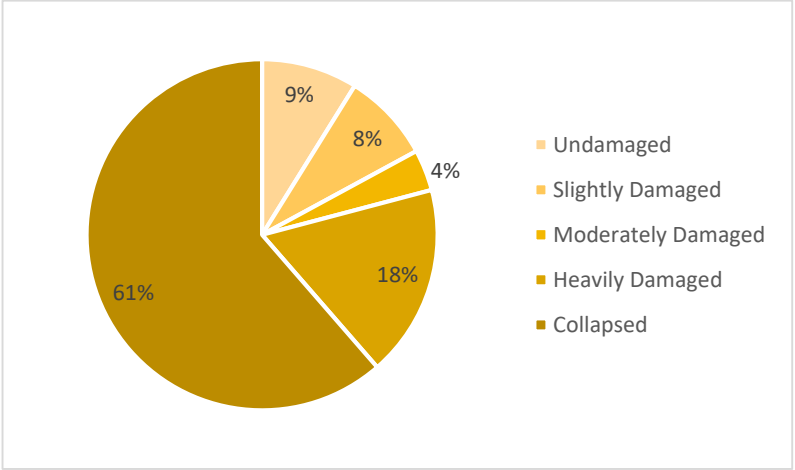

Figure 4.17 Damage condition of the housing.

The building with inventory number B32, currently used as the Liwan Deluxe Hotel, is located on Kurtuluş Caddesi, close to the Habib-i Neccar Mosque. This two-story stone house was heavily damaged during the earthquake (Figure 4.18).



Figure 4.18 Situation of B32-Housing *(Liwan Deluxe Otel)* pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author.

The building with inventory number B95, known as the Bekir Çelik Residence, is a two-story structure with a shop on the ground floor and a residence on the upper floor. It is located on Kurtuluş Caddesi in the Sabunhaneler area. This building was completely destroyed after the earthquake (Figure 4.19).



Figure 4.19 Situation of B95-Bekir Çelik House pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author.

The building with inventory number B132, known as Yiğit Baş Evi and currently used as the "Museum of Medicinal and Aromatic Plants," is a two-story courtyard structure that was not significantly affected by the earthquake (Figure 4.20). The building with

inventory number B147, a two-story traditional residence currently known as Hatay Expo House, sustained light damage during the earthquake (Figure 4.21).



Figure 4.20 Situation of B132-Yiğitbaş House pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author.



Figure 4.21 Situation of B147-Housing *(Hatay Expo Evi)* pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author.

In Group 2, a significant portion of the commercial buildings, which are an important part of Antakya's traditional fabric, sustained heavy damage during the earthquake (Figure 4.22). Out of the 13 commercial buildings examined, 7 were collapsed, 2 were heavily damaged, and 3 were slightly damaged. One commercial building was undamaged. The commercial building with inventory number B14, located on Saray Street in front of the Church, is a long rectangular structure that runs along the street. This building was collapsed in the earthquake (Figure 4.23).

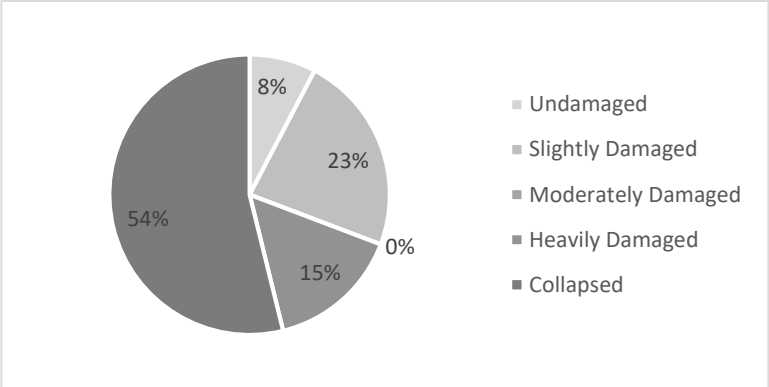

Figure 4.22 Damage condition of the commercial.



Figure 4.23 Situation of B14-Commercial next to Orthodox Church pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author.

In Group 2, a significant portion of the commercial-residential buildings that were integrated into Antakya's traditional fabric over time were severely affected by the earthquake. Out of 22 commercial-residential buildings examined, 8 were collapsed, 5 were heavily damaged, 5 were moderately damaged, and 2 were slightly damaged. The remaining 2 commercial-residential buildings were undamaged (Figure 4.24). Within the Uzun Çarşı (Long Bazaar), which is the commercial center of Antakya, both 1st group and 2nd group structures are located.

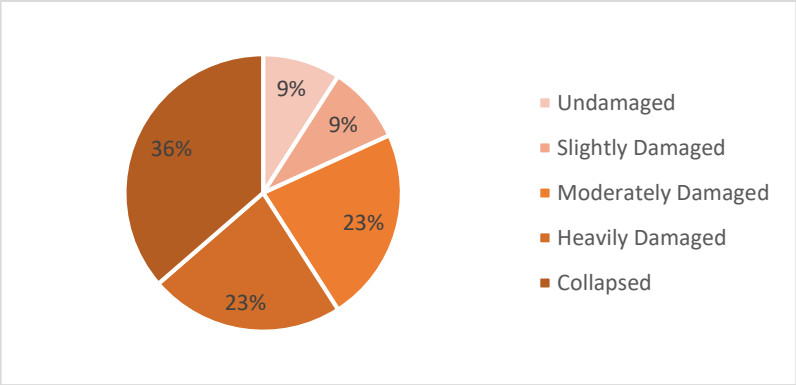

Figure 4.24 Damage condition of the housing-commercial.

The B34 inventory number, a housing-commercial building located along the Kurtuluş Caddesi side of the Uzun Çarşı, was slightly damaged (Figure 4.25). On the same street, the B138 inventory number, which is currently known as the Francis Hotel, is one of the housing-commercial buildings that was heavily damaged during the earthquake (Figure 4.26).



Figure 4.25 Situation of B34-Housing-Commercial pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author.



Figure 4.26 Situation of B138-Housing-Commercial (Francıs Otel) pre-earthquake (left) and post-earthquake (right). Source (left): Google Maps; (right): By the author.

4.7 Assesment of Chapter

Türkiye, due to its geological structure, is frequently exposed to natural disasters, resulting in large-scale destruction and losses. The 2023 Kahramanmaraş earthquakes, in particular, affected a wide region, causing both human casualties and irreparable damage to cultural heritage. Since these earthquakes caused significant harm to cultural and historical heritage, urgent measures need to be taken to protect this heritage. In settlements with a layered history, such as Antakya, the destruction of cultural heritage due to the earthquake has made extensive damage assessment and conservation efforts mandatory.

Antakya is a city with a complex heritage, as it contains both urban and archaeological sites. The residential areas, commercial zones, monumental buildings, religious structures, and archaeological sites have all contributed to the unique historical data of the city. Antakya was severely affected by the Kahramanmaraş-centered earthquakes on February 6, 2023 and suffered significant human and material losses. This section provides a detailed examination of the damage to 250 registered historical buildings with different functions within the Antakya urban conservation area after the Kahramanmaraş earthquakes. These investigations have revealed the extent and depth of the destruction in the region.

Damage refers to the physical deterioration, collapse, or loss of functionality that buildings experience due to natural or human-induced causes. Especially after natural disasters, accurately assessing the damage to buildings is critical for restoration processes and reducing potential risks. Many studies have been conducted on the impacts of earthquakes on historical cities in different countries and periods. The damage assessment studies conducted in this context have served as important references for shaping the damage evaluation in this thesis.

Through damage survey work based on observation, it was determined that the historical fabric of Antakya was significantly damaged. The street layout of the city has largely been lost, and the main streets and alleys have become unrecognizable. The destruction and damage to both historical and modern buildings have severely impacted the physical structure of the city. In the field research, it was determined that

131 out of 250 registered buildings examined in the Antakya urban site area had been collapsed. The remaining buildings were largely damaged, with most of them were heavily or moderately damaged. The Kahramanmaraş earthquakes not only caused physical transformation but also led to a significant rupture in the social and cultural memory of the city.

CHAPTER 5

A HOLISTIC APPROACH TO THE RECOVERY PROCESS OF ANTAKYA URBAN SITE AFTER THE KAHRAMANMARAŞ EARTHQUAKES

5.1 The Definition and Importance of Heritage

The term "heritage" is used to describe "the transfer of something from one person or community to another, something left by someone else" [79]. Heritage is what is passed down from the past, what we experience in the present, and what we transmit to future generations. Some places on Earth hold extraordinary universal value and are part of humanity's shared heritage. World heritage sites with universal applicability belong to all people worldwide, regardless of the land on which they are located. Cultural and natural heritage are irreplaceable sources of both life and inspiration [80].

World Heritage sites were first determined under the Convention Concerning the Protection of the World Cultural and Natural Heritage, which was adopted by UNESCO in 1972 and officially came into force in 1975 after being ratified by 22 countries. This convention provides a fundamental framework for the preservation and sustainable management of significant cultural heritage sites worldwide. Furthermore, it lays the groundwork for the development of protection and management strategies by offering an initial conceptual infrastructure for understanding the concept of cultural heritage [81].

Cultural heritage is a concept that encompasses works, monuments, groups of buildings, sites, and museums that hold symbolic, historical, artistic, aesthetic, ethnological or anthropological, scientific, and social significance. This heritage includes both tangible cultural heritage, which encompasses movable, immovable, and underwater heritage, as well as intangible cultural heritage [82].

5.2 Development of Conservation Concept

The history of conservation practices dates back to ancient times, but scientific restoration efforts began in the 19th century in Europe. The principle of "Unity of Style" initially guided haphazard restorations, but over time, it was replaced by the principles of the "Romantic View." The "Romantic View," which was an anti-restoration movement, had John Ruskin (1819–1900) as its most prominent advocate. Although Ruskin did not write a formal conservation theory, he defined the importance of historical buildings more clearly than anyone before him, thus laying the foundation for modern conservation philosophies [83]. In opposition to this principle, which advocated for no restoration at all, more active approaches emerged later, such as the "Historical Restoration" and "Contemporary Restoration" theories. The contemporary restoration theory later became the basis for internationally accepted conservation [61].

The essence of modern conservation philosophy is based on a new historical consciousness and the resulting perception of cultural diversity. Initially emerging as a movement rooted in criticism, the understanding of conservation gradually became accepted as a modern approach in the care and restoration of historical buildings and works of art. In this way, conservation evolved into a foundational reference for policies regarding maintenance and restoration [83].

Emerging as a Europe-centered initiative, the conservation movement began to spread from Europe to other continents in the mid-19th century. This expansion necessitated the establishment of legal and administrative frameworks for the protection of cultural heritage. As a result, by the 1990s, most countries worldwide (164 countries as of August 2001) had ratified the UNESCO World Heritage Convention. This convention not only ensured that countries assumed responsibility for protecting the cultural and natural heritage within their borders but also popularized the idea that these values constitute the "shared heritage of all humanity." The application of policies developed within the European context to different socio-cultural conditions and physical realities made it essential to define more universal and common parameters for cultural heritage conservation. These common parameters have been articulated through

international declarations, recommendations, and guidelines, while also contributing to the development of scientific methods for the analysis and maintenance of heritage [83].

In Türkiye, the first legal regulation concerning the preservation of cultural assets was the Asar-i Atika Regulation, which came into force on February 13, 1869. This regulation was altered in 1874, 1884, and 1906, and in 1912, a new monument preservation law, Muhafaza-i Abidat, was enacted. Following the establishment of the Republic of Türkiye in 1923, artifacts from previous cultures were recognized as a shared heritage, and modern conservation approaches were adopted by following developments in Europe and enacting new legal regulations. In 1951, the High Council of Monuments (Yüksek Anıtlar Kurulu) was established [83]. The enactment of the Law on Antiquities (Law No. 1710) in 1973 and the Law on the Conservation of Cultural and Natural Assets (Law No. 2863) in 1983 marked significant steps toward adopting an international conservation approach. In 2004, Law No. 5226 introduced substantial innovations to the legal framework of conservation. In Türkiye's conservation history, Law No. 1710 is significant as it was the first to enable the holistic preservation of historical environments. The registration of historical structures began with this law [61].

In Türkiye, from the Ottoman period until the mid-2000s, the authority and responsibility for cultural heritage preservation were centralized under the national government. The delegation of authority and responsibility to local governments for the preservation of cultural and natural heritage was introduced with Law No. 5226, enacted in 2004. One of the most significant innovations for local governments was the establishment of "Conservation, Implementation, and Supervision Offices (KUDEB)" in metropolitan municipalities and municipalities authorized by the Ministry of Culture and Tourism [84]. Since many cultural assets in Türkiye are foundation works (vakıf eserleri), their maintenance and restoration fall under the jurisdiction of the General Directorate of Foundations (Vakıflar Genel Müdürlüğü). During the early Republican period, the preservation of cultural assets was the responsibility of the General Directorate of Antiquities and Museums under the Ministry of Education. Today, this responsibility lies with the General Directorate of

Cultural Heritage and Museums under the Ministry of Culture and Tourism. This directorate manages the process through its subordinate institutions and organizations, which include the Regional Conservation Boards for Cultural Heritage, Regional Directorates of Surveying and Monuments, and the Restoration and Conservation Central Laboratory located in Istanbul [61].

5.3 International organizations, guidelines and regulations

The concept of universal heritage gradually developed during the 18th and 19th centuries and gained formal recognition through international treaties and agreements. Following World War II, significant steps were taken with the establishment of institutions such as the United Nations, UNESCO, and ICOM (International Council of Museums) [83]. The Athens Charter and Carta del Restauro of 1931 marked the first codification and documentation of conservation principles and facilitated international collaboration in preservation efforts [85]. Natural disasters such as earthquakes, floods, and landslides, as well as human-induced factors like war, fire, neglect, misuse, vandalism, public works, and air pollution, have caused extensive damage to historical structures. However, the decisions made in the Athens Charter and Carta del Restauro proved insufficient for the restoration of historic cities devastated during World War II [61]. In response, the Venice Charter was adopted in 1964. This 16-article document redefined the concept of "historic monuments" by broadening its scope to include their surroundings and has been incorporated into the conservation laws of many countries. As a result, registration efforts for heritage sites gained momentum. The Venice Charter established ethical, scientific, and methodological standards for the preservation of historical structures and monuments and has served as a foundational document for numerous international agreements and national conservation policies. Subsequent conservation efforts have been conducted within the framework of this charter [86].

The Hague Convention, adopted under the auspices of UNESCO in 1954, is the first and most comprehensive multilateral treaty dedicated specifically to the protection of cultural heritage during both peacetime and armed conflict. It emphasizes the great importance of preserving cultural heritage for all people worldwide, highlighting the

need for universal protection. During armed conflict, it is essential to safeguard these assets from destruction or deterioration and to avoid any hostile actions against them. Additionally, preventive measures such as preparing inventories, implementing emergency actions against risks like fire or structural collapse, and relocating assets to safe locations are vital for the protection of cultural heritage [87].

One of the most widely recognized documents following The Venice Charter is The Burra Charter, developed by Australia ICOMOS in 1979. Building upon the core principles of The Venice Charter, The Burra Charter introduced the concept of "place" instead of "monument and site," emphasizing the cultural significance, connections, and meanings that a place holds for people. It advocates for the inclusion of communities in the decision-making process. The charter has undergone revisions in 1981, 1988, 1999, and 2013 to adapt to evolving perspectives and practices in cultural heritage conservation [88].

Initially focused on the preservation of individual monumental structures, the concept of conservation evolved into a holistic approach (urban-scale conservation) during the 20th century. With the adoption of The Venice Charter in 1964, the site-based preservation approach gained prominence. This shift was further supported by the efforts of UNESCO, ICOMOS, ICCROM, and the Council of Europe, with notable advancements in conservation practices occurring after the 1980s. Established in 1956, ICCROM developed as an education-focused organization aimed at training experts in conservation practices. ICOMOS, founded in 1965, is a significant international organization dedicated to the preservation of architectural heritage. It has developed numerous charters that serve as detailed guides on architectural conservation theories, methodologies, and scientific techniques [61]. The Council of Europe, which actively works on heritage preservation at the international level, introduced The Declaration of Amsterdam in 1975. This declaration integrated conservation principles into regional planning policies and socio-economic life. It also endorsed a holistic conservation approach that emphasizes the support of local governments and central authorities, as well as public participation [89].

In 1976, UNESCO adopted the “Recommendation Concerning the Safeguarding and Contemporary Role of Historic Areas” in Nairobi, Kenya. This recommendation highlighted the severe damage caused to historical heritage worldwide by irrational demolitions, inappropriate reconstructions, and actions undertaken under the guise of growth and modernization without understanding the consequences. The document emphasized the importance of preserving historical areas along with their surroundings, maintaining authenticity, and avoiding unnecessary additions, improper alterations, or actions that compromise originality [90].

The concept of "conservation of historic towns and urban areas" was further reinforced by the Washington Charter adopted at the ICOMOS General Assembly in 1987. This charter called for the legal protection, maintenance, restoration, and integration of historic towns and urban areas into contemporary life. It underscored the threats posed by industrialization and urban transformation, which often lead to the neglect and destruction of these areas. The charter also stated that conservation is not limited to legal protection and restoration but involves implementing methods to help cities adapt to modern life. Furthermore, it emphasized that the success of conservation programs depends on the active participation and involvement of local communities [91].

The Nara Document on Authenticity, approved in 1994 and based on The Venice Charter, emphasizes the importance of preserving the authenticity of cultural heritage in response to the loss of cultural identity caused by the pressures of globalization. Authenticity plays a crucial role in all scientific studies, conservation and restoration interventions, the process of being included on the World Heritage List, and any form of inventory related to cultural heritage. Recognizing the unique attributes of heritage values specific to each culture, as well as the credibility and accuracy of related sources of information, is one of the most urgent and significant matters. To enhance the practical value of authenticity in safeguarding humanity's shared heritage, it is essential to foster and expand this dialogue across various regions and cultures of the world [92].

Traditional architecture (vernacular architecture) is a significant value that reflects the cultural identity of every society and should be preserved as part of humanity's shared heritage. In this context, the *Charter on the Built Vernacular Heritage*, adopted in 1999, presents principles and methods for the conservation of traditional architecture. The conservation principles outlined in this charter can be summarized as follows [93]:

- The preservation of traditional environments should be carried out by a multidisciplinary expert team, with respect to the cultural identity of the community.
- Contemporary interventions in traditional structures must respect their cultural values and traditional character.
- Traditional heritage includes not only tangible forms, masses, structures, and spaces, but also the ways in which these are used and perceived, along with traditions and intangible relationships associated with them.

The implementation principles include:

- Thorough research and documentation should form the first phase.
- During interventions, an approach that respects the position, relationships with the physical and cultural environment, and their arrangement relative to each other should be adopted.
- The continuity of traditional construction systems and craftsmanship is essential, and this process should be supported through education.
- If contemporary materials must be used, they should be compatible with the traditional style, without conflicting in terms of appearance, texture, and form.
- When adapting traditional buildings to new functions and reusing them, their integrity, character, and form should be respected [93].

The United Nations designated 2002 as the Year of Cultural Heritage, and the World Heritage Committee celebrated its 30th anniversary in Budapest. In this context, the

Budapest Declaration on World Heritage was issued in 2002. This declaration aimed to enhance social and economic development and improve the quality of life for communities within the framework of conservation, development, and sustainability. It emphasized that those who harm World Heritage also harm the human spirit and the world itself. The declaration highlighted the importance of raising public awareness and providing support for World Heritage. Furthermore, it called for new partnerships to promote the expansion of the World Heritage List and to encourage the preservation of World Heritage [94].

The structural characteristics of historical buildings, due to their nature and historical significance, present challenges in applying contemporary regulations and building standards. In 2003, ICOMOS introduced the *Principles for the Analysis, Conservation, and Structural Restoration of Architectural Heritage*, a charter providing guidelines for the rehabilitation of historic structures that have suffered significant structural damage. In countries like Türkiye, which frequently experience severe earthquakes, one of the most critical issues in historic buildings is the substantial damage to load-bearing systems. According to this charter, a multidisciplinary approach must be adopted during the conservation, reinforcement, and restoration process. Conservation principles should be adhered to, architectural heritage should be considered holistically with all its components, evaluated within its contextual environment, and irreversible interventions should be avoided as much as possible. Except for emergency safety measures to prevent the collapse of structural systems in cases such as earthquake damage, no interventions should be made without thorough analysis and assessment. Even if the structure is severely damaged, renovations should be kept to a minimum, avoiding complete replacement. A comprehensive approach that integrates both qualitative (observation-based) and quantitative (experiment- and analysis-based) methods must be implemented [95].

