PRESENTATION OF A CONCEALED ARCHAEOLOGICAL SITE: THE CASE OF ZEUGMA

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

EZGI GÜNDÜZ ÇETINKAYA

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
CONSERVATION OF CULTURAL HERITAGE IN ARCHITECTURE

SEPTEMBER 2019

Approval of the thesis:

PRESENTATION OF A CONCEALED ARCHAEOLOGICAL SITE: THE CASE OF ZEUGMA

submitted by **EZGI GÜNDÜZ ÇETINKAYA** in partial fulfillment of the requirements for the degree of **Master of Science in Conservation of Cultural Heritage in Architecture Department, Middle East Technical University** by,

Prof. Dr. Halil Kalıpçılar
Dean, Graduate School of **Natural and Applied Sciences** _____

Prof. Dr. Cana Bilsel
Head of Department, **Architecture** _____

Prof. Dr. Neriman Şahin Güçhan
Supervisor, **Architecture, METU** _____

Examining Committee Members:

Assoc. Prof. Dr. Ayşe Güliz Bilgin Altınöz
Department of Architecture, METU _____

Prof. Dr. Neriman Şahin Güçhan
Architecture, METU _____

Prof. Dr. Kutalmış Görkay
Department of Classical Archeology, Ankara University _____

Assoc. Prof. Dr. Lale Özgenel
Department of Architecture, METU _____

Assist. Prof. Dr. Azize Elif Yabacı
Department of Architecture, TED University _____

Date: 03.09.2019

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Surname: Ezgi Gündüz Çetinkaya

Signature:

ABSTRACT

PRESENTATION OF A CONCEALED ARCHAEOLOGICAL SITE: THE CASE OF ZEUGMA

Gündüz Çetinkaya, Ezgi
Master of Science, Conservation of Cultural Heritage in Architecture
Supervisor: Prof. Dr. Neriman Şahin Güçhan

September 2019, 181 pages

This study focuses on the presentation of a concealed archaeological site.

Seeing as the first and most dominant perception for a most living creature. When it comes to the perception of an archaeological site, it has priority overseeing, hearing, sniffing or touching senses. It is naturally difficult to perceive something that cannot be seen, therefore, it is equally difficult to present a concealed archaeological site.

Zeugma, an area where the mentioned difficulty becomes concrete, is an example of an archaeological area that has been concealed. The reasons behind the situation is that the water accumulated in the Birecik dam reservoir covers an important part of the city and the lack of durability of structural stone that the remains could not be revealed and exhibited. In addition to these features, the Zeugma archaeological site was chosen as a sample study area in consideration of its values and potentials.

The study consists of three main parts. The first part covers the investigation of the theoretical background, principles, and objectives of the presentation concept, and the investigation and evaluation of current presentation techniques and tools to eliminate the obstacle of an archaeological site that is concealed, and which is visually inaccessible. In the second part, the history of the Zeugma archaeological site, the excavation and conservation processes and the present situation of the site were

investigated, and the values, problems, and potentials were determined and evaluated as a site to be presented. In the last part of the study, regarding the theoretical background established, the presentation principles aiming at the effective presentation of Zeugma, a concealed archaeological site, were determined. Besides, the proposals, consisting of the scenario routes, the architectural program, the appropriate presentation techniques and tools for a concealed archaeological site has been prepared as a preliminary project.

Keywords: Presentation, Concealed Archaeological Sites, Archaeological Heritage, Zeugma

ÖZ

SAKLI KALMIŞ BİR ARKEOLOJİK ALANIN SUNUMU: ZEUGMA ÖRNEĞİ

Gündüz Çetinkaya, Ezgi
Yüksek Lisans, Kültürel Mirası Koruma
Tez Danışmanı: Prof. Dr. Neriman Şahin Güçhan

Eylül 2019, 181 sayfa

Çalışma, saklı kalmış bir arkeolojik alanın sunumu konusuna odaklanmaktadır.

Görme, bu duyuya sahip herhangi bir canlı için ilk ve en baskın algı duyusudur. Bir arkeolojik alanın algılanması söz konusu olduğundaysa görebilme, işitme, koklama ya da dokunma duyularından önceliklidir. Yani, görülemeyen bir şeyin algılanması doğal olarak güç olduğundan, saklı kalan bir arkeolojik alan olduğunda da bu alanın sunulması aynı şekilde güçtür.

Bahsedilen güçlüğün somutlaştığı bir alan olan Zeugma hem Birecik Barajı'nın inşası sonucu baraj göletinde biriken suların kentin önemli bir kısmını örtmesi, yerleşimin inşasında kullanılan taşların dayanıksız ve açık hava koşullarına uygun olmayışı dolayısıyla toprak veya koruyucu bir örtüyle gizlenmek zorunda kalan, saklı kalmış bir arkeolojik alan örneğidir. Bu niteliği yanı sıra barındırdığı değer ve potansiyeller doğrultusunda Zeugma arkeolojik alanı örnek çalışma alanı olarak seçilmiştir.

Çalışma üç ana bölümden oluşmaktadır. İlk bölüm, saklı yani görsel olarak ulaşılamaz durumdaki bir arkeolojik alanın sahip olduğu engelin elimine edilerek konunun uzmanı olmayan kişilerce de algılanabilir ve yorumlanabilir olması amacı doğrultusunda, sunum kavramının kuramsal altyapılarının, ilke ve amaçlarının araştırılması, güncel sunum teknikleri ve araçlarının incelenip, değerlendirilmesini

kapsamaktadır. İkinci bölümdeyse çalışma alanı olarak seçilen Zeugma arkeolojik alanının tarihi, geçirdiği kazı ve koruma süreçleriyle mevcut durumu araştırılarak değerleri, sorunları ve potansiyelleri belirlenip, sunulacak bir alan olarak değerlendirilmesi yapılmıştır. Çalışmanın son bölümündeyse oluşturulan teorik alt yapıya referansla, saklı kalmış bir arkeolojik alan olan Zeugma'nın etkili biçimde sunumunu hedefleyen, sunum ve yorumlama ilkeleri, senaryo rotaları, mimari program, uygun sunum teknik ve araçlarının belirlenmesi ile ön proje oluşturulmasını kapsayan öneriler aktarılmıştır.

Anahtar Kelimeler: Sunum, Saklı Kalmış Arkeolojik Alanlar, Arkeolojik Miras Zeugma

To all people who do not hesitate to make sacrifices for a better world…

ACKNOWLEDGEMENTS

I would like to express my biggest gratitude to my supervisor Prof. Dr. Neriman ŞAHİN GÜÇHAN, because of not only she provided me support, guidance, and patience but also, she always behave warmly and never gave up on me.

Besides, I would like to thank Prof. Dr. Kutalmış GÖRKAY and Zeugma excavation team for their support and guidance.

I owe thanks to the members of my examining committee Prof. Dr. Neriman Şahin Güçhan, Prof. Dr. Kutalmış Görkay, Assoc. Prof. Dr. Güliz Bilgin Altınöz, Assoc. Prof. Dr. Lale Özgenel and Assist. Prof. Azize Elif Yabacı for their valuable comments and advices.

I also would like to thank my beloved husband and fellow traveler Arda ÇETİNKAYA for his greatest effort, patience, devotion, and GIS support that I count not achieve to finalize this study without him.

Furthermore, I would like to thank Aysel YAYLA, one of my best friends and my dearie mother, for the emotional support she provided during this study as well as in all stages of my life.

Moreover, my special thanks goes to Kadriye ÇETİNKAYA for her support and to Neslihan Burçin TAMER for her valuable contribution.

Finally, Füsun TAMER TÜRER and Can TÜRER, not only my business partners but also my best friends deserve the greatest thanks for their encouragement and endless support in every part of my study.

TABLE OF CONTENTS

ABSTRACT v

ÖZ vii

ACKNOWLEDGEMENTS x

TABLE OF CONTENTS xi

LIST OF TABLES xv

LIST OF FIGURES xvi

CHAPTERS

1. INTRODUCTION 1

1.1. Definition of the Problem and Reasons for Selecting the Site 1

1.2. Aim & Scope 5

1.3. Methodology 7

1.4. Structure of the Thesis 13

2. BACKGROUND OF THE CONCEPT: PRESENTATION OF ARCHAEOLOGICAL SITES 15

2.1. Definition of Presentation 15

2.2. Goals and Principles of Presentation of Archaeological Sites 17

2.3. Presentation Techniques and Tools 21

2.3.1. Conventional / Traditional Techniques and Tools 22

2.3.2. Contemporary / Emerging Techniques and Tools 27

3. THE CASE: ZEUGMA 47

3.1. Location, Boundaries and Natural Characteristics of Zeugma 47

3.1.1. Location 47

3.1.2. Boundaries 49
3.1.3. Natural Characteristics 53
3.2. History of Zeugma 55
3.2.1. Historical Background of Zeugma 55
3.2.2. Excavation, Research, and Conservation History of Zeugma 67
3.2.2.1. Southeastern Anatolia Project (GAP) as Context and Background to the Excavation and Conservation Activities in Zeugma: Birecik Dam 67
3.2.2.2. Excavation Experiences and Research History of Zeugma 75
3.2.2.3. Conservation Activities in Zeugma 82
3.3. Present Situation of Zeugma 86
3.3.1. Natural and Geographical Aspects 86
3.3.1.1. Topography 87
3.3.1.2. Slope 87
3.3.1.3. Aspect – Land Orientation 88
3.3.1.4. Landcover 88
3.3.1.5. Surface Hydrography 88
3.3.1.6. Geology 89
3.3.2. Access to the Site 89
3.3.2.1. Land Road 89
3.3.2.2. River Road 89
3.3.3. Physical Environment 89
3.3.3.1. Archaeological Remains 89
3.3.3.2. Conservation and Presentation Elements 90
3.3.3.3. Built Environment 91

3.3.4. In-situ and Ex-situ Presentation of Zeugma 107
4. EVALUATION OF THE SITE IN TERMS OF VALUES, PROBLEMS, AND POTANTIALS AS A SITE TO BE PRESENTED.....113
4.1. Values.....113
4.1.1. Historical Values 114
4.1.2. Antiquity (Age) Value 115
4.1.3. Authenticity Value.....115
4.1.4. Documentary Values 115
4.1.5. Archaeological / Architectural Values.....116
4.1.6. Social Values 117
4.1.7. Aesthetic/Artistic Values 117
4.1.8. Landscape Value.....119
4.2. Problems of Zeugma 122
4.2.1. Problems Related with the Site and Archaeological Remains.....122
4.2.2. Presentational Problems.....127
4.2.3. Infrastructure and Facility Problems 129
4.3. Potentials of Zeugma.....132
4.3.1. Archaeological and Historical Potentials.....132
4.3.2. Location Related Potentials 132
4.3.3. Geographical Potentials 133
4.3.4. Tourism Potentials 134
4.3.5. Presentational Potentials 134
5. THE PRESENTATION PROJECT 139
5.1. Outline of the Presentation Project.....139