The Valetta Principles, adopted at the 2011 ICOMOS General Assembly, update the ideas presented in the Washington Charter (1987) and the Nairobi Recommendations (1976). A protected urban area is defined as a region with an authentic urban fabric that represents the city's history or stages of development, containing monuments and cultural values. The Valetta Principles emphasize both the preservation of the values

of historic cities and their surroundings and their integration into contemporary social, cultural, and economic life. The updates broaden the scope of cultural heritage beyond the narrow framework of urban areas, considering it from a regional perspective. They reflect a heightened awareness of abstract values such as continuity and identity, the role of landscapes as public spaces, the city's topography and skyline, and the role of public spaces in community relationships. The importance of identifying and preserving the intangible elements that shape the identity and spirit of a place is highlighted. A "Buffer Zone" should be established to protect the cultural values of a site from the adverse effects of surrounding activities. Historic cities should not only reflect the past but also serve as functional and sustainable spaces for the future. The successful preservation, revitalization, and sustainable development of historic cities and urban areas require a broad network of communication among managers, municipal employees, public administrators, experts, professional organizations, volunteer groups, universities, and residents. Additionally, it is emphasized that each historic city and urban area should have an effective management plan tailored to its type, characteristics, and context [96].

In 2013, the *Declaration on the Conservation of Architectural Heritage* was published by ICOMOS Türkiye. This declaration was prepared in response to certain laws and regulations in Türkiye that include provisions threatening conservation efforts. As a country with universal richness and diversity in cultural heritage, Türkiye bears significant international responsibility in this regard. The document outlines the fundamental principles of conserving architectural heritage for all disciplines involved in the conservation process and various segments of society. It also addresses definitions of architectural heritage, the processes and tools for its conservation, education and policies related to preservation, and strategies for integrating conservation into public consciousness. The conservation of architectural heritage is inherently a multidisciplinary field. Depending on the nature and challenges of the cultural heritage, professionals experienced or specialized in conservation—including architects, archaeologists, civil engineers, art/architectural historians, chemists, physicists, urban planners, landscape architects, legal experts, business administrators, economists, communication specialists, sociologists, geologists, and other related engineering disciplines—must be involved in the conservation process [97].

In 2017, the *Principles for the Conservation of Wooden Built Heritage* were adopted at the ICOMOS General Assembly. This document emphasizes the importance of wooden cultural heritage and defines comprehensive and practical fundamental principles and practices for its conservation and preservation on an international scale. It serves as an update to the Principles for the Preservation of Historic Timber Structures adopted by ICOMOS in 1999 [98].

Wars, natural disasters, fires, vandalism, and urban development activities have led to the damage or complete destruction of cultural heritage structures. In the aftermath of such events, efforts to mitigate risks threatening cultural heritage in historic environments, minimize the damage and losses caused by disasters, and ensure the preservation of cultural heritage are of critical importance. In this context, declarations issued for the protection of cultural heritage serve as significant guidelines, encouraging societies and governments at the international level to recognize and safeguard the value of cultural heritage (Table 5.1). These declarations aim to implement measures to counteract risks threatening cultural heritage, strengthen national and international collaborations, and adopt sustainable and holistic conservation approaches.

Table 5.1 International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author.

Name of Charter	Content of Charter	Charter evaluation within the framework of Antakya Urban Site Area
The Athens Charter (1931)	This charter outlines the first **formalization** and **documentation** of preservation principles, as well as the necessity of working within an **international collaborative framework.**	Standard principles provide a common framework for projects carried out in areas such as the Antakya urban site, preventing inconsistencies in implementation and ensuring effective preservation.
The Venice Charter (1964)	This charter establishes an **ethical, scientific,** and **methodological** standard for the preservation of historical buildings and monuments.	The application of scientific standards in preservation processes increases the reliability of the projects carried out in the Antakya urban site.

Table 5.1 (continued): International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author.

Hague Convention (1954)	It is the first and most comprehensive multilateral treaty dedicated specifically to the protection of cultural heritage during **both peacetime** and **armed conflict.**	The historical, cultural, and universal values of the Antakya urban site are preserved, preventing the risk of damage during periods of conflict.
The Burra Charter (1979)	This charter emphasizes the cultural significance, connections, and meanings that a place holds for people by introducing the concept of **'place'** instead of 'monument and site.'	"The adoption of the concept of 'place' ensures the preservation of the meaning that Antakya holds as an area where different religions, civilizations, and cultures coexist.
The Declaration of Amsterdam (1975)	The preservation principles are integrated into regional planning policies and socio-economic life. This charter adopts a **holistic preservation approach**, which envisions the **support of local** and **central government,** along with **public participation.**	Adopting a holistic approach in multilayered areas such as the Antakya urban site ensures sustainable preservation and development.
"Recommendation Concerning the Safeguarding and Contemporary Role of Historic Areas" (Nairobi-1976)	This document emphasizes the importance of preserving the authenticity of historic sites and states that they should be effectively **preserved along with their surroundings.**	Authenticity and proper preservation approaches contribute to the Antakya urban site's gaining international value and ensuring its further protection.
The Washington Charter (1987)	This charter emphasizes that the success of preservation requires the **integration** of cities into modern life and the **participation** of urban residents in this process.	In the Antakya urban site, a preservation model that integrates historic buildings with modern life while ensuring public participation ensures effective preservation.
Nara Document (1994)	It emphasizes the need to preserve the **authenticity** of cultural heritage to prevent the loss of cultural identity caused by the pressures of globalization.	The preservation of the authenticity of the Antakya urban site ensures the continuity of not only cultural heritage but also the identity and sense of belonging of the local community.

Table 5.1 (continued): International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author.

Charter On The Built Vernacular Heritage (1999)	Traditional architecture (civil architecture) is one of the key values that reflects the cultural identity of each society and should be preserved as a shared heritage of humanity. This charter presents principles and methods for the preservation of traditional architecture.	A large portion of the historic buildings in the Antakya urban site are examples of civil architecture. In this context, the preservation of traditional architecture means not only protecting the physical structures but also safeguarding the culture they represent.
Budapest Declaration on World Heritage (2002)	This declaration aims to promote social and economic development and improve the quality of life for communities within the framework of preservation, development, and sustainability.	An approach within the framework of preservation, development, and sustainability preserves cultural heritage in the Antakya urban site while enhancing the economic well-being of the community and strengthening social ties.
Principles for the analysis, conservation and Structural Restoration of Architectural Heritage" (2003)	This charter presents principles for the **rehabilitation** of historical buildings that have experienced significant **structural damage.** According to this regulation, a **multidisciplinary** approach should be adopted in the preservation, strengthening, and restoration process, and architectural heritage should be considered **holistically**, taking into account all its components and its **surrounding context.**	Adopting an approach consistent with these principles in the Antakya urban site ensures the sustainable preservation of both the structures and the city's cultural heritage. This is crucial, as the buildings in this area collectively form the identity of the city.
Valetta Principles (2011)	This charter emphasizes the identification and preservation of the intangible elements that constitute the identity and **spirit of a place**, as well as the creation of **buffer zones** outside the urban site. Additionally, it advocates for the development of a context-appropriate and effective **management plan** for each historic town and urban area.	For the Antakya urban site, the preservation of the intangible elements that constitute the identity of the place ensures the continuity of cultural values and social bonds. Furthermore, the creation of buffer zones and the development of an effective management plan support the protection of the historical fabric and promote sustainable urban development and preservation.

Table 5.1 (continued): International charters evaluation within the framework of Antakya Urban Site Area. Source: Prepared by the author.

Declaration on the Conservation of Architectural Heritage (2013)	This declaration has been prepared because some laws and regulations regulating preservation in **Türkiye** contain provisions that threaten conservation. This document defines the **fundamental principles** of preserving architectural heritage for all disciplines involved in the preservation process and various sectors of society.	The effective preservation of Antakya's historical and cultural values is an international responsibility. The involvement of professionals from diverse fields of expertise ensures a strong preservation process.
Principles for the Conservation of Wooden Built Heritage (2017)	This document emphasizes the importance of wooden cultural heritage and defines comprehensive, applicable fundamental principles and practices for its preservation and conservation within an international framework.	The sustainable preservation of the widespread wooden heritage in Antakya is crucial for passing these values on to future generations.

5.4 Suggestions for disaster risk management and conservation in Antakya Urban Site

Climate change, environmental degradation, rapid and unplanned urbanization, wars, conflicts, natural disasters, poverty, and inequality rank among the most pressing and urgent global crises of our time. The impacts of these crises deeply affect not only the natural environment but also the built environment, particularly historic cities. Historic cities, in addition to being carriers of cultural heritage, are significant areas that bear the traces of societies' social, economic, and cultural development from the past to the present. Therefore, the preservation and sustainable continuity of historic cities is not only a historical responsibility but also a necessity that shapes the future of contemporary societies. Preserving the identity of historic cities means safeguarding their unique values, as well as their cultural and historical heritage. However, protecting these identities has become a significant challenge in the face of various threats posed by the modern age. These threats endanger historic buildings, urban fabrics, and even archaeological sites, leading to the loss of values inherited from the past.

A disaster refers to sudden, negative, and extreme events that cause significant damage to people, plants, and animals. These events can be either natural or human-made, and they create harmful effects on property and the environment by exceeding tolerance limits within a specific time frame. A hazard (such as a flood, earthquake, hurricane, etc.) is considered a disaster when it leads to the loss of life and property. For example, an earthquake in a desert is not a disaster. An earthquake only becomes a disaster when it affects people and property. Risk is a function of the likelihood of a particular hazardous event and the losses it may cause. A society or settlement is considered to be "at risk" when it is exposed to hazards and is expected to be negatively affected by their impact [99].

As awareness of natural disasters and climate risks increases, so does the recognition of the risks faced by cultural heritage. The damage and destruction of prominent heritage sites in countries such as Japan, Myanmar, Nepal, and Türkiye have highlighted the need to enhance the resilience of these valuable assets. Consequently, investments in disaster risk management for cultural heritage have increased [100]. Cultural heritage preservation is part of an ever-evolving and complex system. This complexity reflects uncertainty, which in turn generates risk. Since the late 1980s, risk has become a central focus of the preservation process, serving as an integral component of conservation efforts. A consistent risk methodology is essential to understanding the risks to cultural heritage, mitigating these risks, and implementing a more effective preservation process. Risk management provides systematic protection by reducing uncertainty and supporting strategic planning and decision-making processes [101].

In the early 1990s, ICOMOS initiated efforts to protect cultural heritage from disasters. One of the outcomes of these initiatives is the publication of the guide titled *"Risk Preparedness: A Management Manual for World Cultural Heritage"* in 1998. This guide emphasizes the establishment of a risk-sensitive cultural heritage management framework and the development of methodologies within this context. Aiming to prevent disasters, mitigate their impact, recover from losses, or enhance the capacity to respond to disasters, the guide defines three key phases: pre-disaster (preparedness), during disaster (response), and post-disaster (recovery) [102].

In 2000, ICOMOS launched another initiative by publishing “Heritage at Risk: ICOMOS World Report 2000 on Monuments and Sites in Danger.” Additionally, to facilitate the coordination of risk preparedness activities, the International Committee of the Blue Shield (ICBS) and the International Scientific Committee on Risk Preparedness (ICORP) were established in collaboration with various cultural heritage organizations. UNESCO also mandated the integration of risk analysis within management evaluations by enhancing the “*Operational Guidelines for the Implementation of the World Heritage Convention”.* In the following years, international organizations such as UNESCO and ICOMOS continued to publish new reports and guidelines on risk management for cultural heritage sites [101, 103]**.**

In 2009, the disaster and emergency management structure in Türkiye was restructured, and the Disaster and Emergency Management Authority (AFAD) was established. With the establishment of AFAD, a "risk management" approach was adopted, transitioning to an "Integrated Disaster Management" system [104].

Many countries facing the challenge of protecting cultural heritage from earthquakes have adopted the "Integrated Risk Management" approach, which assigns equal importance to actions to be taken before, during, and after disasters. In 2017, the General Directorate of Foundations prepared the *“Guideline for Managing Earthquake Risks in Historical Structures”* to protect historical buildings against earthquakes. This guideline systematically and step-by-step explains how to manage potential risks related to earthquake hazards in historical structures [62].

ICCROM (International Centre for the Preservation and Restoration of Cultural Property), CCI (Canadian Conservation Institute), and RCE (The Netherlands Cultural Heritage Agency) collaborated to develop a risk management methodology for cultural heritage and to organize educational initiatives in this field. These efforts aimed to emphasize the importance of applying risk-based decision-making processes in preservation strategies. Within the framework of this partnership, activities such as training programs, the creation of learning resources, the initiation of research on risk management, and the establishment of a community of cultural heritage professionals advocating for the importance of the risk management approach were carried out. The risk management method developed through the CCI-ICCROM-RCE collaboration

focuses on preserving the significance of cultural heritage (Figure 5.1). This method evaluates not only rare and catastrophic risks but also the effects of cumulative degradation processes. The risk management process begins with defining the purpose and scope of risk management, collecting data, and obtaining the necessary information for subsequent steps. Throughout this process, all relevant risks that may damage cultural heritage or result in a loss of value are considered [101].

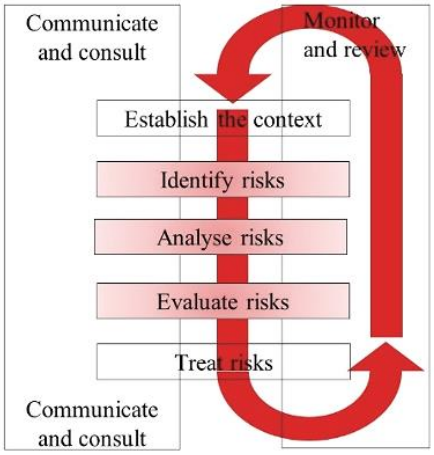

Figure 5.1 The cultural heritage risk management cycle. Source: [101].

Disaster risk management plans should be prepared by the responsible authorities for all areas of cultural heritage at risk. These plans must systematically address all aspects of risk preparedness to protect cultural heritage from various threats [105]. Risk preparedness should be integrated not only into emergency situations but also into the routine management of cultural heritage resources. This requires continuous risk assessment and the implementation of preventive measures to safeguard and manage heritage sites [106]. Depending on the nature of the site, the DRM plan should be as comprehensive as possible. For instance, if a city or urban area contains several cultural heritage sites, a unified risk management plan can be developed for all the cultural heritage sites within the city. The plan should operate within a coordinated system and include joint activities, particularly with external agencies such as municipal authorities, fire services, police, and healthcare services. The disaster risk management cycle, comprising the three main phases of prevention/mitigation, response, and recovery, forms the foundation of DRM plans (Figure 5.2). This is

because the planning process is cyclical, involving continuous feedback between the stages of goal identification, implementation, and evaluation [107]. Furthermore, these three phases can be divided into various sub-phases. Due to the complex and interconnected nature of the process, it is not appropriate to draw sharp boundaries between these stages.

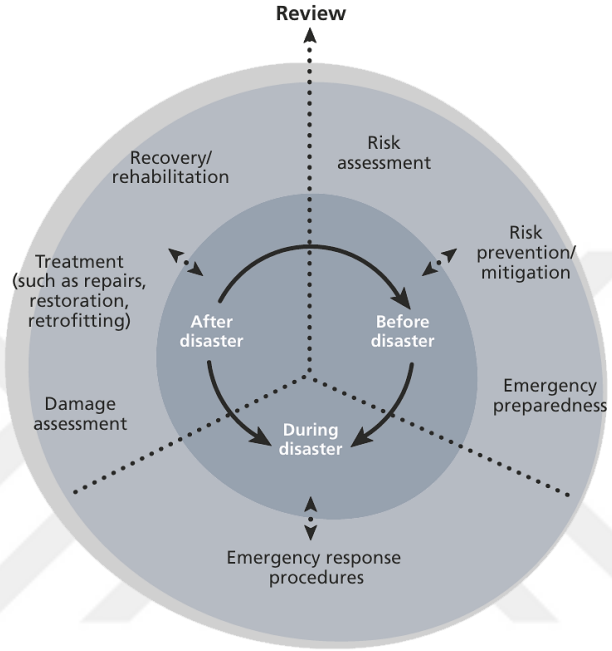

Figure 5.2 Disaster risk management cycle. Source: [107].

- **Pre-disaster (Preparedness phase):** This phase aims to minimize potential human and material losses, ensure preparedness, and enable a rapid and effective response in the event of a disaster. This phase involves activities such as analyzing risks, mitigation at source, strengthening the resilience of cultural heritage, use of early warning systems (e.g., use of sensors to detect the onset or probability of disasters), and the development of emergency response plans (e.g., building the capacity of both property residents and emergency responders to respond to emergencies) [99, 102, 107]. In the context of mitigation, it is essential to ensure that building bylaws are aligned with updated risk assessments. Measures such as disaster mapping, risk communication, spatial planning, and increasing government financial preparedness for post-disaster scenarios play a critical role

in protecting cultural assets and minimizing losses. These actions collectively contribute to promoting disaster-resilient cultural heritage [100].

- **During disaster (Response phase):** This phase encompasses actions aimed at addressing the immediate needs of victims and minimizing their suffering. These activities, commonly referred to as emergency response measures, include efforts to ensure survival, provide shelter, deliver healthcare services, and meet other basic needs in the aftermath of a disaster [99]. Within the framework of cultural heritage preservation, this phase focuses on ensuring the availability of a response plan and mobilizing the protection team. The response plan must be easily accessible and comprehensible in emergencies. Drills and simulations play a critical role in ensuring the effective implementation of the plan [102]. The emergency period typically covers the first 72 hours following a disaster. In this process, new risks may emerge, such as insufficient coordination and preparedness, the demolition of damaged structures with significant heritage value, and improper interventions stemming from a lack of knowledge or expertise [107]. This phase includes efforts such as rescuing individuals trapped under debris, controlled demolition of hazardous damaged structures, and clearing rubble. Simultaneously, a “Historic Building Triage” should be conducted to prioritize emergency interventions for historic structures. For effective emergency response, priorities must be set for the targeted historic buildings. Efforts should focus on ensuring safety and saving lives through temporary stabilization measures for structural systems [62].

- **Post-disaster (Recovery phase):** This phase encompasses efforts aimed at helping affected communities return to normal life quickly, mitigating the effects of the disaster, and repairing the damage [99]. Activities such as damage assessment, treatment, repair, restoration, retrofitting, and recovery are carried out during this process. "Recovery" refers to reaching a stable and healthy state after experiencing trauma, damage, or loss. This process encompasses economic, social, and environmental aspects related to cultural heritage and aims to promote inclusive and sustainable development. Recovery is not limited to returning to the pre-trauma state but rather signifies reaching a new condition shaped by the changes caused by the event. [105]. Recovery largely depends on prior preparations and

measures taken. Assessing the adequacy of pre-disaster measures and improving them based on lessons learned is crucial during this phase [102]. All actions related to recovery and reconstruction must preserve the values of heritage sites, focus on the protection of surviving parts of structures, and contribute to the discovery of new values. The process of improving cultural heritage is comprehensive and multi-scaled. It can include architectural elements, entire buildings, building complexes, cultural landscapes, or historic towns and settlements. Interventions during this phase should incorporate both top-down and bottom-up approaches, integrated with interdisciplinary work. Active community participation at both personal and social levels is essential for the improvement of heritage sites and the restoration of culturally significant living environments. Such participation requires encouragement and support.

Not all disasters are cyclical, and some are one-time events. For recurring events such as earthquakes, this model can be useful. This cycle also highlights the fundamental difference between periods of calm and emergencies. During periods of calm, the focus is on risk reduction, whereas during emergencies, the emphasis is placed on response and recovery [108].

According to Figure 5.3, the 3-stage disaster management cycle is divided into 4 stages, with each of these 4 stages further subdivided into 5 sub-stages. This model is important for showing how the phases of disaster management before and after a disaster are interconnected. It allows for a functional distinction between tasks in terms of time. For example, emergency response is typically a temporary process, while reconstruction can take much longer. Mitigation, on the other hand, should be a continuous, never-ending task. If a community is well-prepared for the next disaster, reconstruction planning can begin immediately after the impact. While this model makes significant contributions to disaster risk management, it also has limitations. For instance, its graphical representation is weak because it gives the impression that protective measures (such as mitigation and preparedness) directly lead to disasters, when, in fact, they should function the opposite way. Addressing disasters and the risks associated with such events is actually a plural process involving multiple 'disaster cycles' rather than a single one. Recovery can progress at different speeds and in

various ways across different sectors (such as historical heritage preservation, economic, medical, infrastructure, social, psychological, etc.) ilerleyebilir [108]. As a result, graphical representations of the disaster risk management cycle can vary based on the characteristics of the area and subject being managed. If a disaster cycle proves insufficient during the disaster process, gaps are identified, and new models are developed to address these shortcomings.

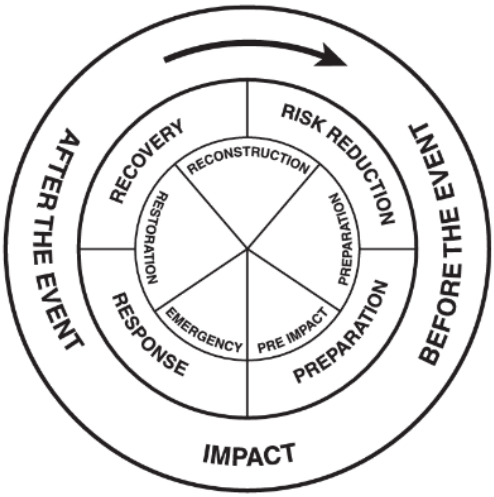

Figure 5.3 Disaster cycle. Source: [108].

Preparing an inventory of cultural heritage should be the first step in analyzing risks and assessments. Since these inventories serve as essential tools for effective emergency planning, they must be kept up to date, easily accessible, and spatially related using Geographic Information Systems (GIS) [106]. This is crucial because, before any interventions aimed at preserving historic buildings, it is necessary to thoroughly understand them. Information should be gathered through historical research, examining records of past earthquakes, repairs, archival documents, and publications. Gathering information about past damage can provide important data on the vertical load-bearing behavior of the historic building under seismic effects and its weak points [62].

First aid training for cultural heritage during disaster times contributes to enhancing emergency response activities. The initiation of emergency response, the

establishment of coordination mechanisms, the phased assessment of damage, risks, and needs post-disaster, as well as documentation and debris management, are areas where this training is helpful [105]. Cultural heritage professionals should be included in disaster planning and be informed about potential natural disasters. This process should ensure that professionals receive emergency management training and are able to communicate effectively with their communities to educate them [106].

In the initial stages of a disaster, the priority is to minimize the loss of human life, which often places the protection of structures in the background. For this reason, a team of conservation specialists should collaborate with search and rescue teams during debris removal operations. However, it should not be forgotten that the first priority is to save lives and meet the basic needs of the victims. Subsequently, in the emergency response and recovery phases, efforts should be made to avoid causing further damage to cultural heritage [109]. Immediately after a disaster, search and rescue teams and experts arriving in the affected area should conduct field studies focusing on the construction systems of the buildings. For regions with a high concentration of historic structures, guidelines addressing traditional construction systems and their behavioral characteristics should be developed. These guidelines will prove valuable during the preparation phase for potential future disasters. Some damaged historic structures may need to be partially or completely demolished during the intervention phase to eliminate potential risks. During this process, specialists should carry out emergency temporary protection and stabilization measures for the structures, ensuring the safety of both the buildings and their surroundings. Additionally, the decorative and valuable components of damaged historic structures should be carefully sorted at the debris site, and their inventories should be prepared to ensure proper preservation [110].

In historic areas with high seismic activity, the seismic history should be examined, and its effects on both traditional and modern structures must be meticulously analyzed. These studies should utilize analytical and physical modeling methods, non-destructive testing, and other modern tools. The data obtained from these analyses should be documented and made accessible [109]. Search and rescue teams must be trained in debris operations specifically within historic environments. Currently,

training is predominantly conducted on reinforced concrete debris, which can lead to inappropriate interventions in historic structures with traditional construction systems. Moreover, such improper actions can endanger both the teams and the victims [110].

After a severe earthquake, local authorities often demolish historic fabric for safety reasons. This tendency must change, and heritage should be preserved sustainably [109]. In the processes of conservation, strengthening, and restoration, an interdisciplinary approach should be adopted, conservation principles must be respected, and architectural heritage should be addressed holistically, including all its components and its contextual surroundings. Irreversible interventions should be avoided as much as possible. Except for emergency safety measures aimed at preventing the collapse of the load-bearing system in cases of earthquake damage or similar situations, no interventions should be made without the necessary analyses and evaluations. Even if the structure is heavily damaged, restoration should involve minimal renewal, avoiding complete replacement. The process should involve an integrated approach combining qualitative (observation-based) and quantitative (experiment- and analysis-based) methods [95].

Reconstruction processes should be documented in detail and made accessible to guide future conservation efforts and the development of risk management strategies. This is because all actions taken during the recovery and response phases contribute to the coordination of quick and effective intervention in future potential disasters. In this way, not only the improvement of the current situation is achieved, but also future conservation efforts can be carried out in a more comprehensive and informed manner [105].

Awareness campaigns led by professionals, academics, and authorities are essential to ensure the restoration of architectural heritage is carried out with respect for authenticity and integrity. Furthermore, journalists and other mass communication tools should be utilized to spread this understanding. Cultural heritage should be integrated into existing disaster risk reduction policies and mechanisms at international, national, and local levels. Local communities must also be involved in preparing and implementing risk management plans, as well as in all stages of disaster recovery processes. Recurrent earthquakes often lead to cumulative damage in historic

urban areas and sites. Therefore, it is crucial to promote the development of new technologies and reversible strengthening methods that are compatible with original materials and construction techniques [109].

Governments should establish expert committees that bring together multidisciplinary specialists to enable the development of coordinated policies. Additionally, governments must promote the administrative and financial measures necessary for the establishment of comprehensive disaster reduction facilities for cultural heritage assets and their surrounding urban environments. Governments should also strengthen institutional support and governance for disaster preparedness, shaping this process through arrangements with civil society. Public institutions, property owners, and other stakeholders should be encouraged to collaborate in formulating policies to safeguard cultural heritage [109].

Collaboration with local authorities should be established to ensure the adoption and implementation of consistent risk management strategies for cultural heritage assets. Training programs on repair and strengthening should be developed for both cultural heritage professionals and emergency personnel, promoting seamless integration between the two groups. Education is the starting point for understanding the importance of disaster preparedness. Therefore, young generations should be made aware of the significance of cultural heritage (both tangible and intangible) and recognize their responsibility for its preservation [109].

Cultural heritage can play a more proactive role in the recovery and rehabilitation process. Traditional crafts and knowledge can be invaluable in rebuilding cultural heritage and enhancing the resilience of communities affected by disasters. Cultural heritage can serve as a source of identity that contributes to the psychological recovery of disaster victims. The tangible connections people have with their history and environment can be a strong motivator for recovery [107]. Incorporating traditional knowledge systems into planning processes helps make these processes more long-term and sustainable. Investing in education and capacity-building programs is a critical step for carrying this knowledge and practices into the future. It is especially important to support projects targeting young people, empowering their cultural identity and encouraging their active participation in post-disaster recovery processes.

In this way, traditional knowledge and practices can be passed down across generations, contributing to the resilience of communities against disasters [105].

Measures for the protection of heritage assets should not be limited to preserving cultural heritage but should also be integrated into broader social and economic recovery processes. These processes should be included in sustainable development plans that promote environmental sustainability and create employment opportunities. In this way, heritage preservation and sustainable development can be approached as an interconnected whole, supporting and reinforcing each other [105]. For example, tourism is often one of the sectors that first feels the direct impacts of natural disasters. If tourism, including cultural tourism, is revitalized, it can create the economic opportunities needed for the country's recovery [106].

A management plan is a comprehensive document that outlines the control, management, and future administration of a protected area, detailing the necessary resources, uses, facilities, and personnel. These plans typically span 5–10 years and aim to ensure more effective management of the protected area. Moreover, management planning clarifies the current condition and future objectives of the area, fostering a more sustainable and efficient management process [111]. Disaster risk management should be an integral part of the management plans for cultural heritage sites. This approach enables the creation of a resilient, sustainable, and well-planned management strategy against potential disasters. The management plans should clearly specify the measures to be taken to manage or reduce risks. Additionally, these plans must be regularly reviewed, revised, and updated to reflect the identified risks [105]. In cases like the Kahramanmaraş-centered earthquakes, where a significant number of buildings were destroyed or heavily damaged, much of the urban population relocated, and the daily routines of city life were disrupted, there is a critical need for multifaceted managerial intervention and comprehensive planning for reconstruction [112].

Disasters pose a significant threat to historic cities such as Antakya. The impact of such events tests the resilience of these cities and complicates interventions aimed at preserving cultural heritage. The extensive destruction experienced by Antakya’s urban conservation area following the February 6 earthquakes requires not superficial but in-depth and professional restoration efforts. Additionally, for a more resilient

Antakya, comprehensive, long-term, flexible, and effective management plans, risk management strategies, and holistic conservation approaches must be developed. These efforts not only address the current damage but also prepare the city for any potential disasters in the future.

Moreover, the preservation of Antakya's urban conservation area demands a collective societal effort. Protecting the values of the past while ensuring a healthy and resilient legacy for future generations should be seen as a continuous and shared responsibility. I hope that conducting more comprehensive and in-depth research and studies on this subject in future work will be highly beneficial.

5.5 Evaluation of the conservation works carried out in Antakya before and after the earthquake

5.5.1. Conservation works carried out in Antakya before the earthquake

Before the February 6, 2023, earthquakes, various restoration projects have been carried out to preserve the historic buildings in the Antakya urban protected area. These projects aimed to protect the city’s historical fabric and cultural values, while also addressing the needs of modern life. Specifically, the restoration of historical buildings, streets, and bazaars aimed to provide sustainable protection in terms of strengthening, aesthetics, and functionality. After the earthquake, efforts to repair the resulting damage while preserving the historical fabric began, with several projects planned. Some of these projects can be listed as follows:

- **Restoration of Antakya Historical Uzun Çarşı**

A few years before the February 6 earthquakes, the restoration of the Historical Uzun Çarşı was completed in collaboration between the Hatay Provincial Directorate of Culture and Tourism and Antakya Municipality (Figure 5.4). The goal of this project was to give the bazaar a modern, orderly, and spacious appearance, and it was carried out in five phases. With a total urban design area of 11,200 square meters and a 12,000-square-meter covering area, it is Antakya's largest street revitalization project [113].

The restoration of Uzun Çarşı carried out before the earthquake appears to be a positive initiative aimed at preserving Antakya's historical heritage in terms of its scope. Innovations such as the covering (roof) and others were implemented to meet the needs of the shopkeepers, increasing the bazaar's functionality. A comprehensive plan divided into stages is considered a good strategy in terms of area management. However, the suitability of the materials and techniques used in the restoration work to the historical fabric is debatable. If the unique structure was damaged in the name of modernization and tourism, this would be inconsistent with the holistic conservation approach. The area surrounding Uzun Çarşı is a historic center that houses many monumental buildings. In the earthquake, most of the historic structures in this area (monumental, commercial, etc.) were severely damaged or destroyed (Figure 5.5). Given the extent of the damage in the earthquake, it appears that overall structural safety was insufficient. The post-earthquake repair efforts offer an opportunity to revisit this project and address its shortcomings, making it more resilient, original, and sustainable.



Figure 5.4 6 February earthquake before the Long Bazaar Restoration. Source: [114].



Figure 5.5 After the 6 February earthquake, the Long Bazaar. Source: By author.

- **Restoration of Antakya Kurtuluş Street**

A few years before the February 6, 2023, earthquakes, the restoration of Kurtuluş Street was carried out by the Antakya Municipality, İller Bankası, and a contractor company (Figure 5.6). The main goal of this project was to more effectively convey the city's historical fabric to the future and to provide visual unity. As part of project, the façades of historical and registered buildings facing Kurtuluş Street were restored. These works were carried out in phases [115]. This project represents an important step in preserving Antakya's historical and cultural heritage. The restoration of the street has significantly contributed to the revitalization of tourism and economic activities, allowing the area to once again become a center of attraction, as it was in the past. The project appears positive in terms of aesthetics and harmony. However, such projects, especially in earthquake-prone regions, should not only focus on aesthetics and functionality but also address structural resilience and holistic conservation principles. The large damage caused by the earthquake suggests that structural durability and earthquake safety issues were not adequately considered during the restoration process (Figure 5.7). Limiting the project to buildings that only face the street points to a lack of a holistic approach and narrows the scope of the project. This is because the buildings within the urban protected area collectively form the historical fabric of the city.



Figure 5.6 6 February earthquake before the Kurtuluş Street Restoration. Source: [115].



Figure 5.7 After the 6 February earthquake, the Kurtuluş Street. Source: By author.

- **Köprübaşı City Square and Surrounding Area Urban Design Competition: "Ma'meydan A City Story"**

In 2021, the project titled "Ma'meydan A City Story" won first place in the Antakya Köprübaşı City Square and Surrounding Area Urban Design Competition. This project tells the story of a city that developed around a river. The main idea behind the project is to present city segments from different time periods, each with its own powerful dynamics, in a holistic urban context along with their respective stories. The project demonstrates an approach where Antakya's cultural heritage is integrated into urban life. The design defines a threshold between Old Antakya and New Antakya and softens the sharp distinction between the two regions through different square designs [116].

The project focuses on local dynamics and the needs of the city's residents, aiming to strengthen both the historical and social fabric. Overall, it can be regarded as a design that offers solutions suitable for contemporary needs while preserving the cultural identity of the area. While incorporating many of the historical buildings in the region is positive from a holistic conservation perspective, there are concerns about its feasibility, earthquake safety, and how interaction with the local population will be managed.

5.5.2. Conservation works carried out in Antakya after the earthquake

- **Antakya Masterplan and Conservation Plan**

The master plan prepared by Foster + Partners covers an area of 30 square kilometers in Antakya. Its goal is to rebuild the city while preserving its historical fabric, scale, and relationships. In addition, the plan prioritizes community safety and a sense of belonging. It is emphasized that this project will establish a community-oriented standard for post-disaster renewal. Given that almost 80% of the city was destroyed after the earthquake, it is expressed that the city needs to be redesigned for future generations. Furthermore, it is noted that before the earthquake, Antakya was already facing certain challenges in the reconstruction process. Many buildings had been constructed in flood-prone areas and along riverbanks, leading to uncontrolled and organic growth. Public spaces had been overtaken by vehicles, and open spaces were unevenly distributed. The key principles of the plan are as follows [117]:

- **Build in Safe Areas:** Protection zones and green buffer areas will be created to guard against potential rises in water levels. This will enhance safety while increasing the amount of green space in the city.

- **Improve Transportation:** New connections have been added while preserving the existing road network. Cumhuriyet Square will be dedicated solely to pedestrians and public transportation.

- **Develop Open Spaces:** A new park along the Asi River and various green spaces will be created, doubling the per capita green space.

- **Create New Districts:** Thirteen new districts have been identified. Each district will be equipped with a main street and social facilities to make the area more livable.

- **Strengthen Neighborhood Structure:** Neighborhoods will be planned with separate pathways for private vehicles, pedestrians, and public transport. The diversity of neighborhoods will be maintained with buildings suitable for the local climate.

- **Strong Neighborhood Connections:** Social facilities, cultural centers, parks, and gardens within neighborhoods will be easily accessible to the public.

- **Strong Intra-City Connectivity:** An efficient public transportation system will be established with bus routes and multimodal transportation hubs across the city.

- **Build a Compact City:** The city center and commercial areas will be intensified, limiting environmental sprawl and creating a more sustainable urban structure.

With this plan, the Ministry of Culture and Tourism and the Türkiye Design Foundation are preparing a new conservation-oriented zoning plan for Antakya. The goal of this plan is to revitalize the region in accordance with its original structure, restore cultural heritage, preserve the city's identity, and pass it on to future generations. The projects aim to create a sustainable, accessible, and resilient city that meets the needs of the public while considering the city's historical fabric [118]. This appears to be a comprehensive approach overall, with important contributions such as:

- Emphasizing historical fabric and local identity

- The inclusion of green buffer zones and water management

- A sustainable and human-centered transportation model

- A community-focused approach that highlights a sense of belonging

However, it is believed that the plan lacks a holistic conservation approach in some areas. Specifically, there is no detailed planning regarding the restoration of historical structures, conservation methods, and the rebuilding of cultural heritage with the participation of the local population. The plan does not clearly define how the local community will be involved in decision-making processes. A method where the local community can directly contribute would make the plan more effective and sustainable. Additionally, the feasibility of such an extensive master plan, considering costs and the capacity of local administrations, remains a question. Moreover, the

integration of the master plan with the conservation-oriented zoning plan is not clearly defined.

- **Çekül Foundation: “Protecting Hatay Together”**

Two months after the earthquakes on February 6, ÇEKÜL Foundation launched a project titled "We Protect Hatay Together." In the historic city center of Antakya, a rapid debris removal operation was carried out without properly protecting even the registered structures. As a result, the protection platforms requested Republic of Turkey Ministry of Environment, Urbanisation and Climate Change to urgently halt the debris removal work. In petitions submitted by NGOs, it was emphasized that there were nearly 1,500 buildings worthy of registration (even if they were not officially registered) in the areas being cleared. Attention was drawn to the fact that the area had the status of an Urban Site, 1st Degree Archaeological Site, and 3rd Degree Archaeological Site. It was noted that if the remnants were carefully and systematically removed with expert supervision, many valuable elements such as historical walls, cupboards, ceilings, and carved stones could be reused in future restoration projects [119].

While the initiatives started by conservation experts through petitions have raised important awareness regarding the protection of cultural heritage, they have proven insufficient in creating an effective and sustainable intervention mechanism. It is believed that the suggestions made by experts have not been adequately considered in the decision-making processes and that the necessary support and collaboration during the implementation phase have not been provided. This situation reflects the lack of a participatory approach in conservation efforts and shows that a holistic approach to cultural heritage management has yet to be fully realized. Therefore, while petitions and similar initiatives serve as a starting point in conservation efforts, it becomes evident that the process must be carried out with a multi-stakeholder approach. Decision-makers and practitioners need to act in stronger coordination with the proposals put forward. Especially unless more effective cooperation is established between local governments, experts, and civil society organizations, there is a risk that the long-term impact of conservation initiatives will remain limited.

This situation suggests that future restoration efforts must incorporate seismic safety measures, ensuring that cultural heritage is not only preserved but also made resilient to natural disasters, particularly in regions like Antakya, which are prone to earthquakes.

- **Restoration Tenders for Antakya Urban Site Area After the Earthquake**

Following the earthquake disaster, a restoration process was initiated in the Antakya Urban Site Area. In this process, various governmental institutions, notably the Ministry of Culture and Tourism and the General Directorate of Foundations, played significant roles. These two entities undertook critical responsibilities, including damage assessment, project planning, implementation, and supervision, to ensure the preservation of the region's historical and cultural heritage. Additionally, various architectural firms actively participated in the processes of surveying, restitution, and restoration. Moreover, municipalities across Türkiye provided substantial support to the restoration efforts in the Antakya urban site area. These municipalities contributed to the progress of projects by providing financial resources, technical equipment, and manpower.

The General Directorate of Foundations reported damage to 81 structures under its jurisdiction following the earthquake. Restoration projects for 59 of these structures have been completed, and their implementation is currently underway. Project planning for the remaining 22 structures is ongoing. Among the historical buildings undergoing restoration by the General Directorate of Foundations are the Kuyumcular Bazaar, Kurşunlu Khan, Semerciler Mosque, Ahmediye Mosque, Mahremiye Mosque, Şeyh Muhammed Mosque, Şeyh Ali Mosque, Kürt Fakih Mosque, Caferiye Masjid, and Nakip Mosque. While these projects are still in progress, the restoration of Hünkar Masjid and Sarımiye Mosque has been completed, and both were reopened for worship in 2024 [120, 121].

The restoration of the Hatay Ulu Mosque, which was destroyed during the earthquake, is being carried out by Bursa Metropolitan Municipality. Advanced technologies have been utilized for the preparation of surveys, restitution, and restoration projects, and the artifacts recovered from the rubble have been meticulously documented. Although

the reconstruction project for the mosque has been completed, the implementation phase has not yet commenced [122].

The restoration of the Habib-i Neccar Mosque, which was heavily damaged in the earthquake, is being carried out under the supervision of the Ministry of Culture and Tourism's Directorate General of Foundations, with Konya Metropolitan Municipality handling the project. During the restoration process, qualified parts of the mosque salvaged from the rubble are also being used. The restoration is expected to be completed by mid-2025 [123].

The survey project for the Rum Orthodox Church and commercial spaces, which were destroyed in the earthquake, was carried out by BusBus Architecture in 2021. Following the earthquake, the documentation work, material and damage analyses, restitution, and reconstruction projects for these structures are being prepared in collaboration with the Ministry of Culture and Tourism, BusBus Architecture, and Arkeoteknik [124, 125].

Following the February 6 earthquakes in Hatay, the Meydan Mosque became the first cultural heritage to undergo restoration as part of the repair and renovation efforts initiated by the Ministry of Culture and Tourism, the Directorate General of Foundations, and the Hatay Governorship [126] .

The restoration of the İhsaniye Mosque, which collapsed in the earthquake, is being carried out by the Ministry of Culture and Tourism. Additionally, important Ottoman-era elements, such as the mosque's inscriptions, columns, and column capitals, as well as the decorated mihrab and pulpit, were damaged during the disaster. Teams from the Disaster Area Excavation Presidency have realized efforts to recover these historical fragments [127].

5.6 Assesment of Chapter

Heritage consists of the values passed down from the past, those we live with today, and those we transfer to future generations. World Heritage sites encompass cultural and natural assets of outstanding universal value. Cultural and natural heritage are irreplaceable sources of both life and inspiration. The awareness of protecting world

heritage dates back to ancient times, but scientific restoration methods began to be implemented in Europe in the 19th century. Through the UNESCO World Heritage Convention, the preservation of cultural and natural heritage has been recognized not only as a national responsibility but also as a shared responsibility of all humanity. With the spread of this convention from Europe to the world, international declarations and guidelines have been prepared, resulting in the universalization of the conservation movement.