5.2. Principles for the Presentation 140
5.3. Proposed Presentation Techniques and Tools for the Concealed City – Zeugma 143
5.3.1. Conventional Techniques, Elements and Tools 144
5.3.2. Augmented and Virtual Reality Tools 149
5.3.3. Rope – use Tracing of Concealed Remains 150
5.4. Layers of Scenarios and Proposed Architectural Program 153
5.4.1. Layers of Scenarios 153
5.4.2. Architectural Program – Facilities in Permanent Building 156
5.5. Decisions: The Presentation Project of Zeugma 156
6. CONCLUSION 171
REFERENCES 175

LIST OF TABLES

TABLES

Table 2. 1 Advantages and Disadvantages of Information Sign-boards & Graphic Panels 22
Table 2. 2 Advantages and Disadvantages of Visitor Centers 24
Table 2. 3 Advantages and Disadvantages of Trained Guides.....24
Table 2. 4 Advantages and Disadvantages of Audio – Visual Aids 25
Table 2. 5 Advantages and Disadvantages of Printed Materials.....26
Table 2. 6 Advantages and Disadvantages of Animation with Wax Figures or Sculptures.....26
Table 2. 7 Advantages and Disadvantages of Information Screens and Kiosks.....28
Table 2. 8 Advantages and Disadvantages of Augmented Sign-boards 34
Table 2. 9 Advantages and Disadvantages of Augmented Reality Mobile Applications 37
Table 2. 10 Advantages and Disadvantages of Interactive Computer Exhibits.....39
Table 2. 11 Advantages and Disadvantages of Virtual Reality Tours 41
Table 2. 12 Advantages and Disadvantages of Pre-created 360°Virtual Reality.....42
Table 2. 13 Advantages and Disadvantages of Animatronics and 3D Projected Holograms.....43
Table 3. 1 Historical Timeline of Zeugma 66

LIST OF FIGURES

FIGURES

Figure 1. 1 Site Survey Sheet (Gündüz Çetinkaya, 2011) 10
Figure 1. 2 Analysis Process on ArcGIS Environment (Gündüz Çetinkaya, 2018) .. 10
Figure 1. 3 Questionnaire for Zeugma Archaeological Site Visitors (Gündüz Çetinkaya, 2011) 11
Figure 1. 4 Questionnaire for Zeugma Mosaic Museum Visitors (Gündüz Çetinkaya, 2011) 11
Figure 1. 5 Chart of the Methodology (Gündüz Çetinkaya, 2018) 12
Figure 2. 1 Chart of Principles and Goals of Presentation and Interpretation According to Ename Charter (Gündüz Çetinkaya, 2018) 20
Figure 2. 2 Presentation Techniques and Tools (Gündüz Çetinkaya, 2018) 21
Figure 2. 3 Wax Figurine of a Potter, Tongguan Kiln Archaeological Park, Wangcheng District, Changsha City. Source: http://en.changsha.gov.cn/travel/Attractions/, last accessed in 12 March 2019 27
Figure 2. 4 Information Screen - Ename Archaeological Museum. Source: http://visualdimension.be/heritage/exhibitions/pages/pam_ename.html, last accessed in 12 March 2019 29
Figure 2. 5 Outdoor Kiosk, Abbey Site of Ename. Source: http://visualdimension.be/heritage/exhibitions/pages/pam_ename.html, last accessed in 12 March 2019 30
Figure 2. 6 Reality-Virtuality Continuums, (Gutiérrez A., Vexo, & Thalmann, 2008) 31
Figure 2. 7 Reanimating the Invisible Components of the Temple of Jupiter-Italy and Milecastle-England 32

Figure 2. 8 Methodology diagram of handling VR, AR and MR technologies on cultural heritage sites. Source: http://visualdimension.be/heritage/methodology.html, last accessed in 14 March 2019 33
Figure 2. 9 Reanimating the Heathen's Gate with Augmented Reality Signboard, Open Air Museum Petronell. Source: https://weburbanist.com/2018/04/03/reconstructing-ruins-gifs-reanimate-7-ancient-architectural-wonders/, last accessed in 18 January 2019.....34
Figure 2. 10 GeoTravel Application as a Tour Guide. Source: https://www.youtube.com/watch?v=DpmAyen4sv0, last accessed in 12 March 2019 35
Figure 2. 11 Mobile AR Application Prepared for the Archaeological Site of Segesta. Source: http://www.noreal.it/site2011/, last accessed in 12 March 2019 36
Figure 2. 12 Reconstructed part of Erbil Citadel on an AR mobile Application (Mohammad-Emin, 2010).....36
Figure 2. 13 A real and augmented view of St. Alban Quarter's Tour (lifeClipperProject, 2005) 37
Figure 2. 14 Interactive Computer Exhibit of Kaman - Kalehöyük Archaeological Museum. Source: http://www.kalehoyukarkeolojimuzesi.gov.tr/kamanWeb/kaman_web.html, last accessed in 17 April 2019 38
Figure 2. 15 Interactive Computer Exhibit of British Museum - The Museum of the World. Source: https://britishmuseum.withgoogle.com/, last accessed in 10 April 2019.....38
Figure 2. 16 Interactive Computer Exhibit of MET Museum – "metkids". Source: https://www.metmuseum.org/art/online-features/metkids/explore/255367/Bronze-head-of-a-griffin, last accessed in 12 March 2019.....39
Figure 2. 17 Web Virtual Reality Tours of Acropolis, Athens. Source: http://www.acropolisvirtualtour.gr/, last accessed in 10 March 2019, https://www.youtube.com/watch?v=y9zWmURQcyc, last accessed in 10 March 2019.....40

Figure 2. 18 “Bath ArchTour”, Caesarea Israel. Source: http://www.arch-tour.com/index-he.html, last accessed in 10 March 2019 42
Figure 2. 19 Presentation of a small-scale model by Hologram from Neues Museum in Berlin (Gündüz Çetinkaya, 2019)..... 43
Figure 2. 20 Evaluation of Listed Presentation Techniques and Tools (Gündüz Çetinkaya, 2019)..... 45
Figure 3. 1 Location of Zeugma in Turkey (Gündüz Çetinkaya, 2011) 48
Figure 3. 2 Location of Zeugma in Gaziantep (Gündüz Çetinkaya, 2011) 48
Figure 3. 3 Ancient roads and bridges in the vicinity of Zeugma (Aylward, 2013).. 49
Figure 3. 4 Relation between the cultivation areas and location of the settlements (Gündüz Çetinkaya, 2011)..... 51
Figure 3. 5 Wall Remains Bahçedere (Görkay, 2012, p.278)..... 51
Figure 3. 6 Zeugma City Plan (drawn by D. Z. Özcan & D. Taşkın – Zeugma Archaeological Project, 2011) 52
Figure 3. 7 Limits of the Cities Zeugma and Apamea (Gündüz Çetinkaya, 2011) ... 52
Figure 3. 8 Limits of the Apamea according to studies of Abadie-Reynal in 1996 (Excavation Reports, 1996) 53
Figure 3. 9 Zeugma and Apamea with Euphrates (Fırat) River and Bahçedere (Gündüz Çetinkaya, 2011)..... 54
Figure 3. 10 Topography of Zeugma I (Başgelen, 2000) 55
Figure 3. 11 Zeugma as a city of Kingdom of Commagene (Gündüz Çetinkaya, 2011) 58
Figure 3. 12 Zeugma’s Position According to Wagner (Wagner, 1976)..... 60
Figure 3. 13 Zeugma on the Tabula Peutingeriana, the Roman Map of Roads..... 61
Figure 3. 14 The Hellenistic Zeugma (Aylward, 2013, p.18)..... 62
Figure 3. 15 The Roman Zeugma (Aylward, 2013, p.19) 63
Figure 3. 16 The late-Roman Zeugma (Aylward, 2013, p.20) 63
Figure 3. 17 The partial plan of the Dionysos House (Drawn by E. Öztaner – Görkay, 2012, p.293)..... 65

Figure 3. 18 SAP (GAP) Master Plan 1989-1990 Location Map of Hydrological Stations....69
Figure 3. 19 SAP (GAP) Master Plan 1989-1990 Euphrates (Fırat) River Flow Chart 70
Figure 3. 20 Euphrates (Fırat) River Before and After Construction of Birecik Dam (Gündüz Çetinkaya, 2011)....71
Figure 3. 21 Rescue Excavations Scheme (Ergeç, 2001)....72
Figure 3. 22 "Gypsy Girl" Mosaic (Gündüz Çetinkaya, 2012)....78
Figure 3. 23 Local Newspaper Headings about Zeugma (Milliyet, Hürriyet and Cumhuriyet Archives- Gündüz Çetinkaya, 2019)....79
Figure 3. 24 International Newspaper Headings about Zeugma (Gündüz Çetinkaya, 2019) 80
Figure 3. 25 Bronze Mars Statue (Gündüz Çetinkaya, 2012)....81
Figure 3. 26 Diagram showing the water level in the Birecik Dam Reservoir during the rescue excavations of 2000 (drawn by Jamon Van Den Hoek, Aylward, 2013, p.6) 81
Figure 3. 27 Movable Artifacts Inventory and Archive Application Source: http://www.zeugmaarchproject.com/, last accessed in 20 December 2018....83
Figure 3. 28 Construction of Protection Roof. Source: http://www.zeugmaarchproject.com/index.php?option=com_content&view, last accessed in 20 December 2018 84
Figure 3. 29 Details from Protection Shelter (Gündüz Çetinkaya, 2012)....85
Figure 3. 30 Interior of the Protection Shelter (Gündüz Çetinkaya, 2012)....85
Figure 3. 31 Protection Wall (Gündüz Çetinkaya, 2012)....86
Figure 3. 32 Tarpaulin cover laid to protect the remains of theatre (Gündüz Çetinkaya, 2012) 90
Figure 3. 33 Panoramas from Zeugma (Gündüz Çetinkaya, 2015) 93
Figure 3. 34 Topography of the site (Gündüz Çetinkaya, 2015) 94
Figure 3. 35 Slope (Gündüz Çetinkaya, 2015)....95
Figure 3. 36 Aspect - Land Orientation (Gündüz Çetinkaya, 2015)....96