Initially, the concept of preservation emerged at the monumental structure level, but in the 20th century, it evolved into a holistic approach to conservation at the urban scale. Particularly with the adoption of the Venice Charter in 1964, the approach to site conservation began to be embraced. With contributions from UNESCO, ICOMOS, ICCROM, and the Council of Europe, the development of conservation practices accelerated from the 1980s onwards. In Türkiye, the first legal regulations for the protection of cultural heritage began in the 19th century and have continued to be updated and renewed ever since. In this context, new laws have been enacted, and various official institutions have been established.

At the international level, the 1931 Athens Charter and the 1964 Venice Charter laid the foundation for modern conservation principles. The 1954 Hague Convention focused on the protection of cultural heritage during armed conflicts. The 1979 Burra Charter emphasized the significance of heritage for people, while the 1987 Washington Charter adopted community participation as a key element of preservation. The 1994 Nara Document on Authenticity focused on preserving the identity and authenticity of cultural heritage. The 1999 Charter on the Built Vernacular Heritage aimed to preserve original values of vernacular heritage through a multidisciplinary approach. The 2002 Budapest Declaration emphasized the integration of conservation, development, and sustainability, aiming to promote social and economic growth, improve quality of life, and raise public awareness. It highlighted that damage to World Heritage is detrimental to humanity and the world, calling for support and cooperation. Furthermore, it stressed the importance of enhancing the World Heritage List.

The 2011 Valletta Principles expanded the scope of cultural heritage preservation in urban areas, prioritizing the protection of intangible values such as identity, continuity,

and social relations. It recommended the creation of buffer zones around heritage sites and the development of effective management plans for each area. In 2013, ICOMOS Türkiye published the Architectural Heritage Conservation Declaration, highlighting Türkiye's rich cultural heritage and emphasizing the importance of interdisciplinary collaboration in its preservation. In addition to these guidelines, many other charters have been published. All these documents play a significant role in ensuring the sustainable preservation of cultural assets at both national and international levels, guaranteeing the transmission of these assets to future generations. These charters establish specific standards and principles in heritage preservation, enabling the development of an effective conservation strategy.

The preservation of cultural heritage is fundamentally a risk management process. In this process, hazard analysis and the assessment of potential risks are essential. These analyses are critical parameters that influence the protection of cultural heritage. The Disaster Risk Management cycle encompasses all activities, programs, and measures that can be carried out before, during, and after a disaster, with the aim of preventing the disaster, reducing its impact, or recovering from its losses. Many countries facing the challenge of protecting cultural heritage from earthquakes adopt an "Integrated Risk Management" approach, which gives equal emphasis to actions before, during, and after a disaster.

The preservation of historic cities should be supported not only by scientifically based studies but also by a societal effort and awareness. To achieve this goal, it is crucial to develop a holistic preservation strategy and ensure that all segments of society play an active role in the process. Holistic preservation is an approach that considers all aspects of the cultural heritage site, including its structural and functional elements, as well as its environmental and social contexts. This approach aims not only to preserve a single building or structural element but also to safeguard the entire settlement or region. In other words, it addresses the preservation of historic buildings, environmental factors, social life, and cultural context as a whole.

Before the February 6th earthquakes, various restoration and repair works were carried out in the Antakya urban conservation area. Streets such as Kurtuluş Avenue, Uzun Bazaar, monumental structures, and traditional houses were renovated, thus making

the city a focal point. However, it was observed that the structural resilience and safety of most of these projects, which were positive in terms of aesthetics, harmony, and functionality, were insufficient against earthquakes. Furthermore, most of the restoration projects implemented in Antakya were either carried out at the scale of a single building or covered only a limited area. In order to repair the severe damage to the Antakya urban conservation area, not superficial but in-depth and professional works are required. Long-term, flexible, effective, and comprehensive management plans need to be developed. These plans will not only address the rehabilitation of the existing damage but also ensure preparedness for any potential future disasters.

CHAPTER 6

CONCLUSION

In this study, damage assessments of the urban conservation area of Antakya, which holds the city's memory and identity, were conducted after the February 6th earthquakes. Based on the findings, various proposals for the protection of the area were presented through a holistic conservation approach. Antakya is a cosmopolitan city located in the eastern Mediterranean, known for its historical and cultural wealth. Divided by the Orontes River, this city has hosted many civilizations throughout history. Bearing the traces of Hellenistic, Roman, Byzantine, Islamic, Ottoman, and French cultures, the city is of great significance for Judaism, Christianity, and Islam. This rich religious heritage is one of the key factors shaping Antakya's multicultural character and religious diversity. This diversity has not only shaped the city's social structure but also had a profound impact on its architecture. Religious structures representing Christianity, Islam, and Judaism are an integral part of the city's architectural fabric.

Antakya, located at the northern edge of the Jordan Rift Valley, has been an active seismic region and has experienced numerous destructive earthquakes throughout its history. The city's urban fabric has undergone several transformations over time, yet it has been rebuilt each time. Influenced by various civilizations throughout history, Antakya has grown both physically and culturally, with its architectural structure and social fabric constantly evolving due to factors such as wars, earthquakes, and invasions.

Antakya is a city shaped by the influence of different cultures throughout its history, with a rich architectural heritage. The old city of Antakya has a traditional fabric with narrow streets, courtyard houses, squares, and monumental structures. Historical streets, particularly Kurtuluş Street, are important transport hubs within the city. Antakya's traditional houses stand out for their courtyards, offering shaded and cool spaces well-suited to the Mediterranean climate. These houses are typically inward-facing, with courtyards that emphasize privacy. Historically, Antakya has been located

on major trade routes, shaping the city's commercial structure. During the Ottoman period, bazaars, covered markets, and inns became the centers of trade. Moreover, mosques and prayer halls, shaped by Islamic architecture, form significant parts of the city's religious fabric. Antakya is also a city bearing traces of Christianity and Judaism; landmarks like the Saint Pierre Church and Jewish synagogues reflect this multi-religious heritage. Additionally, soap factories, bathhouses, and inns in Antakya served as important centers for trade and social life, with their unique architecture becoming an inseparable part of the city's cultural heritage.

Antakya, throughout its history, has been influenced by various forms of governance, and each era has left its mark on the city's urban planning. In the 20th century, particularly during the French Mandate period, new urbanization movements gained momentum, influenced by Western styles, leading to the emergence of distinct urban plans on both sides of the Orontes River. The city plan of Old Antakya carries the organic fabric of the Ottoman period, while New Antakya developed with geometrically structured, Western-style urban planning. In this context, the Orontes River functioned as a symbolic boundary, separating two different worlds of thought: the East and the West. During the period of the Turkish Republic, various zoning plans have been prepared, aiming to guide the city's development while preserving the historical city center.

Due to Turkey's geological structure, the country is frequently exposed to natural disasters, leading to large-scale destruction and losses. The 2023 Kahramanmaraş earthquakes caused significant human losses and extensive damage to cultural heritage. In historic and culturally rich settlements like Antakya, such disasters resulted in severe damage and required immediate actions for the protection of cultural heritage. Antakya, with its urban and archaeological site areas, is a city with a multi-layered history. The earthquakes centered in Kahramanmaraş on February 6, 2023, severely impacted this region, with a significant portion of the 250 registered structures analyzed on-site sustaining damage. This has led to a major disruption not only in the city's physical structure but also in its social and cultural memory.

In the field research, it was determined that out of the 250 registered buildings in the Antakya urban conservation area, 131 were collapsed. In 1st group, which consisted of 44 monumental buildings, 3 were undamaged, 7 were slightly damaged, 3 were moderately damaged, 16 were heavily damaged, and 15 were collapsed (Table 6.1). In 2nd group, 19 buildings were undamaged, 19 were slightly damaged, 13 were moderately damaged, 39 were heavily damaged, and 116 were collapsed (Table 6.2).

Among the mosques surveyed in the field, Hatay Ulu Mosque, Mahremiye Mosque, Zülfikar Mosque, Yeni Mosque, Semerciler Mosque, Meydan Mosque, İhsaniye Mosque, and Nakipoğlu Mosque have been collapsed. The Habib-i Neccar Mosque, Ahmediye Mosque, Orhanlı Mosque, Şeyh Muhammed Mosque, Osmanlı Mosque, Şeyh Ali Mosque, Deveci Bekiroğlu Mosque, Kürtfakih Mosque, and Sarımiye Mosque were heavily damaged. Selvili Mosque was moderately damaged, while Sofular Mosque was slighty damaged. Among the masjids, Debruz Masjid was moderately damaged, while Rıfat Ağa Masjid, Ali Çavuş Masjid, and Hünkâr Masjid were slighty damaged, and Uçtum Masjid was undamaged. Regarding synagogues and churches, the Greek Orthodox Church (Church) was collapsed, while the Turkish Catholic Church and Konut Synagogue were undamaged.

The damage assessment of the hamams(baths) revealed that Cindi Hamam and Saka Hamam were heavily damaged, while Yeni Hamam and Meydan Hamam were collapsed. Among the khans, Defne Khan, Kurşunlu Khan, and Tütün Khan were heavily damaged, while Yeni Khan was collapsed. Additionally, the bedesten in the urban site area was heavily damaged. Regarding the soap houses, Kuseyri Soap House and Sabun Soap House were collapsed, Aselci Soap House was heavily damage, while Savon Soap House and Old Soap House were slightly damaged. In terms of the tombs, Şeyhoğlu Tomb was collapsed, Şıh Abdurrahman Tomb was moderately damaged, and Hıdır Tomb was slightly damaged.

Table 6.1 Summary of damage status of the 1st group buildings. Source: Prepared by the author.

	Collapsed	**Heavily Damaged**	**Moderately Damaged**	**Slightly Damaged**	**Undamaged**
Mosque	Hatay Ulu Mosque Mahremiye Mosque Zülfikar Mosque Yeni Mosque Semerciler Mosque Meydan Mosque İhsaniye Mosque Nakipoğlu Mosque	Habib-i Neccar Mosque Ahmediye Mosque Orhanlı Mosque Şeyh Muhammed Mosque Osmanlı Mosque Şeyh Ali Mosque Deveci Bekiroğlu Mosque Kürtfakih Mosque Sarımiye Mosque	Selvili Mosque	Sofular Mosque	–
Masjid	–	–	Debruz Masjid	Rıfat Ağa Masjid Ali Çavuş Masjid Hünkâr Masjid	Uçtum Masjid
Church	Church (Greek Orthodox Church)	–	–	–	Turkish Catholic Church
Synagogue	–	–	–	–	Konut Sinagog
Hamam (Bath)	Yeni Hamam Meydan Hamam	Cindi Hamam Saka Hamam	–	–	–
Khan	Yeni Khan	Defne Khan Kurşunlu Khan Tütün Khan	–	–	–

Table 6.2 (continued): Summary of damage status of the 1st group buildings. Source: Prepared by the author.

Covered Bazaar	_	Covered Bazaar	–	–	–
Soap House	Kuseyri Soap House Sabun Soap House	Aselci Soap House	_	Savon Soap House Old Soap House	–
Tomb	Şeyhoğlu Tomb	_	Şıh Abdurrahman Tomb	Hıdır Tomb	–

Parliament House (Former Hatay), Mado House, T.C. Ziraat Bank, and the Police Station were collapsed. PTT Building (Post Office), Municipal Building, Directorate of Health, and Vocational High School were heavily damage. The Governor House and Trahom War Dispensary were moderately damaged, while Antakya Museum was slightly damaged. Atatürk Square and Monument and Ali Sayar Primary School were undamaged. Antakya houses suffered significant damage during the earthquake. Out of 158 houses, 97 were collapsed, 28 were heavily damaged, 6 were moderately damaged, and 13 were slightly damaged. The remaining 14 houses were undamaged. Out of the 13 commercial buildings examined, 7 were collapsed, 2 were heavily damaged, and 3 were slightly damaged. One commercial building was undamaged. Out of 22 commercial-residential buildings examined, 8 were collapsed, 5 were heavily damaged, 5 were moderately damaged, and 2 were slightly damaged. The remaining 2 commercial-residential buildings were undamaged.

Table 6.3 Summary of damage status of the 2 nd group buildings. Source: Prepared by the author.

	Collapsed	**Heavily Damaged**	**Moderately Damaged**	**Slightly Damaged**	**Undamaged**
Other Buildings	Parliemant House (Former Hatay) Mado House T.C. Ziraat Bank Police Station	PTT Building (Post Office) Municipal Directorat of Health Vocational High School	Governer House Trahom War Dispancary	Antakya Museum	Atatürk Square and Monument Ali Sayar Primary School

Table 6.2 (continued): Summary of damage status of the 2 nd group buildings. Source: Prepared by the author.

Housing	97 housing	28 housing	6 housing	13 housing	14 housing
Commercial	7 commercial	2 commercial	_	3 commercial	1 commercial
Housing-Commercial	8 housing-commercial	5 housing-commercial	5 housing-commercial	2 housing-commercial	2 housing-commercial

Damage assessment studies are crucial for ensuring that historic buildings undergo a proper restoration process. The significant loss of Antakya's historical fabric highlights the importance of reconstruction and preservation efforts in the city. In this context, damage evaluations provide guidance for the necessary steps to be taken for the city's future. The protection of world heritage is recognized as both a national and global responsibility, and many international agreements and charters have been developed to this end. These documents have established universal standards for preservation efforts, aiming for the sustainable conservation of cultural assets. In Türkiye, significant legal regulations and conservation movements have also been implemented within this framework.

The preservation of historic cities should be supported not only by scientific foundations but also by societal awareness and effort. The holistic preservation approach aims to protect an entire area by considering structural, functional, environmental, and social factors. Antakya, with its historical buildings and cultural heritage, is an important city. Before the February 6, 2023, earthquakes, various restoration projects were carried out, but it was found that most of these projects were insufficient in terms of the holistic preservation approach. With the earthquakes, Antakya's urban site area has been severely damaged. The restoration of Antakya must be carried out through a deep, comprehensive, and expert-driven approach rather than superficial interventions. This process should aim not only to repair the existing damage but also to prepare for potential future disasters. Developing an effective and strategic management plan will ensure the sustainable protection of cultural heritage while increasing societal awareness and participation. These holistic efforts are critical for making historic cities resilient and ensuring their long-term durability against future disasters.

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APPENDICES

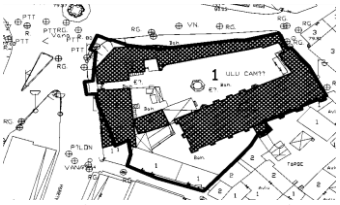
Appendix A: 1st Group Buildings Identified in the Field Study

Appendix B: 2nd Group Buildings Identified in the Field Study

Appendix A – 1st Group Buildings Identified in the Field Study

Table A. 1 Buildings Identified in the Field Study (Prepared by author).

Hatay Ulu Mosque




Site plan of Hatay Ulu Mosque *(left)*. Source: [9]. General view of Hatay Ulu Mosque *(right)*. Source: [128].

Damage Level:	**4**
Inventory Number:	B11
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The building, designed as a complex *(külliye),* is located in Ulu Cami Mahallesi, on the banks of the Asi River, in the old Antakya region. It is one of the most significant mosques in Antakya. Hatay Ulu Mosque and its complex consist of a mosque, madrasa, summer mosque, fountain, two tombs, public kitchen *(imarethane),* and shops. Although the exact construction date is unknown, inscriptions indicate that it was built during the Mamluk period in the 13th century [129]. The structure was rebuilt in the 16th century, demolished in 1987 due to static problems, reconstructed in the same style, and restored in 2005 [37, 1]. The mosque has a trapezoidal courtyard. This courtyard is accessed through crown gates on the east and west sides. To the north of the courtyard are the madrasah cells and minaret, to the south the mosque, and to the west the summer mosque and shops. It has two mihrabs; east and west. It is the only building with two mihrabs in the Harim. This may have been done to serve different sects. It has a marble minbar. The minaret rises with a polygonal body on a square base and is adjacent to the madrasah to the north of the courtyard. Stone ornamentation workmanship was applied. The upper cover is cross-vaulted and illuminated by arched windows. It reflects the local architectural character of Antakya with features such as the presence of a madrasah in its courtyard, its trapezoidal planned courtyard and the minaret being separate from the mosque [46].



a b c d

Madrasah rooms and minaret in courtyard of Hatay Ulu Mosque (a). Source: [130]. Fountain and eastern gate of the courtyard of Hatay Ulu Mosque (b, c). Source: [Google Maps]. Harim section of Hatay Ulu Mosque (d). Source: [131].

Post-Earthquake Situation of the Building:

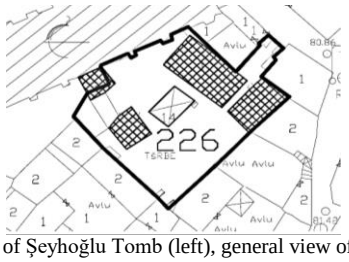
The building was destroyed in the 2023 Kahramanmaras earthquake. It was determined that the tombstones in the tomb preserved their current condition in the debris. Bursa Metropolitan Municipality has initiated the reconstruction works of the complex to protect and rebuild the cultural heritage.



Status of Hatay Ulu Mosque after the earthquake. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Şeyhoğlu Tomb

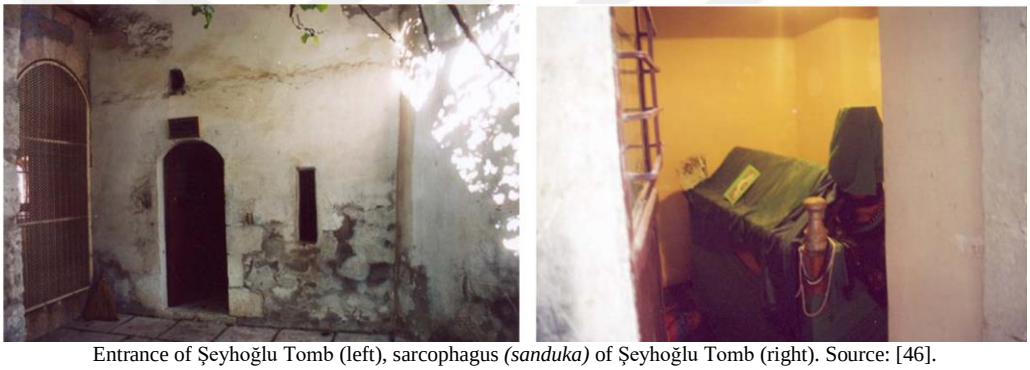


Site plan of Şeyhoğlu Tomb (left), general view of Şeyhoğlu Tomb (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B12
Type of Building:	Tomb

Pre-Earthquake Situation of the Building:

It is also referred to as the Şeyh Abdurrahman Efendi Mausoleum. The tomb is believed to have been constructed at the end of the 19th century or the beginning of the 20th century. It is located to the east of the mihrab in the cemetery south of the Hatay Ulu Mosque. The tomb has a square plan, is single-story, and is covered with a cross-vaulted ceiling. It is accessed through an arched door on the western facade [46].



Entrance of Şeyhoğlu Tomb (left), sarcophagus *(sanduka)* of Şeyhoğlu Tomb (right). Source: [46].

Post-Earthquake Situation of the Building:

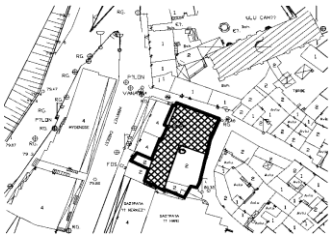
The building was completely demolished. Tombstones are visible among the rubble piles.



Post-earthquake situation of Şeyhoğlu Tomb. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Cindi Hamam/Bath




Site plan of Cindi Hamam/Bath (left), general view of Cindi Hamam/Bath (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B13
Type of Building:	Hamam/Bath

Pre-Earthquake Situation of the Building:

The Cindi Hammam was constructed during the Mamluk period in 1527 [13]. This building is located in the Zenginler neighborhood, on Kırk Asırlık Türk Yurdu Street, near the Ulu Mosque. It stands at the corner where two streets intersect, with a crown gate opening onto each street. These gates are iwans with pointed arches. One gate is designated for men, while the other is for women. The building operates as a single hamam with separate usage times for men and women. The Cindi Hammam consists of a soyunmalık, two ılıklık, a sıcaklık, and a külhan. It is one of the two hammams in Antakya with two ılıklık, the other being the Saka Hammam. The roof system of the building consists of a combination of barrel vaults and domes. Notably, the dome of the soyunmalık differs from the others in its construction, being pointed rather than circular [46].



Facade, domes and gates of Cindi Hamam/Bath. Source: [46].



Soyunmalık and sıcaklık section of Cindi Hamam/Bath. Source: [46].