Figure 3. 37 Landcover (Gündüz Çetinkaya, 2015) 97
Figure 3. 38 Surface Hydrography (Gündüz Çetinkaya, 2015) 98
Figure 3. 39 Geology (Gündüz Çetinkaya, 2015) 99
Figure 3. 40 Access to The Site 100
Figure 3. 41 Visible and Concealed Archaeological Remains (Gündüz Çetinkaya, 2015) 101
Figure 3. 42 Archaeological remains (Gündüz Çetinkaya, 2015) 102
Figure 3. 43 Structural condition of the Archaeological remains (Gündüz Çetinkaya, 2015) 103
Figure 3. 44 Archaeological Investigation Status (Gündüz Çetinkaya, 2015) 104
Figure 3. 45 Presentation Elements (Gündüz Çetinkaya, 2015) 105
Figure 3. 46 Built Environment (Gündüz Çetinkaya, 2015) 106
Figure 3. 47 Remains Presented Under the Main Protection Shelter - House of Danae and Dionysos (Gündüz Çetinkaya, 2012) 107
Figure 3. 48 Remains Presented Under the Protection Shelter - House of Moses (Gündüz Çetinkaya, 2012) 108
Figure 3. 49 Zeugma Mosaic Museum (Gündüz Çetinkaya, 2012) 109
Figure 3. 50 Zeugma Mosaic Museum Floor and Exhibition Plan. Source: http://www.zeugma.org.tr/mkp.aspx, last accessed in 20 December 2018 109
Figure 3. 51 Kiosk at Zeugma Mosaic Museum (Gündüz Çetinkaya, 2011) 110
Figure 3. 52 Visual Light Plays for Children at Zeugma Mosaic Museum (Gündüz Çetinkaya, 2012) 110
Figure 3. 53 Information Signboards at Zeugma Mosaic Museum (Gündüz Çetinkaya, 2011) 111
Figure 3. 54 Screenshot from 3D tour. Source: http://www.zeugma.org.tr/sanaltur.aspx, last accessed in 24 December 2018 112
Figure 4. 1 Mosaic examples from archaeological site of Zeugma 118
Figure 4. 2 Sculpture and stele examples from archaeological site of Zeugma 119
Figure 4. 3 The Euphrates (Fırat) River from the shore of Zeugma (Gündüz Çetinkaya, 2012) 120

Figure 4. 4 Pistachio trees in the archaeological site of Zeugma (Gündüz Çetinkaya, 2011) 121
Figure 4. 5 Birecik Dam (Gündüz Çetinkaya, 2015) 121
Figure 4. 6 Values (Gündüz Çetinkaya, 2015).....123
Figure 4. 7 Structural Condition of Remains under Protection Roof (Gündüz Çetinkaya, 2012) 125
Figure 4. 8 Poor Quality of Original Stones & Structural Condition of Remains from Belkıs Hill (Gündüz, 2012).....126
Figure 4. 9 Locations of the Traces (Gündüz Çetinkaya, 2015) 126
Figure 4. 10 Locations of Zeugma & Tour Boat Pier (Gündüz Çetinkaya, 2019)...128
Figure 4. 11 Protection Shelter from Zeugma (Gündüz Çetinkaya, 2012) 129
Figure 4. 12 Inactive Café Building (Gündüz Çetinkaya, 2012) 130
Figure 4. 13 Toilet Container at Zeugma Archaeological Site (Gündüz Çetinkaya, 2012) 130
Figure 4. 14 Container Unit at Zeugma Archaeological Site (Gündüz Çetinkaya, 2012) 131
Figure 4. 15 Visually Damaging Electric Pole & Warning Sign Examples (Gündüz Çetinkaya, 2012) 131
Figure 4. 16 Problems (Gündüz Çetinkaya, 2015).....137
Figure 4. 17 Potentials (Gündüz Çetinkaya, 2015) 138
Figure 5. 1 Outline Scheme of the Presentation Project (Gündüz Çetinkaya, 2018) 140
Figure 5. 2 Detail Drawing of Reached Site Sign-boards (Gündüz Çetinkaya, 2018) 145
Figure 5. 3 Detail Drawing of Rope Trace Defining Sign-boards (Gündüz Çetinkaya, 2018) 146
Figure 5. 4 Detail Drawing of Direction Sign-boards (Gündüz Çetinkaya, 2018) ..147
Figure 5. 5 Detail Drawing of Information Sign-boards (Gündüz Çetinkaya, 2018) 148

Figure 5. 6 Detail Drawing of Augmented Reality Sign-boards (Gündüz Çetinkaya, 2018) 151
Figure 5. 7 Detail Drawing of Rope Pilling Equipment (Gündüz Çetinkaya, 2018) 152
Figure 5. 8 Table of Scenario Criteria Applied to Archaeological Remains (Gündüz Çetinkaya, 2018) 155
Figure 5. 9 Visitors' Circulation Scheme (Gündüz Çetinkaya, 2018) 157
Figure 5. 10 Scenario I - Site Plan (Gündüz Çetinkaya, 2018) 159
Figure 5. 11 Scenario II - Site Plan (Gündüz Çetinkaya, 2018) 160
Figure 5. 12 Scenario III - Site Plan (Gündüz Çetinkaya, 2018) 161
Figure 5. 13 Visual Reflections of Tour Routes (Gündüz Çetinkaya, 2018) 162
Figure 5. 14 Function Flow Charts of Permanent Structures (Gündüz Çetinkaya, 2018) 164
Figure 5. 15 Detail Drawing of Walkways (Gündüz Çetinkaya, 2018) 165
Figure 5. 16 Detail Drawing of Bench (Gündüz Çetinkaya, 2018) 166
Figure 5. 17 Architectural Drawings of Building I (Gündüz Çetinkaya, 2018) 167
Figure 5. 18 Architectural Drawing of Building II (Gündüz Çetinkaya, 2018) 168
Figure 5. 19 Newly Built Visitor Center, Source: http://gazianteproloveveanitlar.gov.tr/TR-183410/gaziantep-zeugma-orenyeri-cevre-duzenlemesi-isi.html, last accessed in 10 May 2019 169
Figure 5. 20 Construction Technique of Newly Built Visitor Center, Source: http://gazianteproloveveanitlar.gov.tr/TR-183410/gaziantep-zeugma-orenyeri-cevre-duzenlemesi-isi.html, last accessed in 10 May 2019 169

CHAPTER 1

INTRODUCTION

1.1. Definition of the Problem and Reasons for Selecting the Site

Seeing is the first and most dominant sense of perception for a living creature who is not visually challenged. Even if something unseen is told to a person, because of the use of language together will involve subjective interpretations, the listener will just be able to see the narrator's sentences reflections in his own world.

> *"Seeing come before words. The child looks and recognizes before it can speak. But there is also another sense in which seeing comes before words. It is seeing which establishes our place in the surrounding world; we explain that world with words, but words can never undo the fact that we are surrounded by it. The relation between what we see and what we know is never settled."* (Berger, 1973, p.7)

> *"No word can tell what we see."* (Berger, 1973, p.8)

Namely, something invisible is inherently difficult to perceive. In case there is an invisible (concealed) cultural heritage[1], this non-perceivable situation makes it a constraint to be presented to or interpreted by people.

The most basic way for cultural heritage to be understood and interpreted by people is the creation of a presentation program prepared by an interdisciplinary team trained in this field. Although the visibility of the cultural heritage, the way it is seen,

[1] "The cultural heritage may be defined as the entire corpus of material signs - either artistic or symbolic - handed on by the past to each culture and, therefore, to the whole of humankind. As a constituent part of the affirmation and enrichment of cultural identities, as a legacy belonging to all humankind, the cultural heritage gives each particular place its recognizable features and is the storehouse of human experience. The preservation and the presentation of the cultural heritage are therefore a corner-stone of any cultural policy" (UNESCO, 1989, P.57).

or the tools will be determined by experts, it is first necessary to make the cultural heritage visible at a certain scale.

The most important issue that the study dealt with as a problem is that it cannot be perceived and interpreted sufficiently because of not seeing a concealed (cultural) heritage place. This basic problem leads to the inability of a person visiting a cultural area to establish the necessary link with the field and not to meet their expectations.

In order to protect cultural heritage, it is insufficient to have the values that are known only by professionals. This perspective will destroy the potential by turning the heritage places into a scientific - laboratory object. The preservation of cultural heritage is directly related to the existence of economic sources and academic or field knowledge to meet the requirements of the site. With the help of various tools and techniques, it is known that the significance of the cultural heritage site to be explained to the visitors has very positive results in terms of the economic sustainability of the site. In other words, the economic source potential of a heritage place is directly related to the public interest that this area has created in a whole or a significant part of society.

At this point, it is the main obstacle against the interest of the public on the heritage site of being able to comprehend the area, to make connections with the place and to meet visitors' expectations in a certain scale.

The aforementioned problem-result relationship is related to the preservability and maintainability of only any heritage place of the defined problem. The problem identified causes the significance of the site or the spirit of the place not to be understood by people. To understand the significance of the cultural heritage and the spirit of that place creates intellectual satiation both individually and socially. This satisfaction has the potential to evolve society positively. However, the insufficient perception of the heritage place undermines this potential.

When this cultural heritage is an archaeological heritage[2], the conservation, management and presentation of this site is also an interdisciplinary practice[3]. In addition, archaeological heritage sites are belonging to society and a part of them. Therefore, society's understanding of the significance and spirit of the place is very important for them to interiorize the site and be involved in the conservation process as a part of society.

The Zeugma archaeological site, which has been doomed to remain concealed for many different reasons, has been chosen to examine and evaluate the problem mentioned in the study both by creating the problem described above and by exposure to this problem. This site is concealed due to two main reasons; The site has been flooded as a result of the wrong state policies and has been obliged to stay under the earth or a protection shelter due to the lack of durability of stone material.

The archaeological site of Zeugma was suddenly abandoned after the Sasanian military expeditions came from the east in 252-253 A.C. and the settlement was preserved as it is under the earth. There is a considerably preserved archaeological site under the coverings that the site keeps most of the evidence about everyday life, domestic and regional economy, houses with furnishings and decorations, diet,

[2] "The "archaeological heritage" is that part of the material heritage in respect of which archaeological methods provide primary information. It comprises all vestiges of human existence and consists of places relating to all manifestations of human activity, abandoned structures, and remains of all kinds (including subterranean and underwater sites), together with all the portable cultural material associated with them" (ICOMOS, 1990, Charter for The Protection and Management of the Archaeological Heritage).

[3] "The protection of this heritage cannot be based upon the application of archaeological techniques alone. It requires a wider basis of professional and scientific knowledge and skills. Some elements of the archaeological heritage are components of architectural structures and in such cases must be protected in accordance with the criteria for the protection of such structures laid down in the 1966 Venice Charter on the Conservation and Restoration of Monuments and Sites. Other elements of the archaeological heritage constitute part of the living traditions of indigenous peoples, and for such sites and monuments the participation of local cultural groups is essential for their protection and preservation. For these and other reasons the protection of the archaeological heritage must be based upon effective collaboration between professionals from many disciplines. It also requires the co-operation of government authorities, academic researchers, private or public enterprise, and the general public. … These include the responsibilities of public authorities and legislators, principles relating to the professional performance of the processes of inventorisation, survey, excavation, documentation, research, maintenance, conservation, preservation, reconstruction, information, presentation, public access and use of the heritage, and the qualification of professionals involved in the protection of the archaeological heritage (ICOMOS, 1990, Charter for The Protection and Management of the Archaeological Heritage).

dressing, religion, etc. (Aylward, 2013, p.29). That is to say, there is a frozen city under the concealing covering layer[4].