Post-Earthquake Situation of the Building:

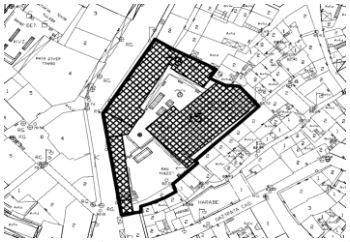
The Cindi Hammam sustained significant damage during the Kahramanmaraş earthquakes, with most of the structure being destroyed. However, the entrance door and a small portion of the wall on this facade appear to remain intact.



Post-earthquake situation of Cindi Hamam. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Church (Greek Orthodox Church)



Site plan of Greek Orthodox Church (left). Source: [9]. General view of Greek Orthodox Church (right). Source: [132].

Damage Level:	**4**
Inventory Number:	B15
Type of Building:	Church

Pre-Earthquake Situation of the Building:

The Greek Orthodox Church is located on Hürriyet Street in the Zenginler neighborhood. Construction of the building began in the 1860s, but it was heavily damaged and collapsed during the 1872 earthquake. Reconstruction began in the late 19th century, and the church was reopened for worship in 1900. It is a rectangular-plan church with a bell tower on its right side. The courtyard is surrounded by revaks [132]. The church is a three-floor masonry structure with a single entrance. Shops are located on the lower floors [9].



Courtyard, bell and interior of Greek Orthodox Church. Source: [Google Maps].

Post-Earthquake Situation of the Building:

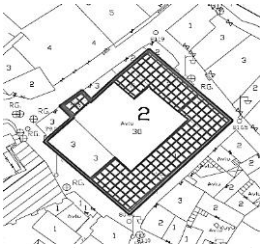
The church sustained severe damage in the February 6 earthquakes and was largely destroyed. Only a small portion of the walls remains standing. Examples of iconography have been found among the rubble. The bell tower and the shops surrounding the church were also destroyed, and the traces of their arches are still visible.



Post-earthquake situation of Selvili Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Covered Bazaar




Site plan of Covered Bazaar (left), general view of Covered Bazaar (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B16
Type of Building:	Covered Bazaar

Pre-Earthquake Situation of the Building:

The structure has a rectangular plan and is surrounded by streets on all four sides. It is constructed from cut stone and rubble stone. The roof is vaulted and has a flat earth covering. Later additions have been made around it. The building is two stories tall, with entrances on each street side. It is an inward-facing structure with a central courtyard, and aside from the entrance doors, there are no other openings to the outside. The shops are formed by vaulted spaces, with wooden houses built on top of them [9]. Originally built as a bedesten during the Ottoman period, the structure is also reported to have been used as a soap house for a time. Later, it lost its original function and became a carpentry workshop. After its use as a carpentry workshop, the building eventually lost its function and was preserved and registered as a protected site. Prior to the February 6th earthquake, the building operated as a restaurant and a künefe shop [50].



Facades and interior views of Covered Bazaar. Source: [41].

Post-Earthquake Situation of the Building:

The heavily damaged structure has largely collapsed. The traces of vaults found among the rubble piles are likely to belong to the shops.

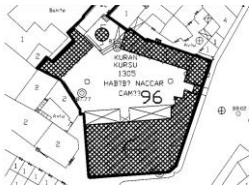


Post-earthquake situation of Covered Bazaar. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Habib-i Neccar Mosque

Damage Level:	**3**
Inventory Number:	B21
Type of Building:	Mosque





Site plan of Habib-i Neccar Mosque (left). Source: [9]. General view of Habib-i Neccar Mosque (right). Source: [133].

Pre-Earthquake Situation of the Building:

The building built as a complex is a monumental structure made of cut stone [9]. This complex is located at the intersection of Kurtuluş Street and Kemal Paşa Street. It takes its name from a Christian carpenter named Habib-i Neccar who lived in Antakya in the 40s AD. There are graves belonging to Habib-i Neccar, some apostles, and other Christians in the complex. The mosque was built when Antakya was conquered by Muslim Arabs in the 7th century. It was used as a church in the Byzantine and Crusader periods. After the Mamluks conquered the city, the Habib Neccar Mosque was rebuilt in 1285 [134].The trapezoidal courtyard contains a mosque, a tomb, madrasah cells, and a fountain. The building has a domed plan in front of the mihrab and is illuminated by arched windows. The courtyard is accessed from the crown gate in the east. The minaret rises with a polygonal body on a square-planned base and is covered with an umbrella balcony (şemsiyeli şerefe). The late comers' porch (son cemaat) is located to the north of the harim. The harim section is covered with a dome carried by four piers and pointed arches. The transition to the dome is provided by pendentives. It has a mihrab and a marble pulpit. Stone, wood, hand-drawn, and calligraphic ornaments were used as decoration. There are a total of eight inscriptions in various parts of the complex. The mosque has undergone repairs in the recent past and before. Habib Neccar Mosque resembles Şeyh Ali Mosque and Yeni Mosque in terms of plan; it also resembles Ulu Mosque, Şeyh Ali Mosque, and Yeni Mosque in terms of irregular courtyard [46].



a b c d

Crown gate, late comers' porch and fountain of Habib-i Neccar Mosque (a, b, c). Source: [135]. Harim section of Habib-i Neccar Mosque (d) Source: [46].

Post-Earthquake Situation of the Building:

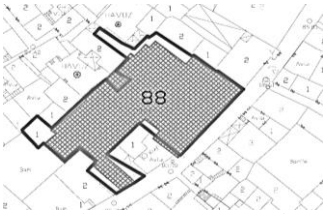
The complex was severely damaged in the 2023 Kahramanmaraş earthquakes. Although the main walls of the mosque are still standing, there is extensive damage. The minaret, late comers' porch, and dome have collapsed. There are structural cracks in the qibla wall and east-west walls. The northern wall has collapsed. Although there are cracks in the crown door, it is still standing. The fountain has suffered moderate damage. The restoration of the complex has been initiated by the Directorate General of Foundations and the Konya Metropolitan Municipality.



Earthquake damages on the dome, late comers' porch, crown gate, facades and fontains. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Yeni Hamam/Bath





Site plan of Yeni Hamam/Bath (left), general view of Yeni Hamam/Bath (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B31
Type of Building:	Hamam/Bath

Pre-Earthquake Situation of the Building:

Yeni Hamam, distinguished as a single hamam, was constructed in the 17th century. It features two separate entrances, one for men and one for women. Except for its southern facade, which faces Çankaya Street, the other facades are surrounded by civilian structures. The main entrance, used by men, is located on this street and is designed as an iwan-style arched crown gate (*taç kapı*). The secondary entrance, used by women, is accessed from a side path to the north. The hamam is constructed from cut stone and consists of a soyunmalık, a ılıklık, a sıcaklık, and a külhan. These spaces are covered with barrel vaults and domes. The interior is illuminated by dome lanterns and skylights. In accordance with Jewish beliefs, the lukewarm section originally included a plunge pool; however, this pool was later removed and converted into a washing cell [46].





Entrance facade and soyunmalık section of Yeni Hamam/Bath. Source: [46].



Dome and iwan details of Yeni Hamam/Bath. Source: [46].

Post-Earthquake Situation of the Building:

The Cindi Bath, located in close proximity to the Grand Mosque, has largely collapsed. The entrance gate of the bath appears to be intact.

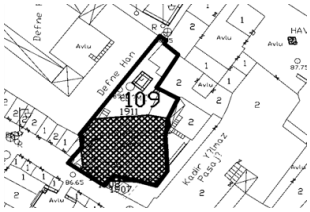




Post-earthquake situation of Yeni Hamam. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Mahremiye Mosque





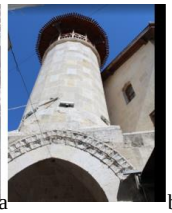
Site plan of Mahremiye Mosque (left) Source: [9]. Courtyard of Mahremiye Mosque (right) Source: [Google Maps].

Damage Level:	**4**
Inventory Number:	B45
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

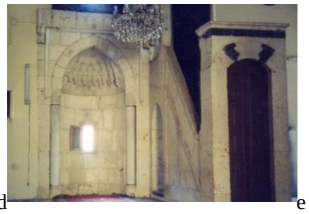
The initial construction of the mosque in Uzun Bazaar is believed to have occurred between the 14th and 15th centuries. Mahremiye Mosque was affected by the earthquake of 1872 and underwent repairs during that time. Renovations have continued from then to the present day. The complex consists of a mosque, a fountain, and a single-cell madrasa, all located within a courtyard. The courtyard has two gates: one in the north and one in the south. The monumental gate in the south is integrated with the base of the minaret. The courtyard is accessed through the crown gate via a passage covered with a barrel vault and an 11-step staircase. The mosque and minaret are constructed of cut stone. The minaret, influenced by Mamluk architecture, features a polygonal body and a wooden balcony (şerefe). The integration of the minaret with the courtyard entrance reflects the traditional architectural style of Hatay. The buildingis illuminated by windows on facades. Access to the harim is provided through the late comers' porch (son cemaat). The harim is covered with a wooden roof. On either side of the mihrab are balancing columns that can rotate around their axis. The mosque also includes a stone minbar decorated with colorful stone craftsmanship. A simple mahfil is located above the entrance. Stone is the primary material used in the ornament of the mosque [46].


a


b


c


d


e

Crown gate, minaret and tunnel-like passage and harim of Mahremiye Mosque (a, b, c,). Source: [Google Maps]. Mihrap and pulpit *(minber)* of Mahremiye Mosque (e). Source: [46].

Post-Earthquake Situation of the Building:

The mosque and its roof have collapsed. The crown gate appears to be intact. The minaret's balcony and part of its body have collapsed. Despite sustaining damage, the wall of the eastern facade remains standing. The restoration works of the building have been initiated by the Directorate General of Foundations.





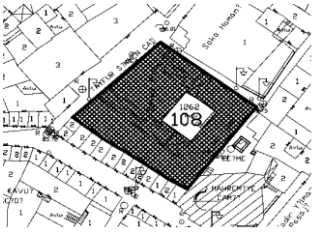




Earthquake damages on facades, minaret, crown gate, walls and roof. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Defne Khan





Site plan of Defne Khan (left), general view of Defne Khan (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B47
Type of Building:	Khan

Pre-Earthquake Situation of the Building:

Defne Khan, also known as Sokullu Mehmet Paşa Khan, is estimated to have been constructed between 1574 and 1862. The structure underwent various repairs over the years and was converted into a commercial building during its 2006 restoration [46]. Located in Antakya's bazaar region, it sits between Mahremiye Mosque and Saka Hamam. A passage between the khan and the mosque allowed travelers staying in the khan to directly access the mosque. The khan has a nearly square plan, is two stories tall, and features a central courtyard. The entrance facade includes shops with pointed arches [136]. The building, which consists of spaces arranged around an inner courtyard, is believed to have originally served as a soap house. The courtyard contains 16 olive oil storage units [9]**.** The structure is constructed from cut stone. The ground floor is covered with cross and barrel vaults, while the upper floor is topped with a roofing system clad in traditional Turkish tiles (alaturka kiremit). Access to the upper floor is provided by a staircase located in the stone-paved courtyard. During the 2006 restoration, the courtyard was fully enclosed with a semi-transparent covering supported by a steel frame. Today, the restored structure operates as a tourist bazaar under the name "Defne Khan" [41].






Façades of Defne Khan (left). Source: [41]. Courtyard of Defne Khan (right). Source: [46].

Post-Earthquake Situation of the Building:

The building has suffered significant damage. The walls on the entrance facade remain partially intact, and remnants of the vaults from the shops on this facade are still visible.

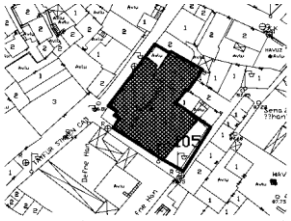




Post-earthquake situation of Defne Khan. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Saka Hamam/Bath




Site plan of Saka Hamam/Bath (left), general view of Saka Hamam/Bath (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B48
Type of Building:	Hamam/Bath

Pre-Earthquake Situation of the Building:

The building is estimated to have been constructed in the 16th century. It is located in Antakya's bazaar region, near Mahremiye Mosque, and sits at a lower elevation than the surrounding street level. The southern facade is blind and shares a boundary with Defne Khan on this side, while civilian structures are located to the north. The western facade features a simple design and provides access to the hamam through an iwan-style arched entrance. The hamam consists of a soyunmalık, two ılıklık, a sıcaklık, and a külhan. Notably, the second ılıklık houses a tomb. The structure employs a variety of roofing systems, including cross vaults, barrel vaults, and domes. It is constructed from finely cut stone [46].



Entrance façade, soyunmalık section, tomb and sıcaklık section of Saka Hamam/Bath. Source: [46].

Post-Earthquake Situation of the Building:

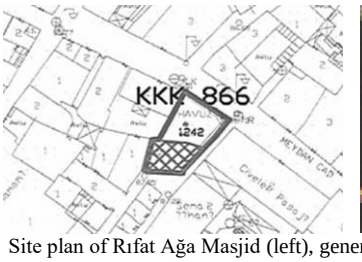
The building is heavily damaged. The entrance has been largely demolished. The domes appear to be intact.

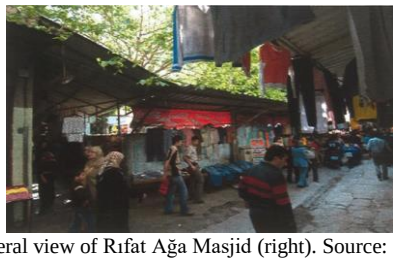


Post-earthquake situation of Yeni Hamam. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Rıfat Ağa Masjid



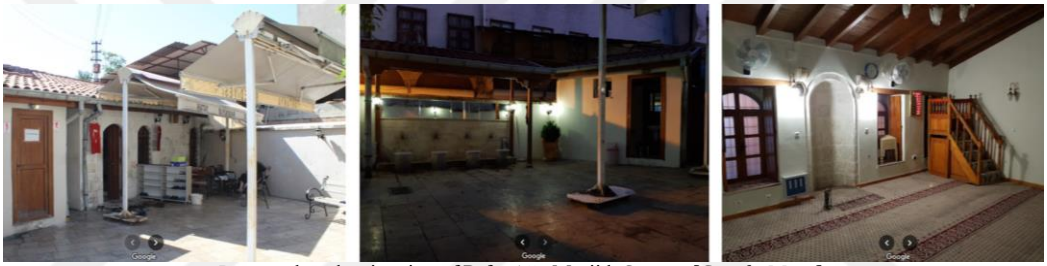


Site plan of Rıfat Ağa Masjid (left), general view of Rıfat Ağa Masjid (right). Source: [9].

Damage Level:	**1**
Inventory Number:	B49
Type of Building:	Masjid

Pre-Earthquake Situation of the Building:

Located on Meydan Street, this modest mosque is situated within a small courtyard. The courtyard is accessed via three steps at the front. Inside the courtyard, there is a decorative pool. The mosque consists of two rooms: one functions as a tea house, while the other serves as a prayer area. The prayer area includes a small *mihrab* and is covered with a wooden roof [9]. The structure features an arched door and arched windows.



Post-earthquake situation of Rıfat Ağa Masjid. Source: [Google Maps].

Post-Earthquake Situation of the Building:

The structure appears intact from the outside. However, as the courtyard gate is closed and the walls are high, the extent of any interior damage could not be determined.





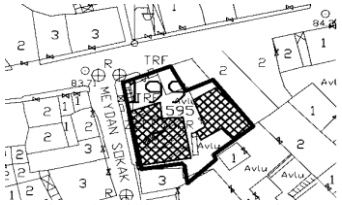




Post-earthquake situation of Rıfat Ağa Masjid**.** Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Zülfikar Mosque





Site plan of Zülfikar Mosque (left). Source: [9]. General view of Zülfikar Mosque (right). Source: [46].

Damage Level:	**4**
Inventory Number:	B52
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The building is located at the corner of the intersection of two streets on Meydan Street. It is thought to have been built in the 19th century. The mosque features a modestly sized prayer hall (harim) and includes a school within its courtyard. Above the courtyard gate is an ezanlık (a platform for the call to prayer). The mosque is covered with a wooden roof and has arched windows. The qibla facade is adjacent to a civilian structure. A section of the late comers' porch (son cemaat) has been elevated from ground level to form a stone platform (seki), which serves as a summer prayer area. The mosque has a simple mihrab and exhibits a plain and modest architectural style, devoid of decorative elements [46].


a

b

c

Courtyard, entrance, school and harim of Zülfikar Mosque (a, b). Source: [46]. Mihrap of Zülfikar Mosque (c). Source: [Google Maps].

Post-Earthquake Situation of the Building:

The roof of the building has collapsed, and partial destruction and cracks were observed on the walls. The ezanlık was not destroyed, but deep cracks were found in the wall carrying the ezanlık. No access to the interior of the mosque could be provided due to the roof collapsing into the courtyard.

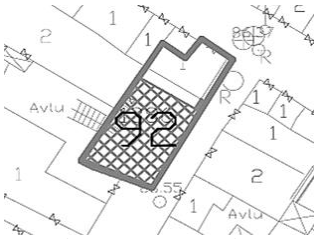





Earthquake damages on building. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Debruz Masjid





Site plan of Debruz Masjid (left), general view of Debruz Masjid (right). Source: [9].

Damage Level:	**2**
Inventory Number:	B53
Type of Building:	Masjid

Pre-Earthquake Situation of the Building:

The mosque, estimated to have been built in the 19th century, is located in the Şeyh Ali Neighborhood. It is a small neighborhood mosque with a wooden roof and a modest courtyard at the front. To the right of the courtyard entrance, there is a small fountain. The structure is single-floor and constructed from cut stone. It is illuminated by arched windows. Inside, a large pointed arch supports the roof. A simple mihrab marks the qibla direction, and there are niche cupboards on the western and southern walls [46].




Facade of Debruz Masjid Mosque (left). Source: [Google Maps]. Harim section of Debruz Masjid (right). Source: [46].

Post-Earthquake Situation of the Building:

Various damages have been observed on the facade; however, the structural integrity of the building remains intact. Cladding stones and infill sections on the exterior facade have fallen off. Cracks have also been identified on the courtyard wall and around the windows. Additionally, the fountain located next to the courtyard gate has sustained damage.



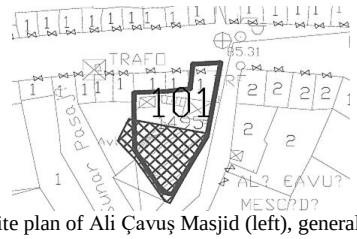


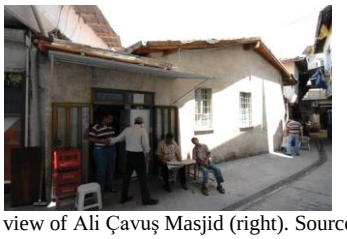



Post-earthquake situation of Debruz Masjid. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Ali Çavuş Masjid





Site plan of Ali Çavuş Masjid (left), general view of Ali Çavuş Masjid (right). Source: [9].

Damage Level:	**1**
Inventory Number:	B54
Type of Building:	Masjid

Pre-Earthquake Situation of the Building:

Located within Uzun Bazaar, this mosque is a modest neighborhood mosque consisting of a single space with a small courtyard. It is constructed using cut stone and covered with a wooden roof. The courtyard gate features a flat arch. The irregularly shaped *harim* is illuminated by rectangular windows and contains a simple *mihrab*. The mosque has no decorative elements or ornamental features [46].



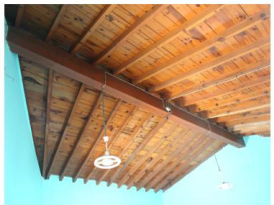

Courtyard facade and harim section of Ali Çavuş Masjid. Source: [46].

Post-Earthquake Situation of the Building:

The masjid was minimally affected by the February 6 earthquakes and remains intact. Only very minor damage has been observed in the courtyard.



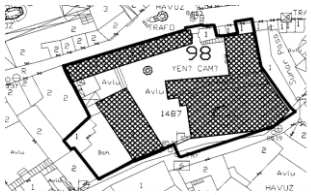



Post-earthquake situation of Deveci Bekiroğlu Mosque**.** Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Yeni Mosque





Site plan of Yeni Mosque (left), general view of Yeni Mosque (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B59
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The Yeni Mosque located in Uzun Bazaar is estimated to have been constructed in the 16th century. This complex consists of a courtyard that incorporates a fountain, a mosque, and madrasa cells. The courtyard features two entrances, one located in the north and the other in the south. The northern crown gate, which provides access to the courtyard from Uzun Bazaar, is designed in the form of an iwan and is adorned with intricate stone craftsmanship. The mosque itself follows a domed plan in front of the mihrab and features arched windows. The minaret, constructed from cut stone, is positioned adjacent to the mosque. It includes a wooden balcony (şerefe) and an umbrella shape, characteristic of the traditional architectural style of the region. The late comers' porch (son cemaat), elevated from ground level, features pointed arches and is covered with wooden roofing. The mosque contains a mihrab and a marble pulpit (minbar). The building has one dome. The dome is supported by four large pointed arches and pendentives. Stone workmanship was used intensively as ornamentation. Yeni Mosque is similar to Habib Neccar and Şeyh Ali mosques in terms of plan arrangement [9, 46].


a

b

c

d

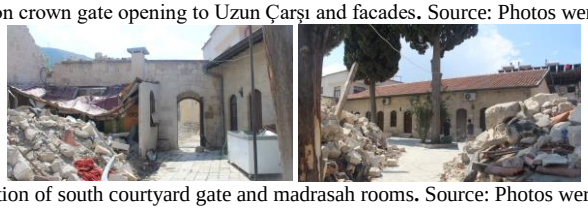
Courtyard, fountain and minaret of Yeni Mosque (a, b). Source: [137]. Entrance from Uzun Çarşı of Yeni Mosque (c). Source: [138]. Harim section; dome, mihrap and pulpit (minber) details. Source: [46].