A large part of the remains in the Zeugma archaeological site and its twin, Apamea, were inundated by the construction of the Birecik dam. Whereas, the environmental impact should have been investigated when determining the location of the dam. ICOMOS Charter for The Protection and Management of the Archaeological Heritage, published in 1990, underlined this issue as follows; "*Development projects constitute one of the greatest physical threats to the archaeological heritage. A duty for developers to ensure that archaeological heritage impact studies are carried out before development schemes are implemented, should therefore be embodied in appropriate legislation, with a stipulation that the costs of such studies are to be included in project costs. The principle should also be established in legislation that development schemes should be designed in such a way as to minimise their impact upon the archaeological heritage."*

Rescue excavations were carried out before these areas were submerged and maximum information about the parts that were going to be submerged was collected and movable artifacts were recovered. Since the rescue excavations were dealt with in very limited time, the principles of long term and sustainable excavation could not be applied sufficiently and the remains in the area were seriously damaged. Present state policies show that the Birecik dam will be operated for a longer period of time and the reservoir will continue to conceal this area. Moreover, although the dam waters did not conceal Zeugma, the site would be **remained concealed due to the lack of durability of building material**. Resulting from its geological process, the stone type used in most of the buildings in Zeugma embodies natural cracks and fissures that led its complete decay when it is subjected to weathering conditions. As a result of this situation, the stones, which begin to crumble and become powdered, cause the loss of the integrity of the structure. Mentioned stone is mostly local limestone that quarried

[4] In addition to the UNESCO report about the site (https://whc.unesco.org/en/tentativelists/5726/, last accessed 07.08.2019), many media described the site as "Pompeii II".

from the nearest area (Kennedy, 1998, p. 27). The quality of the stones is not suitable for long term existence however the absence of marble or granite material around Zeugma compels the residents to use local low-quality limestone (Aylward, 2013, p.13). The wrong choice of this local stone material might be one of the abandonment reasons of the city even in antique period. Today, this problem prevents presentation of the excavated buildings in open air conditions. Re-burying all the excavated building parts and/or closing all excavated parts to weathering condition are the only alternatives for their preservation. Both of which means creation of further problems for such an archaeological area. Due to this problem, the research team works in the field, excavates, documents necessary information and puts the excavated remains under protection by earth. Besides, in order to minimize the impacts of the remains on the exposed areas, protection roofs of different qualities have been constructed. However, the problems resulting from the deterioration of the stones' own properties are tried to be maintained by methods such as pneumatic mortar, metal skeleton or earth fill. Such interventions damage both the texture of the remains and the authentic value, therefore, this process is not preferred unless compulsory. This situation is the second reason that forces the remains to stay concealed for their survival.

This problematic character of the settlement, which is condemned itself to be concealed, directly overlaps the problem described above and constitutes a good case for the investigation of the problem.

1.2. Aim & Scope

This thesis concentrates mainly on how, an archaeological site that has been concealed/invisible, can be presented to and can be interpreted by people. In this context, the study aims to investigate the purpose, principles, and methods of presentation concept, to understand the case and, accordingly, to search the appropriate methods of presenting the concealed archaeological site in the direction of presentation principles.

The direct relation between the sense of sight and perception, which is necessary for an effective presentation plan and the ability of interpretation by visitors, makes the purpose of this study, which is summarized above, is complicated and challenging. As Frieman and Gillings put forth, seeing is not enough to perceive visual data, but it is essential to see visual data to be perceived (Freiman & Gillings, 2007, p. 6). Therefore, this thesis will focus on transforming the archaeological site, whose remains were left concealed in a great extent, visually perceptible to the visitors by the help of the proper presentation techniques and tools. At this point, it is necessary to apply both conventional and virtual methods in order to make the site visually perceptible by focusing on the invisible remains and to make sense of the meaning and spirit of the place effectively. Therefore, it is foreseen that both physically harmless, easily reversible interventions and updatable methods as new information is obtained will show up. In addition, the proposed methods should be economically feasible and sustainable. The fact that this archaeological site can be understood and internalized by the visitors is important in terms of protecting this area and increasing the consciousness and awareness of conservation concepts.

To explain in detail the scope of this study, the main topics to be focused on the study are as follows;

-Understanding the concept of presentation with their aims and principles,

-Researching conventional and virtual presentation techniques and tools,

-Understanding the historical background and present situation of the case,

-Identifying the problems of a concealed site,

-Evaluating the case as a site to be presented,

-Determining the principles of presentation and most convenient presentation techniques and tools for an archaeological site that has been concealed,

-Preparing the architectural preliminary project in accordance with the requirements of the above data, principles, and needs of the project area.

1.3. Methodology

It is possible to examine the method of this study under three main headings. The first one of these titles is the research and analysis stage.

Literature and field research was carried out in the first phase. According to the content of the topics, various research methods were used. The research methods and documents used in the thesis include literature research such as books and articles on the related topic such as concepts of presentation, historical background of the case and excavation, research and conservation history of the site; archival research on council decisions in Gaziantep Regional Council for Protection of Cultural Entities; legal documents such as master plans and action plans of SAP (Southeastern Anatolia Project). Besides these research base map and aerial photos used in this study were taken from General Command of Mapping. Moreover, the site analysis maps have different sources;

Topography of the site	→	General Command of Mapping, vector contour lines
Slope	→	Calculations based on General Command of Mapping, vector contour lines
Aspect – Land orientation	→	Calculations based on General Command of Mapping, vector contour lines
Landcover	→	Generated by orthophoto (GCM) and site survey
Surface hydrology	→	State Hydraulic Works, digital surface water vectors
Geology	→	Mineral Research and Exploration Institute, topogeographical formation vectors
Access	→	Generated by Orto Photo (GCM) and site survey
Archeological remains, Built environment and Presentation elements	→	Site survey

In addition to the above, site surveys of Zeugma archaeological site and Zeugma Mosaic Museum conducted.

Within the scope of the field survey conducted in the Zeugma archaeological site, the locations of the ruins, borders, built environment elements, presentation elements, infrastructure elements were determined with the GPS device and photographed. The necessary data for the above elements were collected through the

site survey sheets prepared before the field study (Figure 1. 1). To give an example of the collected data;

on archaeological remains;

- original use (if known)
- legibility
- structural condition
- accessibility
- interventions
- presentation status
- visibility

on buildings;

- use
- degree of compliance with the site
- quality
- unique features

on roads;

- type (vehicle or pedestrian)
- covering
- width
- slope

on presentation elements;

- type
- quality
- convenience
- competence
- degree of offered information

After carrying out the necessary literature research and field researches, the collected data was transferred to ArcGIS[5] environment with their geographical location. Then, the data transferred were classified under certain headings and the necessary analyzes were made for the site (Figure 1. 2). All analyzes carried out at this

[5] ArcGIS is a GIS (geographical information system) software which enables to use, manage and analyze location based data.

stage were made to understand the value, problem and potential to be focused on and to provide guidance for the proposals to be created for the site. For a new question that arose during the evaluation or decision stage, the data was obtained by returning to the analysis stage.

Moreover, interviews with the excavation team head, excavation team members, local people from Belkıs Village, museum employees and questionnaires with both archaeological site (Figure 1. 3) and museum visitors (Figure 1. 4) were also included in the site survey process.

During the fieldwork, interviews with the local administrations about their prospects for the future of the site is asked for, but this phase of the study was passed over as there was no return from the authorities.

Interviews and questionnaires were evaluated after the end of the field study and the results were used to evaluate both the site itself and the presentation of the site.

After the research and analysis phase, the evaluation process was started. At this stage, the values, problems, and potentials of the settlement were determined based on the research and analysis carried out in the previous stage. Following the research, analysis and evaluation stages, principles, strategies, and vision for presentation project of the site were stated, appropriate and effective presentation techniques and tools were designated, layers of scenarios and architectural program were determined in line with the analysis of visitor trends and data coming from the site itself, and accordingly, an architectural preliminary project was prepared. The relations between the stages of the study is shown by flow chart below (Figure 1. 5).

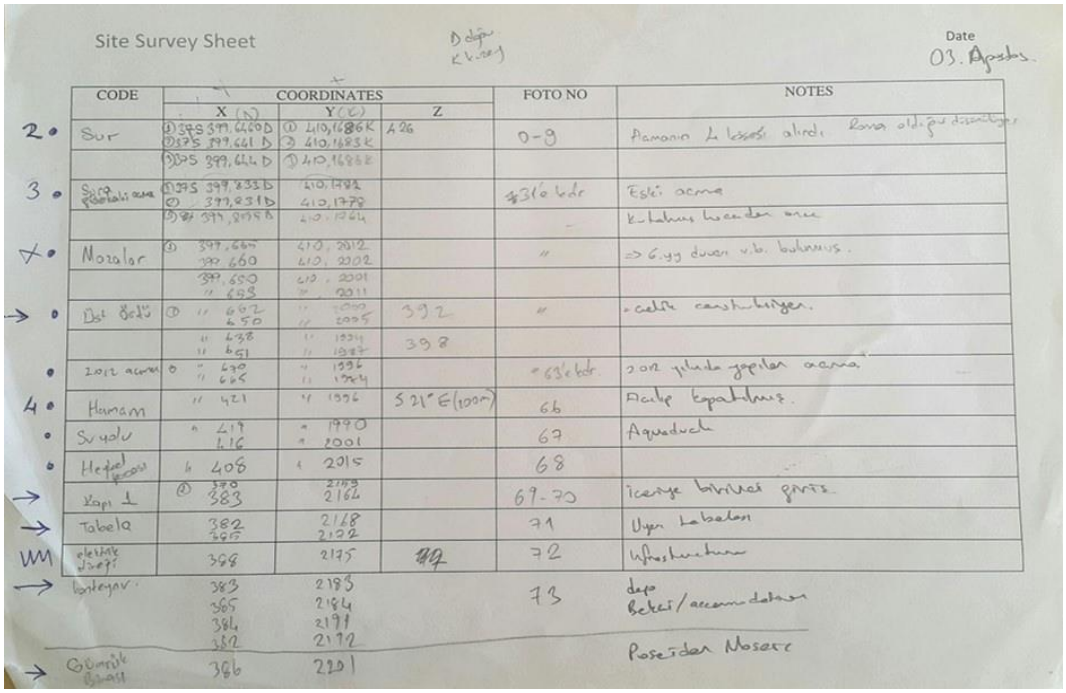


Figure 1. 1 Site Survey Sheet (Gündüz Çetinkaya, 2011)

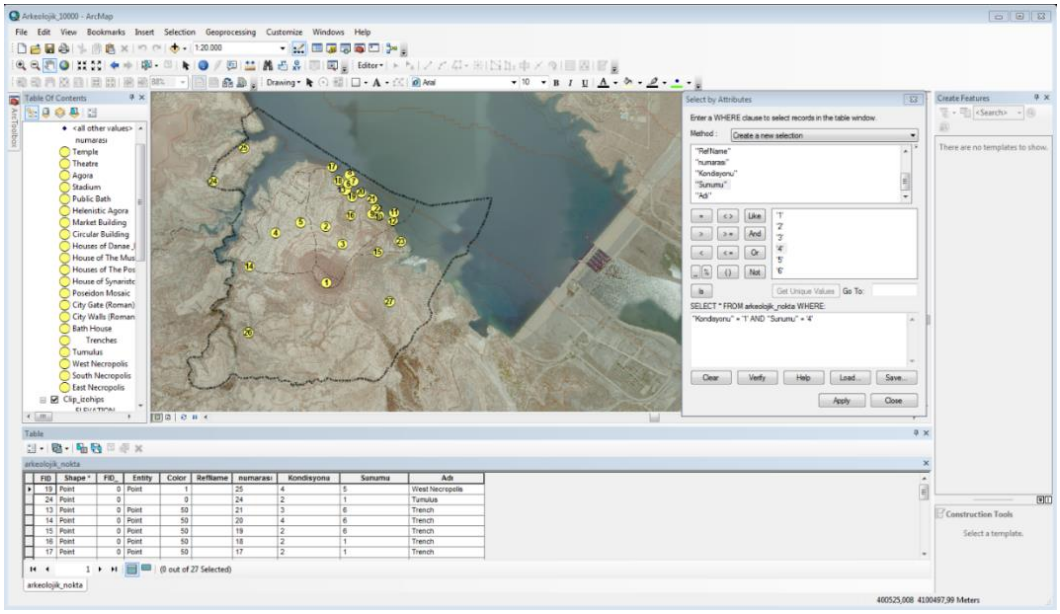
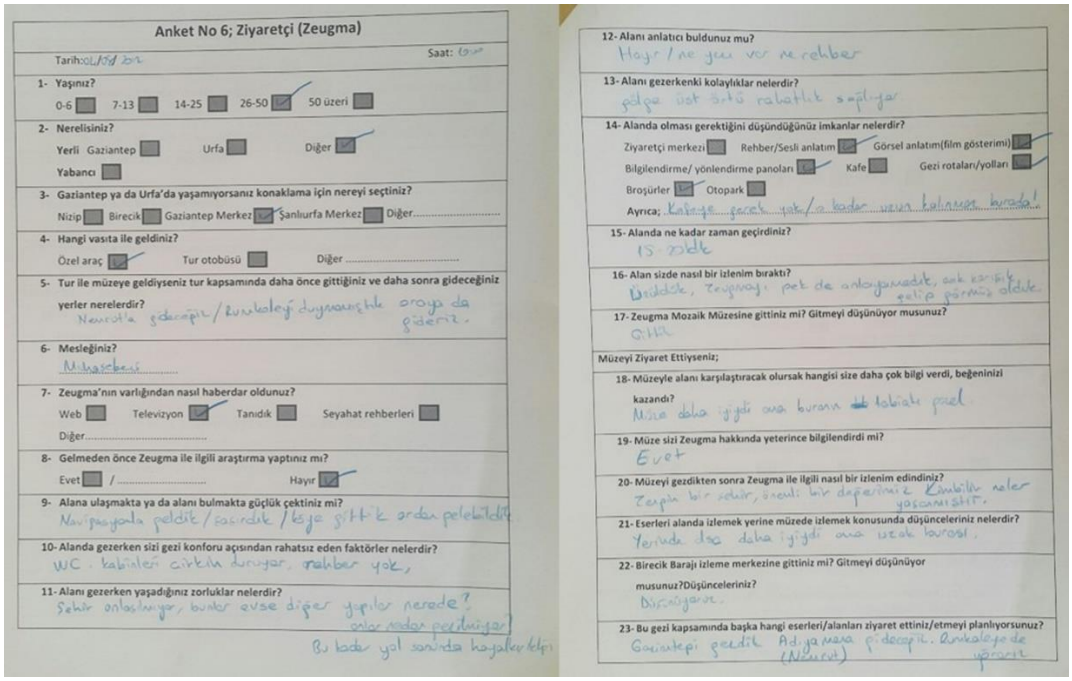


Figure 1. 2 Analysis Process on ArcGIS Environment (Gündüz Çetinkaya, 2018)



Anket No 6; Ziyaretçi (Zeugma)

Tarih: 01/08/12 Saat: 13:00

1- Yaşınız?
0-6 ☐ 7-13 ☐ 14-25 ☐ 26-50 ☑ 50 üzeri ☐

2- Nerelisiniz?
Yerli Gaziantep ☐ Urfa ☐ Diğer ☑
Yabancı ☐

3- Gaziantep ya da Urfa'da yaşamıyorsanız konaklama için nereyi seçtiniz?
Nizip ☐ Birecik ☐ Gaziantep Merkez ☑ Şanlıurfa Merkez ☐ Diğer.....

4- Hangi vasıta ile geldiniz?
Özel araç ☑ Tur otobüsü ☐ Diğer .....

5- Tur ile müzeye geldiyseniz tur kapsamında daha önce gittiğiniz ve daha sonra gideceğiniz yerler nerelerdir?
Nemrut'a gidecegiz / Rumkaleyi duyduk ama onla da gideriz.

6- Mesleğiniz?
Muhasebeci

7- Zeugma'nın varlığından nasıl haberdar oldunuz?
Web ☐ Televizyon ☑ Tanıdık ☐ Seyahat rehberleri ☐
Diğer.....

8- Gelmeden önce Zeugma ile ilgili araştırma yaptınız mı?
Evet ☐ / ..... Hayır ☑

9- Alana ulaşmakta ya da alanı bulmakta güçlük çektiniz mi?
Navigasyonla geldik / sorduk / tesise gittik ordan gelebildik

10- Alanda gezerken sizi gezi konforu açısından rahatsız eden faktörler nelerdir?
WC. kabinleri cirkin durıyor, rehber yok,

11- Alanı gezerken yaşadığınız zorluklar nelerdir?
Şehir anlasılmıyor, bunlar evse diğer yapılar nerede? onlar nedir gerilmiyor!

Bu kadar yol sonunda hayalet kalıyı

12- Alanı anlatıcı buldunuz mu?
Hayır / ne yazı ve ne rehber

13- Alanı gezerkenki kolaylıklar nelerdir?
gölge üst örtü rahatlık sağlıyor

14- Alanda olması gerektiğini düşündüğünüz imkanlar nelerdir?
Ziyaretçi merkezi ☐ Rehber/Sesli anlatım ☑ Görsel anlatım(film gösterimi) ☑
Bilgilendirme/ yönlendirme panoları ☑ Kafe ☐ Gezi rotaları/yolları ☐
Broşürler ☑ Otopark ☐
Ayrıca; Kafeye gerçek yok / o kadar vazo bulunsun burada!

15- Alanda ne kadar zaman geçirdiniz?
15-20dk

16- Alan sizde nasıl bir izlenim bıraktı?
Beğendik, Zeugma'yı pek de anlayamadık, ama kendisi gelip görmüş olduk.

17- Zeugma Mozaik Müzesine gittiniz mi? Gitmeyi düşünüyor musunuz?
Gitti

Müzeyi Ziyaret Ettiyseniz;

18- Müzeyle alanı karşılaştıracak olursak hangisi size daha çok bilgi verdi, beğeninizi kazandı?
Müze daha iyiydi ama burası da kalıntılar güzel

19- Müze sizi Zeugma hakkında yeterince bilgilendirdi mi?
Evet

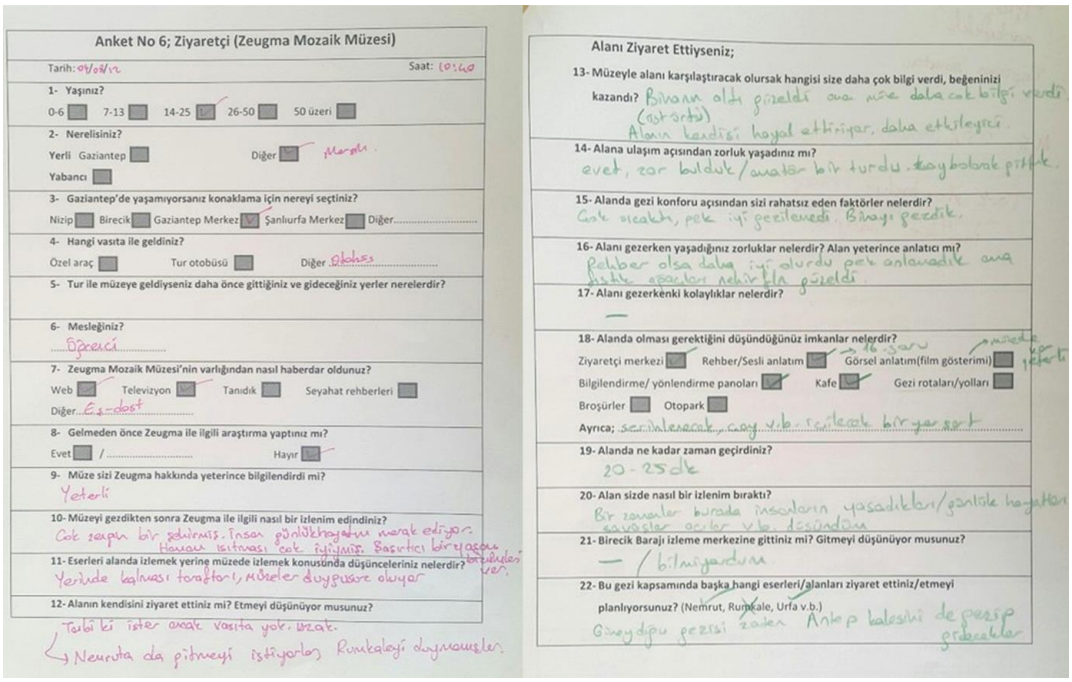
20- Müzeyi gezdikten sonra Zeugma ile ilgili nasıl bir izlenim edindiniz?
Zengin bir sehir, önemli bir departmanız Kimbilir neler yasanmıstır.

21- Eserleri alanda izlemek yerine müzede izlemek konusunda düşünceleriniz nelerdir?
Yerinde dısı daha iyiydi ama uzak burası.

22- Birecik Barajı izleme merkezine gittiniz mi? Gitmeyi düşünüyor musunuz? Düşünceleriniz?
Düsünüyorum.

23- Bu gezi kapsamında başka hangi eserleri/alanları ziyaret ettiniz/etmeyi planlıyorsunuz?
Gaziantepi gezdik Adıyaman'a gidecegiz. Rumkaleye de (Nemrut) yürüyüs

Figure 1. 3 Questionnaire for Zeugma Archaeological Site Visitors (Gündüz Çetinkaya, 2011)



Anket No 6; Ziyaretçi (Zeugma Mozaik Müzesi)

Tarih: 04/08/12 Saat: 10:40

1- Yaşınız?
0-6 ☐ 7-13 ☐ 14-25 ☐ 26-50 ☐ 50 üzeri ☐

2- Nerelisiniz?
Yerli Gaziantep ☐ Diğer ☑ Mersin.
Yabancı ☐

3- Gaziantep'de yaşamıyorsanız konaklama için nereyi seçtiniz?
Nizip ☐ Birecik ☐ Gaziantep Merkez ☑ Şanlıurfa Merkez ☐ Diğer.....