Post-Earthquake Situation of the Building:

The crown gate opening to Uzun Bazaar remains largely intact; however, structural cracks are evident. Separations have been identified in the stones of the hemispherical iwan section, and cracks are also present in the pendentives of the gate. The southern gate of the courtyard on the Yeni Cami Street side is in good condition. Aside from a small part of the body walls, the entire mosque has been demolished. The minaret and the fountain have also been entirely destroyed. In contrast, the structure originally constructed as madrasa cells has survived with minimal damage.



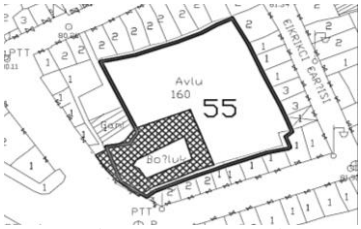
Earthquake damages on crown gate opening to Uzun Çarşı and facades. Source: Photos were taken by the author.



Post-earthquake situation of south courtyard gate and madrasah rooms. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Old Soap House





Site plan of Old Soap House (left), general view of Old Soap House (right). Source: [9].

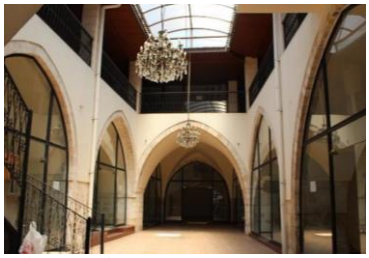
Damage Level:	**1**
Inventory Number:	B71
Type of Building:	Soap House

Pre-Earthquake Situation of the Building:

This historic soap house, located at the intersection of Kemalpaşa Street, Uzun Çarşı Street, and Abacılar Street, is estimated to have been built in the 19th century by Ömer Şenek. For this reason, it is also referred to as the Ömer Şenek Soap House. Another known name for the structure is the Müftüoğlu Soap House. The soap house, which features an inner courtyard, is a two-floor stone building. Similar to other soap houses in Antakya, it ceased to function in the second half of the 20th century [50]. The structure was registered and placed under protection in 1985. Restoration work began and was completed in 2015 [139].




Facade of Old Soap House (left), general view of Old Soap House in 1996 (right). Source: [139].

Courtyard facades before restoration (left), courtyard facades after restoratio(right). Source: [139].

Post-Earthquake Situation of the Building:

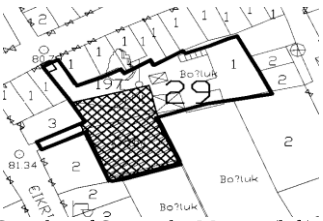
The structure, which appears intact from the front, shows superficial cracks on its facade. The lightly damaged building also appears to have a collapsed roof.




Post-earthquake situation of Old Soap House. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Semerciler Mosque




Site plan of Semerciler Mosque (left), general view of Semerciler Mosque (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B72
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

Constructed in the 19th century, the Semercier Mosque is a small and modest mosque. The courtyard of Semerciler Mosque is entered through two doors, one in the north and the other in the west. The northern door opens to Uzun Bazaar, and the minaret is next to this door. The minaret has a square base, a short cylindrical body, and a balcony [46]. It has a courtyard covered with cut stone. The courtyard includes a plane tree, a well, and a fountain. The mosque has a single space and was built with cut stone. The late comers' porch (son cemaat) was added to the courtyard later. The wooden roof is supported by two large pointed arches. The walls are flat plaster [9]. The harim contains a simple mihrab and a pulpit (minbar) aligned with the entrance door. Semerciler Mosque was restored in 1990 by the Directorate General of Foundations [46].


Minaret, courtyard, well,fountain, plane tree and harim section of Semerciler Mosque. Source: [46].

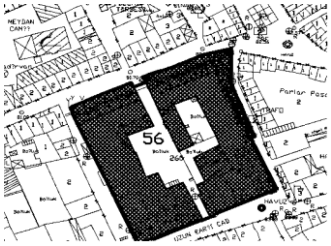
Post-Earthquake Situation of the Building:

The Semerciler Mosque was destroyed during the 2023 Kahramanmaraş earthquakes. However, the centuries-old plane tree in its courtyard has survived and remains standing amidst the rubble. Restoration and revitalization efforts have been initiated by the Directorate General of Foundations.


Post-earthquake situation of Semerciler Mosque and plane tree. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Kurşunlu Khan





Site plan of Kurşunlu Khan (left), general view of Kurşunlu Khan (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B73
Type of Building:	Khan

Pre-Earthquake Situation of the Building:

It is believed to have been constructed in the 16th century and was built as part of the complex. The Kurşunlu Khan is a rectangular-plan building with two floors, arranged around a central courtyard. There is a fountain on the western facade and a mosque located at one corner of the courtyard. The structure is made of cut stone. Various extensions have been added to the külliye over time, allowing it to survive to the present day [46]. All doors and windows are pointed-arched and open into the courtyard [9]. The building has two entrances. Some sections of the facades contain shops. Due to its location and historical significance, Kurşunlu Khan is considered one of the most valuable commercial buildings in Antakya [41].




Courtyard view of Kurşunlu Khan. Source: [140].

Post-Earthquake Situation of the Building:

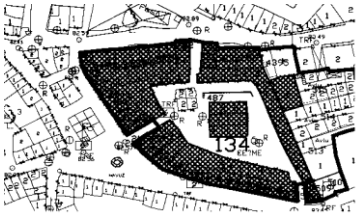
The building is heavily damaged. A part of the building is completely demolished, and a part of it seems to be intact. There is a collapse in the roof part at the corner point of the building. The main walls are standing, but there are cracks and spalling in the stones. The vault at the entrance door appears to be intact, but there are cracks. There are also partial collapses in the inner courtyard.



Post-earthquake situation of Kurşunlu Khan. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Tütün Khan-Kuyumcular Khan



Site plan of Tütün Khan (left), general view of Tütün Khan (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B75
Type of Building:	Khan

Pre-Earthquake Situation of the Building:

The exact construction date of the building is unknown, but it is believed to date back to before the 19th century. It has a trapezoidal rectangular plan and is built from cut stone. Three of its facades are surrounded by streets, while one side is adjacent to other buildings. It has a total of 37 shops arranged around a courtyard. Most of the shops are covered with barrel vaults [46]. The building is single-floor and also serves as a jewelry bazaar [9]. Asarcıklı (1989) describes the jewelry bazaar as "a simple type of bedesten with shops inside and outside" [12]. The roof of the building is covered with traditional Turkish tiles. Over time, the structure has lost its characteristics as an inn and has transformed into a bazaar [41].



Views of Tütün Khan. Source: [41].

Post-Earthquake Situation of the Building:

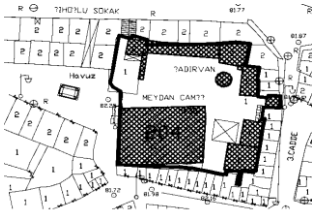
The building is heavily damaged. Some of the shops have been demolished, and some of them are intact.



Post-earthquake situation of Tütün Khan. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Meydan Mosque



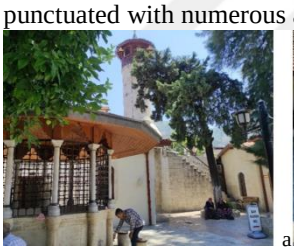


Site plan of Meydan Mosque (left), general view of Meydan Mosque (right). Source: [9].

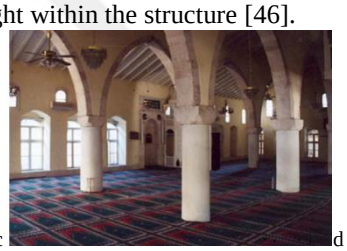
Damage Level:	**4**
Inventory Number:	B79
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The exact construction date of the Meydan Mosque, located in the Meydan neighbourhood, is unknown; however, it is estimated to have been built in the 16th century. The structure, designed as a complex, took its current form following repairs made after the earthquake of 1872. The L-shaped courtyard contains a mosque, madrasa cells, a fountain, and a muvakkithane (a timekeeping room). The courtyard is accessed through gates located on its eastern and western sides. Surrounded by shops on three sides, the complex features finely crafted cut stonework. The crown gate, designed in the form of a vaulted iwan, has a pointed arch. Adjacent to the eastern crown gate is a minaret, also constructed of cut stone, with a wooden balcony (şerefe). The mosque is covered with a wooden roof supported by pointed arches. It includes a late comers' porch (son cemaat) and is among the largest mosques in Antakya. The interior features a decorated mihrab and minbar. The facades are punctuated with numerous arched windows, enhancing natural light within the structure [46].


a

b

c

d

Minaret and fountain of Meydan Mosque (a). Source: [141]. Late comers' porch and wooden roof of Meydan Mosque (b, c). Source: [142]. Harim of Meydan Mosque (d) Source: [46].

Post-Earthquake Situation of the Building:

The structure suffered severe damage during the 2023 Kahramanmaraş earthquakes. Significant portions of the roof, minaret, late comers' porch, harim (prayer hall), and retaining walls were destroyed. Although the minaret collapsed, it appears to remain structurally stable. The fountain (şadırvan) has also been observed to be intact.

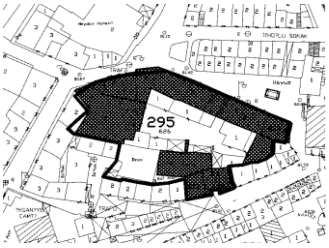
Following the February 6 earthquakes in Hatay, the Meydan Mosque became the first cultural heritage to undergo restoration as part of the repair and renovation efforts initiated by the Ministry of Culture and Tourism, the Directorate General of Foundations, and the Hatay Governorship [126] . The restoration work contracted to Bursa Sama İnşaat is currently ongoing.



Post-earthquake situation of walls, facades, crown gate, minaret and fountain. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Yeni Khan





Site plan of Yeni Khan (left), general view of Yeni Khan (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B81
Type of Building:	Khan

Pre-Earthquake Situation of the Building:

Meydan Hamamı, located in the Meydan neighborhood, has a trapezoidal plan geometry. Some sections of the building are two floors, while others are single-floor. It is constructed using rubble stone and cut stone in a masonry style. On the north facade of the khan, there are pointed-arched shops opening onto the street on the ground floor. The roof is covered with traditional Turkish tiles. The second floor of the khan can be accessed via a stone staircase located in the courtyard [41]. The building has undergone various repairs and additions over the years. Its original construction is estimated to date back to the 16th-17th centuries [46].




Facade and courtyard of Yeni Khan. Source: [41].

Post-Earthquake Situation of the Building:

The structure is almost completely collapsed. Traces of vaults have been observed in the interior.




Post-earthquake situation of Yeni Khan. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Ahmediye Mosque



Site plan of Ahmediye Mosque (left), general view of Ahmediye Mosque (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B82
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The Ahmediye Mosque was constructed in the 19th century and is located within a courtyard surrounded by shops [46]. It is a masonry mosque featuring a single space, a fountain (şadırvan), and a minaret. The doors and windows are arched, and the wooden roof is supported by pointed arches. The fountain is covered with a wooden structure supported by wooden arches [9]. The mosque implement cut stone craftsmanship. A minaret, recently added as a separate structure, has been placed at the southwest corner of the site. The mosque has a simple mihrab and, overall, presents a modest appearance with no decorative elements [46].



Facade, fountain, minaret and harim section of Ahmediye Mosque. Source: [46].

Post-Earthquake Situation of the Building:

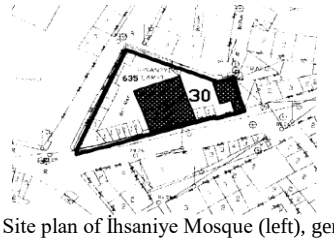
As the courtyard gate of the structure was closed, observations could only be made from the outside. Although it appears to have sustained significant damage, the structure remains largely intact. The cladding stones on the façade have fallen off. Restoration efforts have been initiated by the Directorate General of Foundations.



Post-earthquake situation of Ahmediye Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

İhsaniye Mosque





Site plan of İhsaniye Mosque (left), general view of İhsaniye Mosque (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B83
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The structure is estimated to have been constructed between the 16th and 17th centuries. It features a modest L-shaped courtyard that includes a mosque, a fountain, a madrasa, and fountains added at a later period. No traces of the madrasa have survived. The courtyard also contains a burial ground (hazire). The mosque has a stone minaret with a square base, a cylindrical body, and a single balcony [9]. The crown gate, designed in the form of an iwan, reflects stone craftsmanship. The mosque is covered with a dome and constructed from cut stone. Access to the harim is provided through the late comers' porch (son cemaat). The mihrab and minbar, both made of marble, exhibit bi-colored stone craftsmanship. İhsaniye Mosque is distinguished as a richly decorated structure in Antakya and its surroundings. Additionally, the mosque is one of the rare mosques in the Antakya region where a single dome dominates the space [46].


a


b


c


d

Dome and minaret of İhsaniye Mosque (a). Source: [143]. Crown gate of İhsaniye Mosque (b). Source: [144]. Courtyard, late comers' porch of İhsaniye Mosque (c). Source: [145]. Harim, mihrap and pulpit (minber) details of İhsaniye Mosque (d). Source: [46].

Post-Earthquake Situation of the Building:

The İhsaniye Mosque was destroyed during the February 6 earthquakes, with only a small portion of the courtyard wall remaining intact. Significant Ottoman-era elements of the mosque, including inscriptions, columns, and column capitals, as well as the decorated *mihrab* and *minbar*, were shattered in the disaster. The Ministry of Culture and Tourism has initiated restoration efforts to salvage these historical fragments and to repair the mosque [127].



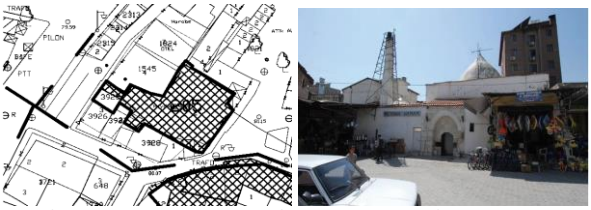




Post-earthquake situation of İhsaniye Mosque**.** Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Meydan Hamam/Bath



Site plan of Meydan Hamam/Bath (left), general view of Meydan Hamam/Bath (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B84
Type of Building:	Hamam/Bath

Pre-Earthquake Situation of the Building:

The initial construction of the Meydan Hamam is estimated to date back to the late 13th or early 14th century. Over the years, it has undergone various repairs due to earthquakes and humidity. The hamam is situated slightly below street level, and due to the surrounding shops, only the eastern facade with the entrance gate is visible from the outside. The entrance features a crown gate with a barrel-vaulted, iwan-style, arched design, adorned with zigzag decorative details. The interior consists of four main sections: the soyunmalık, soğukluk, sıcaklık, and the külhan. These spaces are covered with domes and barrel vaults [46].



Entrance facade and dome of Meydan Hamam/Bath. Source: [46].



Soyunmalık and ılıklık section of Meydan Hamam/Bath. Source: [46].

Post-Earthquake Situation of the Building:

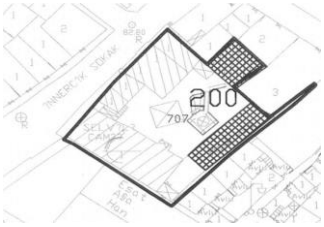
The structure has been completely destroyed. However, remnants of arches belonging to the hamam have been observed among the rubble.



Post-earthquake situation of Meydan Hamam. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Selvili Mosque





Site plan of Selvili Mosque (left). Source: [9]. General view of Selvili Mosque (right). Source: [46].

Damage Level:	**2**
Inventory Number:	B87
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The current structure is believed to have been constructed in the 19th century, although the date of the original construction is unknown. The courtyard contains a mosque, an open-air prayer area (namazgâh), a madrasa, and a fountain (şadırvan). Shops are located on the street-facing side of the façade, where the courtyard entrance is situated. As the mosque is set behind the shops, it is not visible from the street. The courtyard gate features a flat arch and has an ezanlık (call-to-prayer platform) with a wooden balcony above it. In the center of the courtyard, a square stone platform (seki) serves as an open-air prayer area (namazgâh). The mosque has a rectangular plan with a simple mihrab. The structure lacks any decorative elements, and its roof is constructed from wood [46].It is believed that the building was converted from an old house into a mosque. The structure is made of cut stone [9].



a b c d

Ezanlık and courtyard gate of Selvili Mosque (a). Source: [Google Maps]. Courtyard and namazgah of Selvili Mosque (b). Source: [146]. Facade and harim of Selvili Mosque (c, d). Source: [46].

Post-Earthquake Situation of the Building:

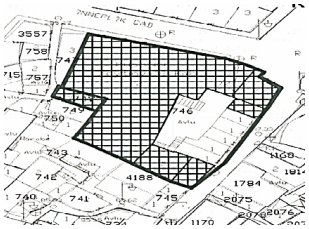
The entrance section to the courtyard and the minaret above it have been destroyed. Access to the interior has been obstructed due to the rubble in the courtyard. As a result, a full assessment of the building's condition has not been possible. Externally, the mosque appears to be partially intact. It has been observed that the southern part of the madrasa has collapsed, while the remaining sections are assumed to be structurally sound.



Post-earthquake situation of Selvili Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Kuseyri Soap House




Site plan of Kuseyri Soap House (left), general view of Kuseyri Soap House (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B88
Type of Building:	Soap House

Pre-Earthquake Situation of the Building:

A unique example of traditional Antakya architecture, the Kuseyri Soap House is a two-floor stone structure where olive oil production took place. The building's entrance is covered by a cross-vaulted ceiling. The ground floor consists of spacious, high rooms with cross-vaulted ceilings. Shops are located on the eastern and northern facades, while the western facade has been filled with unsightly additions [9]. The Kuseyri Soap House in the Meydan Neighborhood is located in the historic commercial center of Old Antakya. It is believed to have been constructed in the second half of the 19th century. The building lost its function in the 20th century. In 2009, it was registered and protected by the Adana Conservation Regional Board [50].




Courtyard views of Kuseyri Soap House. Source: [147].

Post-Earthquake Situation of the Building:

The structure is largely collapsed. Traces of vaults have been observed among the rubble, indicating the original form of the building.





Post-earthquake situation of Kuseyri Soap House. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Aselci Soap House




Site plan of Kuseyri Soap House (left), general view of Kuseyri Soap House (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B96
Type of Building:	Soap House

Pre-Earthquake Situation of the Building:

The Aselci Soap House is located at the corner of Kurtuluş Street and Suphi Bedir Uluç Street. It is estimated to have been built in the 19th century and is situated directly across from the Savon Soap House. This area contains five of the eight historical soap houses in Antakya, establishing the northern part of the city as a prominent soap production zone. Currently, the Aselci Soap House has lost its original function and is in a state of ruin. Shops such as tailors, second-hand goods dealers, electronics stores, photographers, and hair salons now operate along the façade of the building facing Suphi Bedir Uluç Street. The structure was later registered and placed under protection [50]. The building's original characteristic is its structure, which consists of a ground floor with cross-vaulted ceilings and an upper floor covered with a tiled roof arranged around a central courtyard. Its inward-oriented design features windows that mostly open toward the courtyard. The courtyard is stone-paved and surrounded by arched windows and doors [9].


Facades facing the courtyard and interior views of the Aselci Soap House. Source: [139].

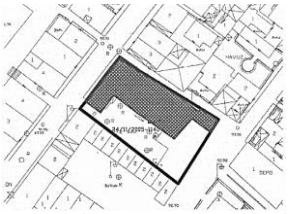
Post-Earthquake Situation of the Building:

A large part of the structure has collapsed and is severely damaged. Traces of vaults are visible in the building. The entrance side of the courtyard has been closed off by unsightly concrete buildings.


Post-earthquake situation of Aselci Soap House. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Sabun Soap House




Site plan of Sabun Soap House (left), general view of Sabun Soap House (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B97
Type of Building:	Soap House

Pre-Earthquake Situation of the Building:

The Sabun Soap House is located on Kurtuluş Street, just north of the Savon Hotel. Originally built as a caravanserai in the 16th century, the building underwent a transformation into a soap production facility in the 19th century. It is also known as the Selahattin Ökten Soap House. In 2005, it was officially registered and placed under protection. The historic Sabun Soap House retained its original function and continued soap production until the February 6 earthquake. In this regard, it differs from other historical soap factories in Antakya. The soap production at this soap house adheres to both national and international standards, and the soaps produced are exported to various countries, primarily in the Middle East [50]. The building is two stories. The ground floor features rubble stone walls with cross-vaulted and plastered ceilings. The walls of the upper floor are made of cut stone, covered with a roof clad in tiles. The windows on the upper floor are enclosed with wooden lattice frames [9].