4- Hangi vasıta ile geldiniz?
Özel araç ☐ Tur otobüsü ☐ Diğer Otobüs

5- Tur ile müzeye geldiyseniz daha önce gittiğiniz ve gideceğiniz yerler nerelerdir?

6- Mesleğiniz?
Öğrenci

7- Zeugma Mozaik Müzesi'nin varlığından nasıl haberdar oldunuz?
Web ☑ Televizyon ☑ Tanıdık ☐ Seyahat rehberleri ☐
Diğer..Es-dost

8- Gelmeden önce Zeugma ile ilgili araştırma yaptınız mı?
Evet ☐ / ..... Hayır ☑

9- Müze sizi Zeugma hakkında yeterince bilgilendirdi mi?
Yeterli

10- Müzeyi gezdikten sonra Zeugma ile ilgili nasıl bir izlenim edindiniz?
Çok zengin bir sehirmis. Insan günlükhayatını merak ediyor. Havuzu isıtması çok iyi. Sasırtıcı bir yapısı var.

11- Eserleri alanda izlemek yerine müzede izlemek konusunda düşünceleriniz nelerdir?
Yerinde kalması tercihim, müzeler duygusuz oluyor

12- Alanın kendisini ziyaret ettiniz mi? Etmeyi düşünüyor musunuz?
Tabiki ister ancak vasıta yok. Uzak.

↳ Nemruta da gitmeyi istiyorlar, Rumkaleyi duymamışlar.

Alanı Ziyaret Ettiyseniz;

13- Müzeyle alanı karşılaştıracak olursak hangisi size daha çok bilgi verdi, beğeninizi kazandı? Binanın altı güzeldi ama müze daha çok bilgi verdi (ast-üst) Alanın kendisi hayal ettiriyor, daha etkileyici.

14- Alana ulaşım açısından zorluk yaşadınız mı?
evet, zor bulduk / anadan bir turdu. kaybolanlık pisiklik.

15- Alanda gezi konforu açısından sizi rahatsız eden faktörler nelerdir?
Çok sıcaktı, pek iyi gezilemedi. Binayı gezdik.

16- Alanı gezerken yaşadığınız zorluklar nelerdir? Alan yeterince anlatıcı mı?
Rehber olsa daha iyi olurdu pek anlamadık ama bisiklet aparatları nedeniyle güzeldi.

17- Alanı gezerkenki kolaylıklar nelerdir?
—

18- Alanda olması gerektiğini düşündüğünüz imkanlar nelerdir?
Ziyaretçi merkezi ☐ Rehber/Sesli anlatım ☐ → 16 yaşı Görsel anlatım(film gösterimi) ☑ mesela yapılar
Bilgilendirme/ yönlendirme panoları ☑ Kafe ☑ Gezi rotaları/yolları ☐
Broşürler ☐ Otopark ☐
Ayrıca; ses bilgisayar, cep vb. tasıtacak bir yer şart

19- Alanda ne kadar zaman geçirdiniz?
20 - 25 dk

20- Alan sizde nasıl bir izlenim bıraktı?
Bir zamanlar burada insanların yaşadıkları/günlük hayatları sayılar aydınlatılmış vb. düşündüm

21- Birecik Barajı izleme merkezine gittiniz mi? Gitmeyi düşünüyor musunuz?
— / bilmiyordum

22- Bu gezi kapsamında başka hangi eserleri/alanları ziyaret ettiniz/etmeyi planlıyorsunuz? (Nemrut, Rumkale, Urfa v.b.)
Güneydoğu gezisi zaten Antep kalesini de gezip görecekler

Figure 1. 4 Questionnaire for Zeugma Mosaic Museum Visitors (Gündüz Çetinkaya, 2011)

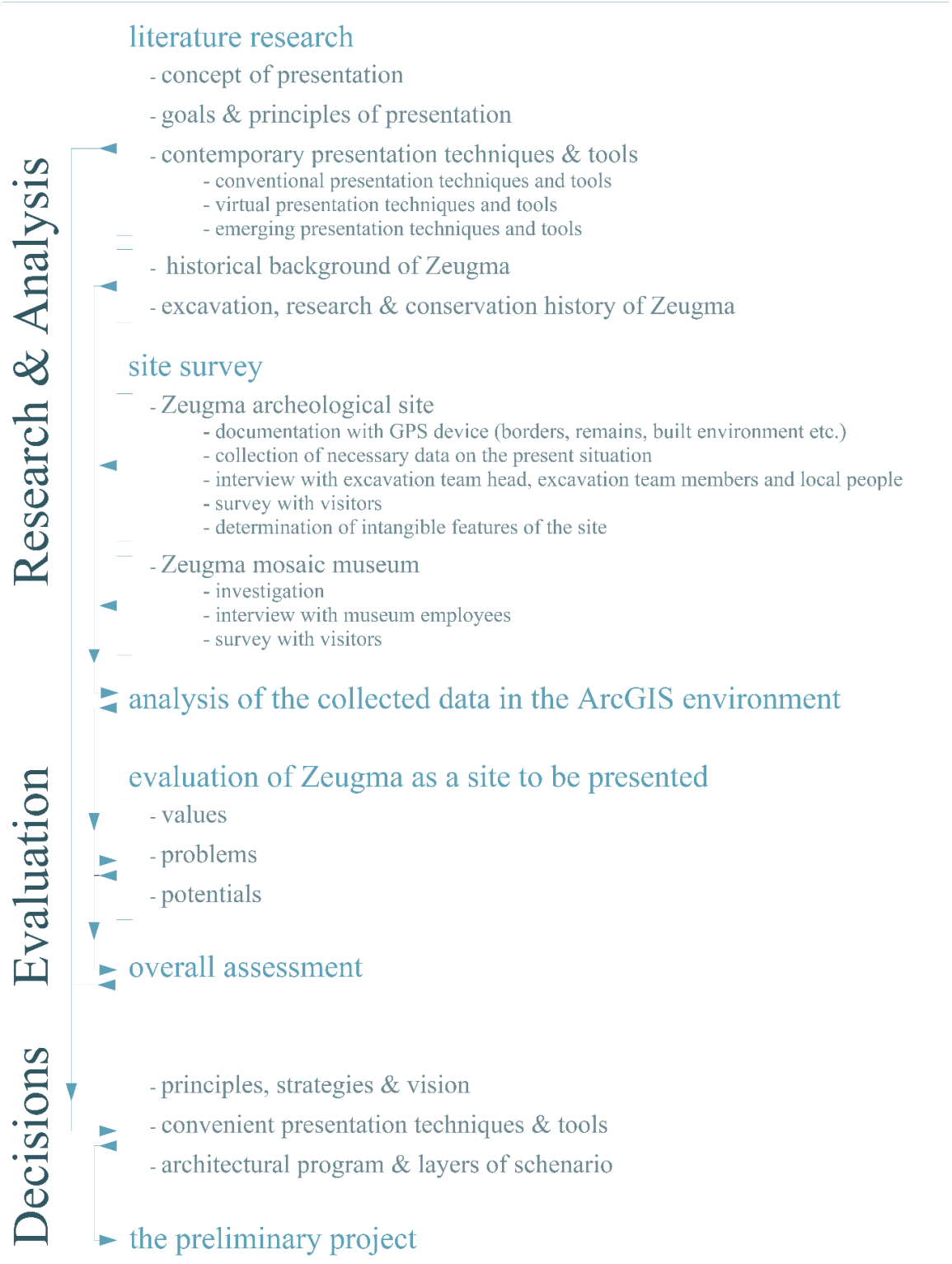


Figure 1. 5 Chart of the Methodology (Gündüz Çetinkaya, 2018)

1.4. Structure of the Thesis

As mentioned in the methodology of the study, this thesis consists of five main sections: a theoretical overview of the presentation of archaeological sites, research on the site, analysis, evaluation, and finally an example as an architectural preliminary project.

The first chapter or the introductory section of the study states the definition of the problem that the thesis mainly concentrates on, the reasons behind the selection of the site and the relation between the problem and the selected site, aim and scope of the study, methodology of the study and structure of the thesis.

In the second chapter a theoretical research as background information for the discussion on the presentation of archaeological sites with contemporary presentation techniques and tools. Since this chapter is a theoretical research chapter and will create a background for the continuation of the study, the presentation of the archaeological sites and the general research of the available techniques and tools are evaluated under this heading.

In the third chapter of the study, there are detailed researches about the Zeugma archaeological site, which was chosen in order to examine the problem described, i.e. a concealed cultural heritage. The first of these studies is to determine the location, boundaries and natural characteristics of the site. Then, the history of the settlement was focused on. At this point, the historical background of Zeugma was researched and chronologically compiled under this chapter of the thesis. In addition, the history of excavation, research, and conservation of the site was also investigated. Southeastern Anatolia Project (GAP), one of the two main reasons behind Zeugma becoming a concealed settlement, became a part of this investigation as a context and background to the excavation and conservation activities in Zeugma. Following the above headings, mostly based on the literature review and research, the current situation of the site determined within the scope of the field researches was emphasized. In this respect, natural and geographical aspects such as topography,

slope, aspect, land cover, surface hydrography, geology and physical environment such as archaeological remains, conservation and presentation elements, built environment were examined. In addition, subjects such as access to the site and in-situ, ex-situ presentation of Zeugma are among the topics covered in this chapter.

After the research and analysis sections described above, evaluation in terms of values, problems and potentials as a site to be presented according to previously identified inputs is given in the fourth chapter. The evaluations made in this section constitute the basis for the general arrangement to be established on the presentation of the site.

Theoretical research on the presentation of an archaeological site, determination of the background and the present state of the site and the blending of all these data enable to the determination of principles, strategies, and vision for the presentation project, selection of presentation techniques and tools in accordance with the context of the field and the current situation, designation of architectural program and layers of scenarios based on visitor trends and their needs. The architectural preliminary project, which was formed based on all these, together with the above, constitutes the fifth chapter. In addition, with a general evaluation, the predictions regarding the transformation of the presentation of a concealed archaeological site due to possible developments are mentioned in the sixth chapter.

CHAPTER 2

BACKGROUND OF THE CONCEPT: PRESENTATION OF ARCHAEOLOGICAL SITES

In this part of the study, the theoretical background and development of the presentation concept will be worked out by the help of the literature reviews. The aim behind this search is to approach the problem pointed out in the first chapter -the difficulty in presentation of a concealed archaeological site- in line with the theoretical framework.

Another topic that will be discussed in this chapter is the examination of conventional and contemporary presentation techniques and tools, used or have the possibility to be used in heritage places, with their examples, advantages, and disadvantages. Besides, to form a base for the determination process of the most appropriate one to the case, these techniques and tools are going to be evaluated according to criteria concentrating on their practicableness, affordability, updateability, etc.

2.1. Definition of Presentation

Presentation, as stated in international charters, one of the most important stages of the conservation process (Charter for the Conservation of Historic Towns and Urban Areas – ICOMOS, 1987). The dictionary meaning of "presentation" is "the manner of presenting, especially the organization of **visual** details to create an overall impression." [6] ICOMOS Charter for The Protection and Management of the Archaeological Heritage states that "The presentation of the archaeological heritage to the general public is an essential method of promoting an understanding of the

[6] World English Dictionary

origins and development of modern societies. At the same time, it is the most important means of promoting an understanding of the need for its protection".

The main aim of presenting a cultural heritage is to explain the site to the public from established authoritative and reliable information sources.[7] It is a kind of communication between relevant content gathered by arranging the interpretive information, physical access, infrastructure and public at a cultural heritage site, and might consist of museums, displays, info panels, walk ways, lectures, guided tours and also multimedia applications (Charter for the Interpretation and Presentation of Cultural Heritage Sites – ICOMOS, 2008). This mode of communication is usually a planned arrangement of information and physical access to a cultural heritage site by scholars, design firms, and heritage professionals (Charleston Declaration, 2005).

As stated, presentation is an important part both for conserving and managing of a cultural heritage site that is a tool that conveys the significance of the heritage to visitors and local communities aiming to increase public awareness, acquiring public support and enhancing understanding of cultural heritage (Shalaginova, 2007, p. 2). In other words, this conductive character of the heritage presentation comes with an area that can be managed as a tool to increase public awareness, public support and indirectly encourage the conservation process in a social and economic manner.

The presentation of a cultural heritage site should be efficient enough in order to strengthen the interpretation which has the ability to enhance the public attention. On the other hand, the presentation alone might be insufficient to attract people especially in a concealed site and should serve for interpretation of the site, the interpretation at the point reached today makes a significant contribution to the preservation of a site by helping to increase the value of the site in the eyes of the society and strengthening the bond between society and the site.

[7] Report on a One-Day Roundtable Discussion,*" Interpretation Standards at World Heritage Sites: Is There a Need for Assessment Criteria for On-Site Interpretation Programmes and Emerging Interpretive Technologies?"* ICOMOS, Paris, 2006

Tilden (1977) who is one of the pioneers of the term interpretation defines it as an educational activity which aims to reveal meanings and relationships through the use of original objects, by first-hand experience, and by illustrative or informative media, instead of communicating with factual information. Interpretation is all the ways of presenting the cultural significance of the site by combining the treatments of the fabric such as maintenance, restoration, reconstruction, use of place and introduced explanatory materials that were culturally appropriate (Burra Charter - ICOMOS, 1999). In detail, interpretation is a wide range of activities that aims to increase public awareness and enhance understanding of cultural heritage by encompassing its full significance, multiple meanings and values (Ename Charter – ICOMOS, 2007).

Moreover, the possible activities the term interpretation sheltered are print and electronic publications, public lectures, on-site and off-site installations, educational programs, community activities, and ongoing research, training, and evaluation stages that the interpretation process has already experienced. At this point, it is important to state that there is a difference between the terms “presentation” and “interpretation” in terms of the content. Interpretation is a term wider than a presentation by its relationship with collective memory and it is a combination of reflecting, explaining and presenting activities that also intends to maintain the non-physical link with the past (Silberman, 2004, p.121).

2.2. Goals and Principles of Presentation of Archaeological Sites

The history of presentation of the cultural heritage sites comes from earlier times; however, Venice Charter can be considered as the one that pointed the importance of the sensitive and effective presentation in heritage conservation through the terms of reconstruction, restoration and the extant fabric of cultural heritage site. Presentation has a fundamental method that enables the society to understand their origins and develop as a modern society, besides it promotes the understanding of the need for heritage protection (Charter for The Protection and Management of the Archaeological Heritage, ICOMOS, 1990). Together with the fundamental role of the

presentation of a heritage site in the process of exposing, highlighting and transmitting the significance of the place, “Burra Charter” (1999) also underlines the importance of the presentation activities as a support for the conservation process. In the “International Charter on Cultural Tourism” (1999), it is stated that both natural and cultural heritage belongs to all people and everybody has rights and responsibilities for understanding appreciating and conserving its universal values. Moreover, the charter points out that the communicating heritage’s significance with its host community and visitors is one of the main objectives of managing and conserving of the heritage (International Cultural Tourism Charter – ICOMOS, 2002).

The importance of presentation was clear but there were no principles, standards or any guidelines especially for archaeological heritage. There was only Charter for The Protection and Management of the Archaeological Heritage (ICOMOS, 1990) stating that “Presentation and information should be conceived as a popular interpretation of the current state of knowledge, and it must therefore be revised frequently. It should take account of the multifaceted approaches to an understanding of the past”. In 2002, finally, the “ICOMOS Charter for Interpretation and Presentation of Cultural Heritage Sites” (2002) has initiated by the help of increasing interest on presentation. Charter was aimed to answer the need for clear standardized terminology and accepted professional principles for presentation (Figure 2. 1). It defined the main goals and the principles of the presentation of cultural heritage sites as a “conservation effort by enhancing public appreciation an understanding of cultural heritage sites”.

In accordance with the international documents, there are some accepted principles of the presentation that it needs to fulfill some requirements. “Access and Understanding” is the first one of the principles the Ename Charter (2007) defined. The word access means both physical and intellectual access of people to presentation programs and represents the importance of establishing a meaningful connection of people with the site. Another important point is “Information Sources” that presentation programs based on. The sources should be gained by accepted scientific

and scholarly methods and should carry cultural traditions. “Context and Setting” is the third heading and comes with the importance of the relation between presentation of heritage, and its wider social, cultural, historical, and natural contexts and settings. As Nara Document (1994) underlined, the basic concept of “Authenticity” must be respected by presentation program of a cultural heritage site. “Sustainability” should be one of the main goals that presentation plan of cultural heritage must be sensitive to the natural and cultural environment by aiming the social, financial and environmental sustainability. Like many fields of conservation, the presentation stage also need an interdisciplinary process. “Inclusiveness” comes as a collaboration between heritage professionals, host, and associated communities, and other stakeholders in the interpreting and presenting process. As a last principle of the charter, the continuation of “Research, Training, and Evaluation” is a necessity of presentation of a cultural heritage site. It is not a completed action for heritage sites; it is ongoing content that may need revision or expansion. In addition to Ename Charter, Charleston Declaration stated several principles that are totally relevant and similar to the principles of the further charter, Ename.

Moreover, there is a need for paying attention to reach an understandable and accessible concept for different target groups. The information that is going to be transmitted should be relevant with the knowledge and experience level of the society. Moreover, technique and content should be presented in a wide range of media and should be provocating enough to attract attention. Furthermore, the content of the presentation must be well-searched without eliminating the traditional stories related to the site and not to forget the context of the site.[8] In other words, there must be a holistic approach to presenting a site, but this does not mean telling everything that can be reached.

[8] SHALAGINOVA I. (2007). Ethical Principles of Heritage Presentation for World Heritage Sites, Cottbus: Brandenburdische Technische Universitat.



Figure 2. 1 Chart of Principles and Goals of Presentation and Interpretation According to Ename Charter (Gündüz Çetinkaya, 2018)

2.3. Presentation Techniques and Tools

An object and the partial information it owns can be conveyed to the observer even when it stands only in a perceptible position. However, when an archaeological site is intended to be presented and interpreted by visitors, some visitor friendly approaches should be introduced to the visitors. In line with the principles and objectives discussed above, methods such as excavate, consolidate and present or reconstruction and anastylosis are insufficient and old school. In this vein, to provide an effective and holistic presentation, the techniques, and tools appropriate to the principles and purposes of presentation, which have been previously described in detail, need to be selected by considering requirements of the site.

There are many ways of presenting a cultural heritage (site, building, etc.) and enabling it to be interpreted by people. These presentation techniques and tools can be evaluated under two main headings as conventional/traditional and contemporary/emerging ones (Figure 2. 2).

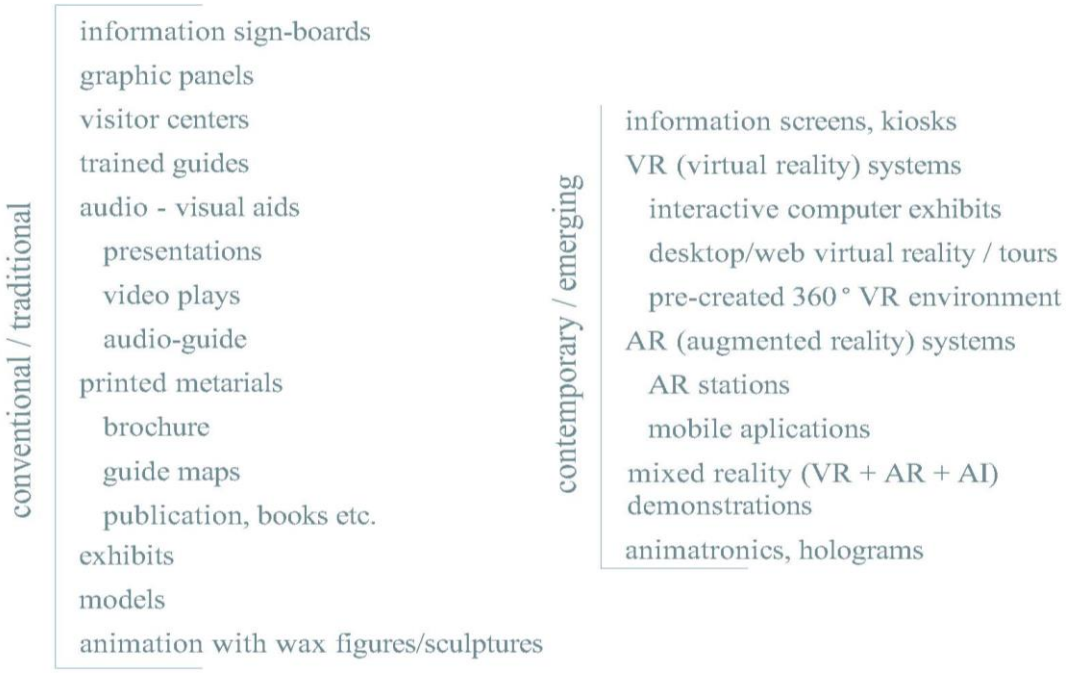


Figure 2. 2 Presentation Techniques and Tools (Gündüz Çetinkaya, 2018)

2.3.1. Conventional / Traditional Techniques and Tools

- **Information sign-boards & graphic panels**

Information sign-boards can provide information such as historical background, architectural characteristics, historical anecdotes or other features about the exhibited artifact, as well as to guide visitors. In addition, graphic panels are the most basic ways of transferring visual information through the help of architectural drawings, 3D models, photographs, etc. to visitors. Both the information signboards and graphic panels can be used individually or combined with each other. These tools are non-interactive and in-situ presentation tools. The advantages and disadvantages of these tools are as follows;

Table 2. 1 Advantages and Disadvantages of Information Sign-boards & Graphic Panels

Advantages	**Disadvantages**
- no need to surveillance - both initial and maintenance cost is low - visitors can use easily - appeal to a wide range of visitors	- very common element that could be easily ignored by visitors - can damage the landscape visually - by standing alone, it is insufficient according to pre-listed presentation and interpretation principles and requirements

- **Visitor centers**

Visitor centers are found in various places of interest, also found in the heritage sites and provides various facilities such as information desks, educational exhibitions, artifact displays, etc. Visitor centers can have a key role in the interpretive process by acting as a portal to the interpretation experience. There are also a number of facilities for meeting the needs of visitors such as restrooms, rest areas, cafes. In the visitor centers, it is possible to perform video screenings, presentations, and demonstrations with the help of trained staff, and it is a very convenient place for starting guided or non-guided tours. In this area, visitors are provided with the opportunity to make tour

selections, to obtain preliminary information and to obtain resources such as maps or brochures that indicate tour routes and basic information about the site. On the other hand, visitor centers have an important place to ensure visitor control and security of the area.