The facade of the Sabun Soap House facing the courtyard in 1934 (left), western facade of Sabun Soap House. Source: [139].




Interior views of Sabun Soap House. Source: [139].

Post-Earthquake Situation of the Building:

The building was completely demolished.

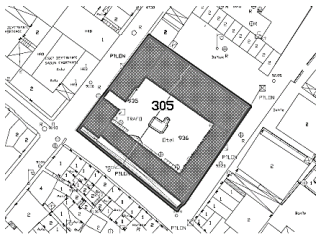




Post-earthquake situation of Sabun Soap House. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Savon Soap House





Site plan of Savon Soap House (left), general view of Savon Soap House (right). Source: [9].

Damage Level:	**1**
Inventory Number:	B98
Type of Building:	Soap House

Pre-Earthquake Situation of the Building:

Located between Kurtuluş Street and Çetin Emeç Street, the building is also known as the Şeyhoğlu Soap House and sits opposite the Aselci Soap House. Constructed in the 1860s, the building was used for olive oil and soap production for many years, featuring a "U"-shaped plan layout. Soap and olive oil production continued until the 1960s. In 1985, the structure was registered and placed under protection. Restoration work began in 2001, and in 2003, the building was repurposed as a hotel. The hotel was named Savon, meaning "soap," and continues to operate under this name [50]. Constructed from stone, the building incorporates vaults and arches and features a stone-paved courtyard. However, significant alterations were made during the restoration process. Some spaces were removed, its original function was changed, and the structural integrity was disrupted. Despite these changes, the building's plan characteristics have been preserved [9].

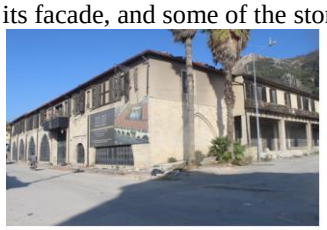




Savon Soap House on the left, Aselci Soap House on the right in 1934 (left). The facade of the Savon Soap House facing the courtyard (right). Source: (Çiftyürek, 2021).

Post-Earthquake Situation of the Building:

The structure has sustained minor damage in the earthquake and appears mostly intact. There are superficial cracks on its facade, and some of the stones have fallen off.





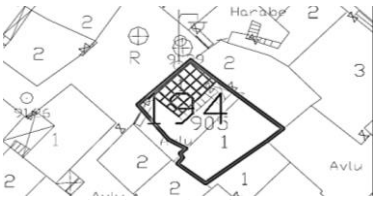




Post-earthquake situation of Savon Soap House. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Hıdır Tomb





Site plan of Hıdır Tomb (left), general view of Hıdır Tomb (right). Source: [9].

Damage Level:	**1**
Inventory Number:	B99
Type of Building:	Tomb

Pre-Earthquake Situation of the Building:

The tomb was built in the 19th century. Its exterior walls are made of stone, and the roof is flat and reinforced concrete. It is located within a small courtyard. The building is accessed by a single step. There is a classical dome at the center of the roof. Inside, there is a sarcophagus (sanduka). Two windows are located beside the door. There are niches inside for placing candles. The tomb is also known as "Ziyaret" [9].

Post-Earthquake Situation of the Building:

The structure has sustained minor damage in the earthquake. There are partial collapses in its walls. The dome appears intact from the outside. However, since entry is not possible, an assessment of the interior damage could not be made.

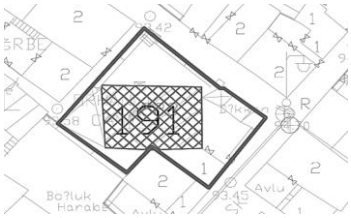





Post-earthquake situation of Hıdır Tomb. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Orhanlı Mosque



Site plan of Orhanlı Mosque (left). Source: [9]. General view of Orhanlı Mosque (right). Source: [46].

Damage Level:	**3**
Inventory Number:	B101
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The structure located in the Orhanlı neighborhood is a simple neighborhood mosque with a small courtyard. It was built in the 19th century using stone. The structure, which has undergone repairs in both the past and more recently, retained its original minaret and inscription until the 6th of February earthquake. The mosque consists of a rectangular space with a wooden roof. The short, cylindrical minaret located to the west of the courtyard is independent from the mosque. The building is illuminated by arched windows [46].



a b c

View of the Orhanlı Mosque from the street (a). Source: [37]. View of the Orhanlı Mosque from the street and minaret details Mosque (b, c). Source: [Google Maps].

Post-Earthquake Situation of the Building:

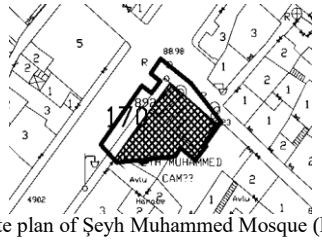
The mosque has suffered extensive damage. All parts of the minaret except its base have collapsed, and the roof has fallen. Most of the walls have been destroyed.



Post-earthquake situation of Orhanlı Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Şeyh Muhammed Mosque




Site plan of Şeyh Muhammed Mosque (left), general view of Şeyh Muhammed Mosque (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B105
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

Located on Kurtuluş Street in the Şeyhali Neighborhood, Şeyh Muhammed Mosque was built in the 18th century. The entrance to the mosque is provided through an arched portal on the minaret's base, accessed by a staircase. The courtyard features mosaic flooring. The mosque is a single-floor, simple structure with plastered walls. The ceiling is flat and wooden, and it has a circular mihrab. As with other historic mosques in Antakya, the mihrab of Şeyh Muhammed Mosque also contains a small illumination window. The minaret has a cylindrical body and is made of cut stone [9, 46].





Minaret, mihrap and harim of the Şeyh Muhmmed Mosque. Source: [148].

Post-Earthquake Situation of the Building:

The mosque's minaret was completely destroyed during the earthquake. However, the crown gate below the minaret remained intact. The mosque sustained minor damage, with superficial cracks observed on its façade. Since the interior of the building could not be examined, it is not possible to provide a definitive assessment of the extent of damage. The repair and renovation works of the building were initiated by the General Directorate of Foundations and are still ongoing.

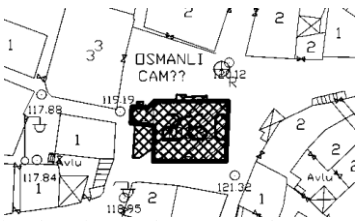





Post-earthquake situation of Şeyh Muhammed Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Osmanlı Mosque

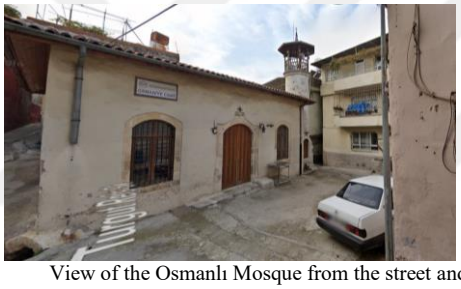



Site plan of Osmanlı Mosque (left), general view of Osmanlı Mosque (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B111
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The mosque is a single-floor, small neighborhood mosque located at the corner of two intersecting streets in the Sofular District. It was constructed in the 19th century. The building has a nearly square, rectangular plan and is situated on slightly sloping terrain. It lacks a courtyard, and all of its façades open directly onto the street. A minaret, built independently of the mosque structure, is located at the northeast corner. The minaret features a square base, a cylindrical body, and a wooden balcony. The facades are illuminated by arched windows. The mosque has a simple mihrab and is characterized by its modest and unadorned design, with no decorative embellishments [46].



View of the Osmanlı Mosque from the street and minaret detail Mosque. Source: [Google Maps].

Post-Earthquake Situation of the Building:

Significant structural cracks have been observed in the building following the earthquake. Although there is partial collapse of the walls, the overall structural integrity of the mosque has been preserved. The minaret, however, has been completely destroyed.

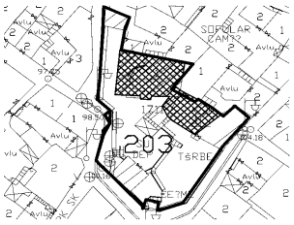




Post-earthquake situation of Osmanlı Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Sofular Mosque





Site plan of Sofular Mosque (left). Source: [9]. General view of Sofular Mosque (right). Source: [46].

Damage Level:	**1**
Inventory Number:	B112
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The mosque was originally constructed between the 13th and 14th centuries. The current structure is believed to have been built in the 19th century. The building has undergone various repairs and additions over the years [46]**.** Located on sloping terrain, Sofular Mosque is a single-floor structure within a courtyard paved with cut stone. The entrance is on the southern facade, and the facades are made of plain stone walls [9]. In the courtyard, along with the mosque, there is a minaret, fountain, and two tombs. Outside the courtyard, on the street facade, there is a fountain. The building is covered with a wooden roof, supported by two large pointed arches in the harim. It features a square-based, stone minaret with a surrounding staircase. What distinguishes this mosque from other mosques in Antakya is the direction of the Harim door, which faces the Qibla (south). The mosque is illuminated through rectangular windows on the facades. It also has a mihrab with a small window. The mosque is a simple structure, devoid of any decorative elements [46]**.**



Façade, minaret, harim sectin and mihrab of the Sofular Mosque. Source: [Google Maps].

Post-Earthquake Situation of the Building:

The building itself remains largely intact. However, structural cracks are present on both the façade and interior walls, as well as in the pointed arches. There is minor damage to the eaves of the roof. While the base of the minaret is preserved, its body, balcony, and cone have been destroyed. The mihrab and pulpit are in good condition**.**



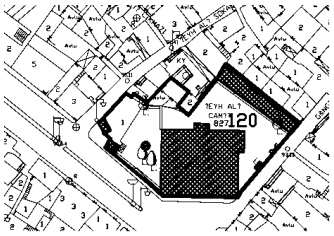
Post-earthquake situation of facades, minaret, courtyard of Sofular Mosque. Source: Photos were taken by the author.



Post-earthquake situation of harim section of Sofular Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Şeyh Ali Mosque



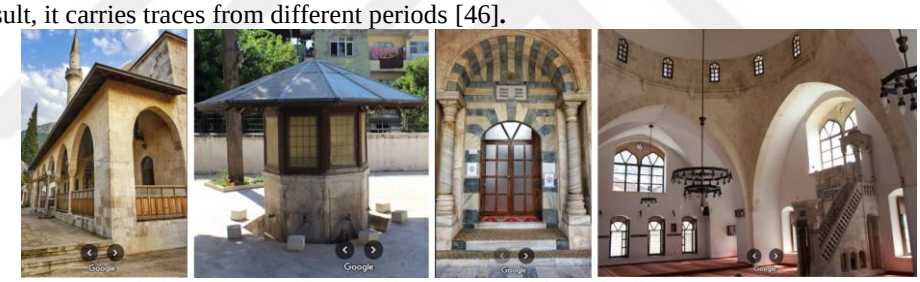


Site plan of Şeyh Ali Mosque (left), general view of Şeyh Ali Mosque (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B120
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The exact construction date of the building is unknown, but it is estimated to have been built in the 15th century. The mosque, madrasa, and fountain are located within an irregularly shaped courtyard. There are crown gates on the eastern and western sides of the courtyard. The minaret, located on the eastern façade, is constructed upon the mosque's walls. The stone minaret has a square base and a cylindrical body. It originally featured two balconies, but following a restoration in 2001, a later-added second balcony was removed**.** The mosque is built with cut stone and covered by a dome. The interior is illuminated by arched windows. To the north, there is a late comers' porch (son cemaat). The building displays black-and-white stonework. The mosque features a decorated mihrab and a simple marble pulpit. Despite its relatively simple decorative style, the mosque stands out among other buildings in Antakya. The structure has undergone numerous repairs over the years, and as a result, it carries traces from different periods [46]**.**



Late comers' porch, fountain, gate of harim and harim section of the Şeyh Ali Mosque. Source: [Google Maps].

Post-Earthquake Situation of the Building:

The mosque's dome has collapsed. While the base of the minaret remains intact, its body, balcony, and cone have been destroyed. There are deep cracks in the façade, and the stones have suffered significant deterioration. Some of the windows on the façades (particularly those on the upper floors) are heavily damaged, while others remain intact. Restoration work on the building has been initiated by the Directorate General of Foundations.



Post-earthquake situation of Şeyh Ali Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Şıh Abdurrahman Tomb



Site plan of Şıh Andurrahman Tomb (left), general view of Şıh Andurrahman Tomb (right). Source: [9].

Damage Level:	**2**
Inventory Number:	B118
Type of Building:	Tomb

Pre-Earthquake Situation of the Building:

The structure, located within a courtyard, features a classical dome. The sarcophagus (sanduka) of Şıh Abdurrahman is located here. The building is constructed from stone, and its wall surfaces are plastered [9].

Post-Earthquake Situation of the Building:

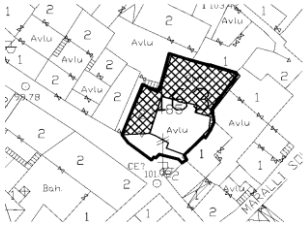
The structure has sustained moderate damage and has not collapsed. Cracks have appeared on its facade, and the plaster has fallen off. Although there is some damage to the green coating of the dome, the dome itself remains intact.



Post-earthquake situation of Şıh Andurrahman Tomb. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Deveci Bekiroğlu Mosque





Site plan of Deveci Bekiroğlu Mosque (left), general view Deveci Bekiroğlu Mosque (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B113
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The mosque within the courtyard is constructed from cut stone and covered with a wooden roof. It features a stone minaret with a cylindrical body and a balcony. On the façade facing the street, there is a public fountain [9].

Post-Earthquake Situation of the Building:

The building has sustained significant damage. Although the minaret is still standing, partial fractures have been observed. Also, the mosque's walls have experienced partial collapse.








Post-earthquake situation of Deveci Bekiroğlu Mosque**.** Source: Photos were taken by the author.

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Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Kürtfakih Mosque



Site plan of Kürtfakih Mosque (left), general view of Kürtfakih Mosque (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B122
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The Kürt Fakih Mosque, estimated to have been originally constructed in the 16th century, is a small neighborhood mosque with a courtyard, located at the corner where two streets intersect. A fountain was later added to the western wall of the courtyard. The base and body of the minaret are made of cut stone, while the balcony is constructed from wood. The mosque's crown gate is designed in the form of an iwan with a pointed arch, and its decorative elements are most concentrated on the crown gate. The Kürt Fakih Mosque stands out for its monumental crown gate, which exceeds the height of the mosque's main walls, adding a distinctive architectural character to the structure [46].



Minaret, courtyard and harim section of the Kürtfakih Mosque. Source: [149].

Post-Earthquake Situation of the Building:

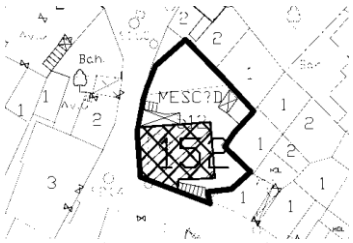
The structure is largely intact and has retained its overall integrity, though some partial damage is present. The minaret, located at the northwest corner, has collapsed. The interior of the mosque has sustained minor damage, with superficial cracks observed. Restoration work is currently being carried out by the Directorate General of Foundations



Post-earthquake situation of Kürtfakih Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Uçtum Masjid





Site plan of Uçtum Masjid (left), general view of Uçtum Masjid (right). Source: [9].

Damage Level:	**0**
Inventory Number:	B124
Type of Building:	Masjid

Pre-Earthquake Situation of the Building:

Located at the corner of two intersecting streets, this rectangular-planned mosque was built in the 19th century. It is one of the small neighborhood mosques with a courtyard. Constructed with cut stone, the structure is covered with a wooden roof. The interior is illuminated by arched and small rectangular windows. The slight curvature in the courtyard wall integrates it with the street, completing the facade of the structure. The entrance to the courtyard is also located on this side. The *mihrab*, a simple niche, is situated on the qibla wall to indicate the direction of prayer. Above the main structure's wall is a wooden ezanlık. The building does not contain any notable decorative elements [9, 46].



Courtyard and facade of Uçtum Masjid. Source: [46].

Post-Earthquake Situation of the Building:

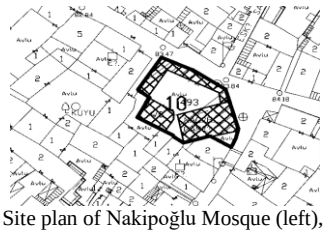
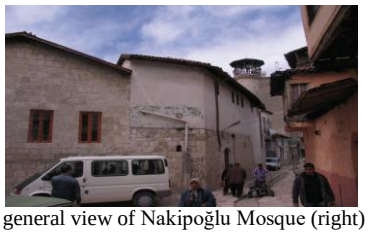
The building itself is largely intact, while the courtyard wall has collapsed. The stones from this wall have fallen inward into the courtyard.



Post-earthquake situation of Uçtum Masjid**.** Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Nakipoğlu Mosque

Site plan of Nakipoğlu Mosque (left), general view of Nakipoğlu Mosque (right) Source: [9].

Damage Level:	**4**
Inventory Number:	B148
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The construction date of the structure, located on Kırk Asırlık Türk Yurdu Street in Zenginler Neighborhood, is not precisely known. However, it is estimated to have been built in the early 16th century or possibly earlier. The complex was constructed on a plot bordered by streets on two sides and consists of a group of structures arranged around a courtyard, including a mosque, a madrasa, and a library. Access to the courtyard is provided through an arched gate. Within the stone-paved courtyard, there are two two-floor madrasa cells, a building that was originally a library but has since been converted into restrooms, and a two-floor mosque. The entrance to the harim is located on the second floor. The mihrab is ornamented, and the structure is covered with a wooden roof supported by large pointed arches. The minaret, made of stone, features a square base, a cylindrical body, and a wooden balcony [46]. The building is illuminated by rectangular and arched windows. The arched windows are primarily located on the courtyard-facing side, while the rectangular windows are mostly found on the street-facing façade. The structure underwent restoration in 2017 by the Directorate General of Foundations.





The situation of the Nakipoğlu Mosque after its restoration in 2017. Source: [150].

Post-Earthquake Situation of the Building:

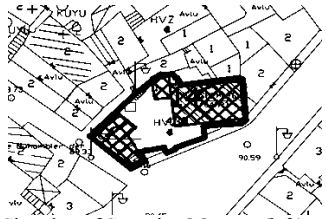
Although the structure has retained its overall integrity following the earthquake, some parts have sustained significant damage. While the interior appears to be intact, partial damage has been identified on the facades. Notably, stones have fallen, and separations in the wall have been observed on the southeastern facade. Additionally, the courtyard wall at the northwest entrance has collapsed.



Post-earthquake situation of Nakipoğlu Mosque. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Sarımiye Mosque




Site plan of Sarımiye Mosque (left), general view of Sarımiye Mosque (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B156
Type of Building:	Mosque

Pre-Earthquake Situation of the Building:

The mosque, located on Kurtuluş Street in Zenginler Neighborhood, was initially constructed in the first half of the 14th century and began to take its current form in the 18th century. All facades of the structure, except the one facing Kurtuluş Street, are surrounded by civilian buildings. Known locally as "Sermaye Mosque," the building features an irregularly shaped courtyard and is constructed from cut stone. The courtyard contains a madrasa and a mosque. The mosque has a monumental crown gate with a minaret, and access to the courtyard is provided through an entrance beneath the minaret. The minaret is constructed of cut stone with a wooden balcony. The harim is covered with a wooden roof and includes a mahfil and a mihrab. Decorative elements are concentrated on the minaret and the crown gate [46, 9]. Sarimiye Mosque is located near both a synagogue and a church, reflecting Antakya's long-standing culture of coexistence among different religions. In many photographs taken from the courtyard of the Catholic Church, the minaret of Sarimiye Mosque and the church's bell tower appear in the same frame, symbolizing this unique aspect of the city [151]. The last restoration of the structure before the earthquake was carried out in 2018 by the Directorate General of Foundations.



View of Sarımiye Mosque from the courtyard. Source: [36].

Post-Earthquake Situation of the Building:

The most significant damage to the structure was sustained by its renowned and prominent minaret. While the base of the minaret remains partially intact, the rest of it has completely collapsed. The extent of the damage to the mosque itself has not been fully determined, but external observations suggest that the structure has retained its overall integrity. Following post-earthquake restoration, the mosque was reopened for worship in May 2024.



Post-earthquake situation of Sarımiye Mosque**.** Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Konut Sinagog



Site plan of Konut Sinagog (left), general view of Konut Sinagog (right). Source: [Hatay Kültür Envanteri, 2011].

Damage Level:	**0**
Inventory Number:	B171
Type of Building:	Sinagog

Pre-Earthquake Situation of the Building:

The building is used by the Jewish community of Antakya and is believed to have been constructed in the 18th century. Ceremonies are held during major holidays and significant days. It houses a 500-year-old handwritten Torah [45]. The building includes a Midrash section, a community management office, two residential quarters, and a two-floor shop facing the street. Located on Kurtuluş Street, it is an iconic structure [152]. The building has a single entrance, and access to the courtyard is via a narrow corridor leading from the residential area. The L-shaped structure is covered by a barrel-vaulted roof [9].



Facade, courtyard and interior of Konut Sinagog. Source: [Google Maps].

Post-Earthquake Situation of the Building:

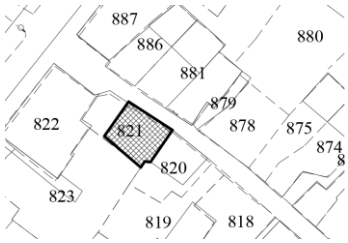
The synagogue was damaged in the February 6 earthquakes but was not destroyed. The building appears largely intact from the outside. Surface cracks have been observed on its façade. As access to the interior has not been possible, the condition of the interior remains undetermined.



Post-earthquake situation of Konut Sinagog. Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Hünkar Masjid





Site plan of Hünkar Masjid Mosque (left). Source: Prepared by author. General view of Hünkar Masjid (right). Source: [Google Maps].

Damage Level:	**1**
Inventory Number:	B183
Type of Building:	Masjid

Pre-Earthquake Situation of the Building:

The building is located at the corner where Kurtuluş Street intersects with Sakarya Street in the Şeyh Ali Neighborhood. It is estimated that the structure was built in the 19th century. The Hünkâr Masjid is a neighborhood mosque with a rectangular plan, covered by a wooden roof, featuring a courtyard in front, and constructed using cut stone. Access to the masjid's courtyard is through a door on the northwestern corner. There is a wooden ezanlık above the courtyard gate. In the harim, pointed arches support the roof. The mihrab has a simple design. Overall, the structure is modest, small, and lacks any notable decorative elements, embodying a simple and unpretentious style [46].



Facade, entry gate, ezanlık and harim section of Hünkâr Masjid. Source: [153].

Post-Earthquake Situation of the Building:

As a result of the earthquake on February 6, the wall at the entrance to the courtyard collapsed. Although the ezanlık at the entrance was damaged, it has maintained its integrity. The harim of the mosque appears to be intact. Since access to the interior was not possible, the assessment was made from the outside. The restoration of the building was completed by the Directorate General of Foundations in March 2024, and it was reopened for worship. The Hünkâr Mosque is one of the first structures to be restored after the earthquake.



Post-earthquake situation of Hünkâr Masjid**.** Source: Photos were taken by the author.

Table A.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Turkish Catholic Church

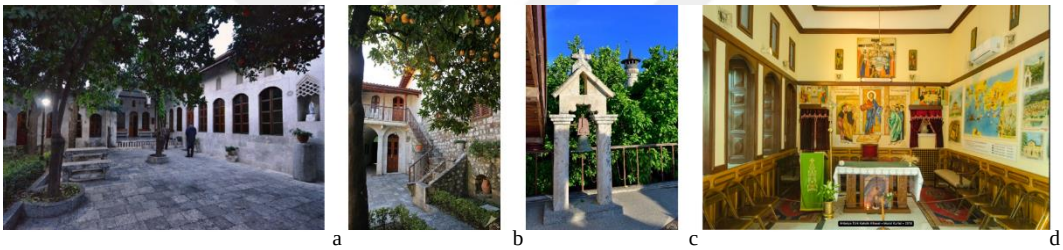


Site plan of Turkish Catholic Church (left), general view of Turkish Catholic Church (right). Source: [9].

Damage Level:	**0**
Inventory Number:	B203
Type of Building:	Church

Pre-Earthquake Situation of the Building:

The Capuchin monks, who arrived in Antakya from France in 1846, obtained permission from the Sultan in 1852 to build a church. In 1977, two historical houses were purchased and restored, and the current building was established. The church, located in the Zenginler neighborhood, has its courtyard accessible via a covered corridor from a dead-end street. The spaces within the courtyard, which features a stone-paved pool, are arranged in an L-shaped layout. The structure is illuminated by arched Windows [9].



a b c d

Courtyard of Turkish Catholic Church (a). Source: [45]. Courtyard of Turkish Catholic Church and bell of Turkish Catholic Church (b, c). Source: [154]. Interior of Turkish Catholic Church (d). Source: [155].

Post-Earthquake Situation of the Building:

Access to the interior of the church has not been possible. During the fieldwork, a police officer stationed near the church stated that the structure was in good condition. However, surface cracks were observed in some sections of the walls at the entrance.



Post-earthquake situation of Turkish Catholic Church. Source: Photos were taken by the author.

Appendix B – 2nd Group Buildings Identified in the Field Study

Table B. 1 Buildings Identified in the Field Study (Prepared by author).

Atatürk Square and Monument





Site plan of Atatürk Square and Monument (left). Source: [9]. General view of Atatürk Square and Monument (right). Source: [156]

Damage Level:	**0**
Inventory Number:	B2
Type of Building:	Monument

Pre-Earthquake Situation of the Building:

The Atatürk Monument and Square, located in the area known as New Antakya along the banks of the Orontes River, is situated at the heart of the city's transportation circulation, forming a circular island. This square is also called Cumhuriyet Square (Republic Square) in the present. The monument is surrounded by landscaping featuring various plants and includes an equestrian statue of Atatürk, a flagpole, and a paved ceremonial area in front of the statue. The bronze statue of Atatürk, cast in 1963, stands on a red marble pedestal. The total height of the monument is 375 cm, and its width is 372 cm. It was inaugurated on July 23, 1965, during the commemoration of Hatay's liberation day. On the front façade of the marble pedestal, within a framed panel, is an inscription that reads: "Kırk Asırlık Türk Yurdu Düşman Elinde Esir Kalamaz" (The Forty-Century Old Turkish Homeland Cannot Be Held Captive in Enemy Hands)—Mustafa Kemal, Adana, 1923 [9].




General view of Atatürk Square and Monument (left). Source: [157]. Details of Atatürk Monument (right). Source: [9].

Post-Earthquake Situation of the Building:

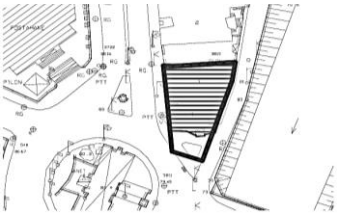
Although many buildings surrounding Atatürk Square sustained significant damage during the earthquake, the square and the monument remained intact.



Post-earthquake situation of Atatürk Square and Monument. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Parliemant House (Former Hatay)




Site plan of Parliemant House (Former Hatay) (left), general view of Parliemant House (Former Hatay) (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B2
Type of Building:	Parliemant House

Pre-Earthquake Situation of the Building:

Located between the Asi River and Atatürk Avenue, this building was constructed in 1936 by Lebanese Jewish architect Leon Benjuda. Initially named Empire Cinema, it was Antakya's first cinema and an integral part of the city's social life at the time. On September 2, 1938, the Hatay State was founded in this building, which served as its parliament until Hatay's annexation to Türkiye. Later, it became known as Gündüz Cinema and the Parliament Building. The building is two stories tall with a flat, reinforced concrete roof. Its plan is rectangular and circular. Constructed from stone, it uses Salkın Stone as cladding material. The structure is notable for its circular front façade, featuring columns and a balcony, which distinguish it from other buildings in the area. It retained its original character until the February 6 earthquake [158]**.** In recent years, it has functioned as a café and cultural center.





Facade of Parliemant House (Former Hatay). Source: [159].

Post-Earthquake Situation of the Building:

The building was completely destroyed after the earthquake. Reconstruction and restoration efforts have been initiated, with the aim of reopening the building in 2025.

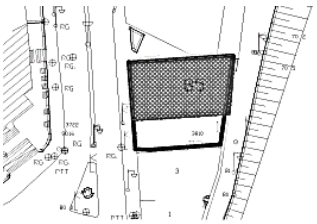




Post-earthquake situation of Parliemant House (Former Hatay). Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Mado House




Site plan of Mado House (left), general view of Mado House (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B3
Type of Building:	Public

Pre-Earthquake Situation of the Building:

The Mado House is also known as Antakya Konağı or Adalı Konağı. In 1939, the decision for Hatay to join the Republic of Türkiye was made in this mansion. The architect of the mansion is the Frenchman Jacques Boucherie. This historic stone mansion is a replica of a mansion built in Paris for the Tortue family [160]. The two-floor building features a tiled roof and has a two-columned entrance. At the front corners, there are two hexagonal-plan towers with lead domes. The house is accessed by four steps from the front. The upper floor is reached via an internal stone staircase. On the side of the building adjacent to the cinema, there is a courtyard with a swimming pool in the center [9].



Facades of Mado House. Source: Google Maps.

Post-Earthquake Situation of the Building:

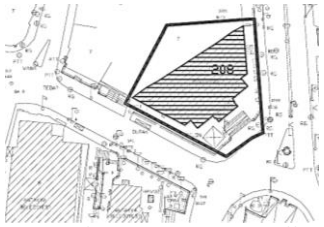
The building was completely destroyed in the February 6, 2023 earthquake.



Post-earthquake situation of Mado House. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

PTT Building (Post Office)





Site plan of PTT Building (Post Office) (left), general view of PTT Building (Post Office) (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B4
Type of Building:	Public

Pre-Earthquake Situation of the Building:

The PTT Building is one of the significant historical structures located in Cumhuriyet Square. The Post Office Building has a simple appearance and features an architectural style that reflects the characteristics of the Early Republican Period. Since its construction, the building has continuously served as a PTT building. It is estimated to have been built in the 1930s. The structure has a polygonal plan and consists of a basement and two floors. Its construction material is rubble stone masonry. The main entrance of the building has a monumental character. It features a large, three-doored entrance supported by columns. The structure is elevated on a platform from the square and is accessed via a broad and tall staircase. Its facades include numerous rectangular windows, and the building is covered with a wooden roof clad in tiles [161, 9].



Facades of PTT Building (Post Office). Source: [161].

Post-Earthquake Situation of the Building:

The building sustained severe damage in the February 6, 2023 earthquake but has not collapsed. It continues to exist as a whole. Deep cracks have been observed on the façades, with partial destruction on the main entrance façade. There are sections of collapsed walls on the side façades.



Post-earthquake situation of PTT Building (Post Office). Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Municipal



Site plan of Municipal (left), general view of Municipal (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B3
Type of Building:	Public

Pre-Earthquake Situation of the Building:

Located in Cumhuriyet Square at the heart of Antakya, this building was constructed as a municipal building during the French occupation of Hatay. It is a rectangular, two-floor structure made of cut stone, built on a platform accessed by a staircase of 20 steps. A wide staircase inside provides access to the upper floor [9]. The structure features a hipped roof covered with tiles, which gives the impression of a flat roof from a distance. Its overall design is simple and modest. Surrounded by a beautiful garden at the front, the building was restored in 2015. Until the February 6 earthquake, it served as the administrative headquarters of the Hatay Metropolitan Municipality [161].



Facades of Municipal. Source: [161].

Post-Earthquake Situation of the Building:

The structure has sustained significant damage but remains intact as a whole. The roof and side façade have been severely affected. Openings have been observed in the side wall, and the cladding stones have fallen off. Cracks and collapses have appeared on the main entrance façade and retaining walls.



Post-earthquake situation of Municipal. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

T.C. Ziraat Bank



Site plan of T.C. Ziraat Bank (left), general view of T.C. Ziraat Bank (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B6
Type of Building:	Bank

Pre-Earthquake Situation of the Building:

Located in the center of the new Antakya, in Cumhuriyet Square, the T.C. Ziraat Bank building was constructed after 1940. The front facade of the building is clad with cut stone to blend with the other registered buildings in the vicinity. The other facades are plastered. The building consists of a basement and two upper floors. It has a polygonal plan and is covered with a tiled roof. The layout of the building harmonizes with the parcel on which it is situated, and it is raised approximately one meter above ground level, accessible via a set of four steps. The facades feature numerous rectangular windows. The design of the building is rather simple, with visual dynamism created by the zigzag front facade and the side facades, which are supported by tall columns and feature balconies. The building served as the center branch of the T.C. Ziraat Bank until the earthquake on February 6. [9, 161].



Facades of T.C. Ziraat Bank. Source: [161].

Post-Earthquake Situation of the Building:

The building was completely destroyed during the February 6, 2023 earthquake.



Post-earthquake situation of T.C. Ziraat Bank. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Antakya Museum

Damage Level:	**1**
Inventory Number:	B7
Type of Building:	Museum




Site plan of Antakya Museum (left). Source: [9]. General view of Antakya Museum (right). Source: [26].

Pre-Earthquake Situation of the Building:

The Antakya Museum is one of the key architectural landmarks that complete the layout of Cumhuriyet Square. The original construction of the building began in 1932 during the French Mandate period, and it was later expanded with additions made between 1969 and 1974, as well as in 2000, to reach its current form. It opened in 1948 as Türkiye's first mosaic museum. The museum building, which features cut-stone exterior walls, follows an "L"-shaped plan. Both traditional masonry and reinforced concrete construction techniques were used in its construction [9, 161]. Archaeological excavations in Hatay began in 1932. Between 1932 and 1939, research conducted by Princeton University led to the discovery of the mosaics that would become the core collection of the museum. The construction of the original museum building was initiated to house the artifacts uncovered during these excavations. However, due to space limitations and the need for better exhibition facilities, a new museum building, the Hatay Archaeology Museum, was constructed. In 2020, this building underwent restoration by the Ministry of Culture and Tourism and was transformed into the Hatay City Museum. The building, which continues its existence as the Hatay City Museum, was dedicated to showcasing the history, trade, production, daily life, and culinary culture of the city until the earthquake on February 6 [162].





Facades of Antakya Museum. Source: [161].

Post-Earthquake Situation of the Building:

Before the earthquake, the building was undergoing restoration and repair. It sustained minor damage during the February 6, 2023 earthquake, with cracks observed on its facades. Restoration and repair work continued after the earthquake. Following the disaster, the Ministry of Culture and Tourism, along with the Hatay Governorship, decided to convert the building into a library. Upon the completion of its restoration, the building was reopened in June 2024 as the Cemil Meriç Provincial Public Library.

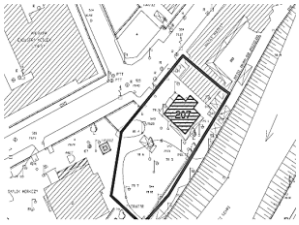




Post-earthquake situation of Antakya Museum. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Governer House




Site plan of Governer House (left), general view of Governer House (right). Source: [9].

Damage Level:	**2**
Inventory Number:	B8
Type of Building:	Publıc

Pre-Earthquake Situation of the Building:

The building, constructed from cut stone, is located between the Asi (Orontes) River and Gündüz Street. The two-floor, rectangular-plan Governor's Mansion has its entrance on the north side and is covered with a tiled roof [9]. It is positioned within a large garden containing monumental trees. The building features a symmetrical facade and is an important example of architectural style reflecting French colonial influences [37].



Facade of Governer House. Source: [37].

Post-Earthquake Situation of the Building:

The building sustained moderate damage during the February 6 earthquakes. The stone cladding on the facades detached, revealing the rubble masonry system underneath.



Post-earthquake situation of Governer House. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Directorat of Health



Site plan of Directorat of Health (left), general view of Directorat of Health (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B9
Type of Building:	Health Service

Pre-Earthquake Situation of the Building:

The structure is a three-story stone building located between Gündüz Street and the Asi River. It is situated within a garden, with its entrance covered by a concrete canopy supported by two square columns. The exterior walls of the building are fully plastered and painted. In addition to the main entrance on the northwest facade, there are also stair-accessed entrances on the southeast and southwest facades [9].



Facade of Directorat of Health. Source: [Google Maps].

Post-Earthquake Situation of the Building:

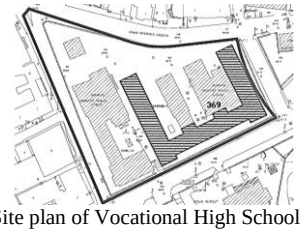
The building was severely damaged in the earthquake, rendering it unusable. While part of the structure remains standing, another part has completely collapsed.



Post-earthquake situation of Directorat of Health. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Vocational High School




Site plan of Vocational High School (left), general view of Vocational High School (right). Source: [9].

Damage Level:	**3**
Inventory Number:	B10
Type of Building:	School

Pre-Earthquake Situation of the Building:

The building is a two-floor, U-shaped structure located within a garden between Gündüz Street and Adnan Menderes Street. It was constructed between 1944 and 1945 as the Antakya Institute of Male Art. Originally used as a high school, the building is clad in cut stone, with a cornice separating the two floors. It is covered with a hipped roof. The building is made of stone. In later years, reinforced concrete auxiliary buildings were added to the site. The facades feature numerous rectangular windows, and the design of the building is rather simple. Since 2008, the building has continued to serve as the Hatay Erol Bilecik Industrial Vocational High School [9, 161].




Facades of Vocational High School. Source: [Google Maps]

Post-Earthquake Situation of the Building:

The building sustained severe damage during the earthquake. While the structure remains standing as a whole, it is no longer functional and cannot be used.





Post-earthquake situation of Vocational High School. Source: Photos were taken by the author.

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Trahom War Dispancary



Site plan of Trahom War Dispancary (left), general view of Trahom War Dispancary (right). Source: [9].

Damage Level:	**2**
Inventory Number:	B144
Type of Building:	Health

Pre-Earthquake Situation of the Building:

The building was constructed in the 20th century and is located at the corner where Sokullu Street and Kurtuluş Street intersect. It is a two-floor structure with a central entrance. The building is clad in cut stone and features a symmetrical facade. In front of the building, there is a garden containing monumental trees. The roof is wooden and covered with traditional Turkish tiles (alaturka). Until the earthquake on February 6, the building was used as the Hatay Chamber of Tradesmen and Craftsmen (Hatay Esnaf ve Sanatkarlar Odası) [37].



Facades of Trahom War Dispancary. Source: [Google Maps]

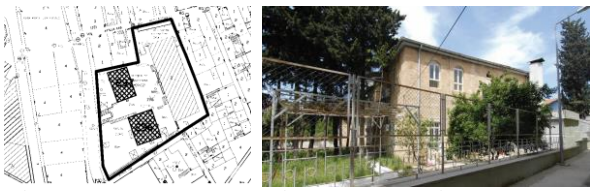
Post-Earthquake Situation of the Building:

The building sustained moderate damage during the earthquake. The roof collapsed, and there were partial collapses at the entrance. While the walls have cracks, the structure has not completely collapsed.



Post-earthquake situation of Trahom War Dispancary. Source: Photos were taken by the author.

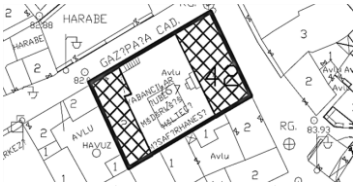
Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

<table>
<tr><td colspan="3">Ali Sayar Primary School</td></tr>
<tr><td rowspan="3">
Site plan of Ali Sayar Primary School (left), general view of Ali Sayar Primary School (right). Source: [9].</td><td>Damage Level:</td><td>0</td></tr>
<tr><td>Inventory Number:</td><td>B237</td></tr>
<tr><td>Type of Building:</td><td>School</td></tr>
<tr><td colspan="3">Pre-Earthquake Situation of the Building:
This structure, located in the courtyard of Ali Saray Primary School, was originally built as an administrative building. It is a single-floor structure with a façade clad in finely cut stone. The windows are arched, and the interior spaces feature high ceilings. The building has a hipped roof covered with tiles. Although it was built later, it is in good harmony with the traditional architecture of Antakya [9].</td></tr>
<tr><td colspan="3">Post-Earthquake Situation of the Building:
The building is mostly intact. Superficial cracks were observed on the facades.

Post-earthquake situation of Ali Sayar Primary School. Source: Photos were taken by the author.</td></tr>
</table>

Table B.1 (continued): Buildings Identified in the Field Study (Prepared by author).

Police Station





Site plan of Police Station (left), general view of Police Station (right). Source: [9].

Damage Level:	**4**
Inventory Number:	B242
Type of Building:	Public

Pre-Earthquake Situation of the Building:

Located on Gazipaşa Street, this structure is situated very close to the Antakya Greek Orthodox Church. The structure was used as a police station for a period. It consists of two separate buildings within a courtyard. The building in the northeast of the courtyard is single-floor, while the one in the southeast is two-floor. The two-story building features overhangs (çıkma), with its ground floor constructed of masonry and its upper floor built using the *bağdadi* technique. The single-story building is made of masonry. Both structures are covered with tiled wooden roofs. The courtyard contains a pool and trees [9].

Post-Earthquake Situation of the Building:

The structure was completely destroyed during the earthquake.



Post-earthquake situation of Police Station. Source: Photos were taken by the author.