Visitor centers are often built in locations with direct physical contact with cultural heritage sites. Consequently, it raises the question of what the restrictions in cultural heritage areas should be, and in particular for this study archaeological heritage areas, about this topic.

In Turkey, archaeological heritage places, announced as "archeological site[9] (1, 2 or 3rd degree archeological site)". The construction conditions in these areas were explained by the decision number 658 (1999) taken by the Ministry of Culture, High Council for the Protection of Cultural Properties. However, this principle makes superficial definitions, does not provide an adequate framework and leaves the decisions about possible interventions to the initiative of the cultural heritage conservation boards. With the addition of the 2016 sub-clause, conditions that are already unclear were further expanded and left to the competence of the cultural heritage conservation board members' professional competency and resistance to rent or political influence. Therefore, it should be remembered that the constructions on or close to archaeological heritage sites, including visitor centers, involves the risk of damaging that site.

The advantages and disadvantages of visitor centers are as follows;

[9] "The archaeological site is the settlements and areas where all kinds of cultural assets reflecting the underground, above and underwater products of the ancient civilizations that have survived since the existence of humanity, and the social, economic and cultural characteristics of their times" (Ministry of Culture, High Council for the Protection of Cultural Property, Resolution 658, 1999).

Table 2. 2 Advantages and Disadvantages of Visitor Centers

Advantages	**Disadvantages**
- ease to start interpretation and presentation processes - can contain a wide range of media (video, presentations, interactive screens, kiosks, etc.) - helps to ensure visitor control and security of the site - comfortable for visitors - appeal to a wide range of visitors - helps to orientate visitors	- both initial and maintenance cost is very high - needs professional management and control - it can direct visitors' attention from the site to itself by leaving aside the site. - its content can stay static and unchanged

- **Trained guides**

They are trained professionals or volunteers who outline the main characteristics of the site by serving for an effective interpretation process. The guides are expected to explain the site in a clear and understandable way, to modify their narratives according to the audience they are addressed, to have the level of knowledge to answer the questions coming from the visitors, to remain faithful to the presentation and interpretation theme of the site. A guide that can meet these conditions can be considered to provide interactive presentation opportunity to the visitors. The advantages and disadvantages of trained guides are as follows;

Table 2. 3 Advantages and Disadvantages of Trained Guides

Advantages	**Disadvantages**
- very effective for of interpretation - flexible, easily updateable - interactive - can dissuade visitors from harmful, dangerous, or disruptive activates, and can state explicitly comment on behavior and request compliance	- a comprehensive training process for guides is needed - depended to a trained person - only reach a small group of visitors - need good marketing and administration - the relevant information needs to be given can be too detailed or scholarly - lack of critical perspective on conveying historical information

- **Audio – visual aids**

Audio-visual aids can be considered as the main topic including presentation techniques such as videos, presentations, and audio - guides. All of these presentation techniques serve to provide an informative narrative via certain electronic devices. Although in some cases it needs to be controlled by human hands, most of the time, they can perform their functions without any assistant between the visitor and these electronic devices. The advantages and disadvantages of audio-visual aids are as follows;

Table 2. 4 Advantages and Disadvantages of Audio – Visual Aids

Advantages	**Disadvantages**
- very effective for of interpretation - can be multilingual - appeal to a wide range of visitors - has opportunity of creative combination of visuals like pictures, animations and models, text and sound - can be diversified according to different groups of visitors (children - adult) - could be effective both on-site and off-site	- relatively expensive initial, maintenance and operational cost - depended to electronic devices - used technology can be out of date quickly - can isolate visitors from each other - might be hard to use for some visitors

- **Printed materials**

Different types of printed materials are a common form of presentation and can be used both on site and off site. Printed materials in different forms such as brochures, booklets, leaflets, maps or posters can be used either as advertising material to draw visitors' attention to the site or give information at different levels to visitors. The advantages and disadvantages of printed materials are as follows;

Table 2. 5 Advantages and Disadvantages of Printed Materials

Advantages	Disadvantages
- can contain more information than a signboard or graphic panel - can be diversified according to different groups of visitors (children - adult) - could be effective both on-site and off-site	- needs distribution and reprint - can cause a pollution by visitors' getting rid of them

- **Animations with wax figures or sculptures**

This method is often used to describe daily life or a specific life practice for visitors. The wax figures or sculptures are like frozen in the most obvious and explanatory moment of certain motion. This mode of expression requires a very detailed research and analysis phase, even if applied in a very limited area. For instance, every detail of the animations with human forms from hairstyles to clothing needs to be delicately designed. Although this method is usually preferred in closed areas such as museums, there are also examples of on-site presentations (Figure 2. 3).

The advantages and disadvantages of animations with wax figures or sculptures are as follows;

Table 2. 6 Advantages and Disadvantages of Animation with Wax Figures or Sculptures

Advantages	Disadvantages
- can raise public interest - very effective for of interpretation by visualizing everyday life - appeal to a wide range of visitors	- initial cost is very high - needs protection, certain ambient conditions - requires extra detailed preliminary study - might dominate the significance of the site - may look unrealistic or idealized



Figure 2. 3 Wax Figurine of a Potter, Tongguan Kiln Archaeological Park, Wangcheng District, Changsha City. Source: http://en.changsha.gov.cn/travel/Attractions/, last accessed in 12 March 2019

2.3.2. Contemporary / Emerging Techniques and Tools

- **Information screens, kiosks**

The use of information screens (Figure 2. 4) and kiosks (Figure 2. 5) as an interactive tool in the heritage sites is becoming widespread day by day. These

presentation elements are able to provide brief information about the heritage, or deep and detailed information to curious visitors, to answer possible questions of the visitors, moreover, they can be used as a preliminary step in the direction of the visitors and the beginning of the presentation process. These tools offer a medium where both visual and audio narration can coexist. In addition, the visual presentation of the artifacts, sites or elements that cannot be physically presented or concealed can be visualized with the help of these devices. Especially information screens come with the opportunity of presenting reconstructive animations, virtual tours or educational games. The advantages and disadvantages of information screen or kiosks are as follows;

Table 2. 7 Advantages and Disadvantages of Information Screens and Kiosks

Advantages	**Disadvantages**
- very effective for of interpretation - appeal to a wide range of visitors - easily updateable - encourages interaction - can contain more information than a signboard or graphic panel - can be diversified according to different groups of visitors (children - adult) - has opportunity of creative combination of visuals like pictures, animations and models, text and sound - new language versions can be added	- relatively expensive initial, maintenance and operational cost - depended to electronic devices and requires electricity wiring - needs protection - might be hard to use for some visitors



Figure 2. 4 Information Screen - Ename Archaeological Museum. Source: http://visualdimension.be/heritage/exhibitions/pages/pam_ename.html, last accessed in 12 March 2019



Figure 2. 5 Outdoor Kiosk, Abbey Site of Ename. Source: http://visualdimension.be/heritage/exhibitions/pages/pam_ename.html, last accessed in 12 March 2019

- **Virtual reality (VR), augmented reality (AR) and mixed (VR+AR) systems**

Virtual reality is a computer-aided technology that shifts human perception from a real plane to a virtual plane. People perceive the world with their senses, and virtual reality misleads these senses by combining them with the perception of reality in a computer environment and provides a virtual environment almost as real. In other words, VR is a simulation of a realistic environment designed in the computer environment (Burdea & Coiffet, 2003, p. 2).

VR technology involves real-time interactivity, namely, VR environment responses almost all reactions and commands coming from the person. The concepts

of interaction, immersion, and imagination are thought to be the basic components of VR technology (Burdea & Coiffet, 2003, p. 4).

This technology, which has been studied for almost thirty years, is a method used in the presentation of cultural heritage for nearly twenty years with the aim of presenting existing and lost components of a site by its abilities of visualization and reconstruction. VR technology has significant potential on the process of protecting cultural heritage sites as Fabio Bruno stated that "VR technology can be applied to the world of cultural heritage as a vessel for preservation, reconstruction, documentation, research and promotion" (Bruno et al., 2009, p. 1).

Augmented reality is a combination of virtual or imaginary reality with the real world. In other words, it is a method that combines a computer-generated or pre-generated image on a user's view of the real world. Augmented reality can be considered as a step between virtual reality and the real world (Figure 2. 6). With this side, it can be considered as a more suitable method for on-site presentation as it allows to present an existing cultural heritage area by combining it with its lost elements (Figure 2. 7).

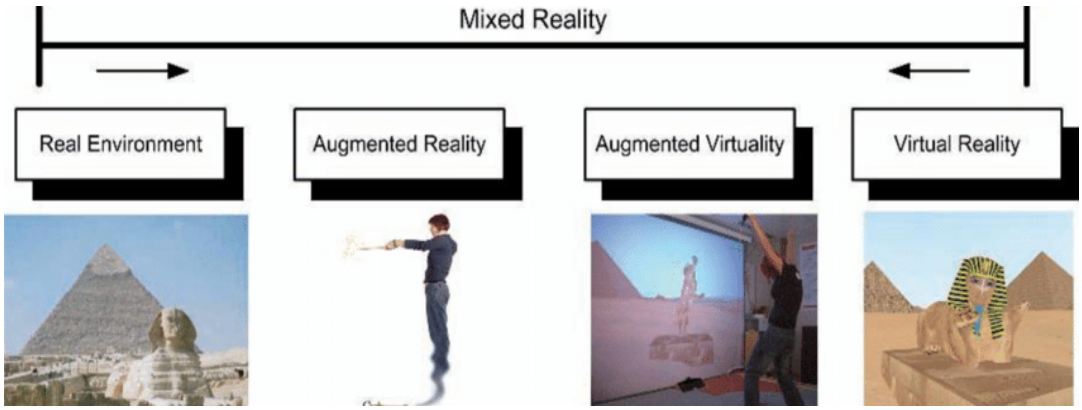


Figure 2. 6 Reality-Virtuality Continuums, (Gutiérrez A., Vexo, & Thalmann, 2008)

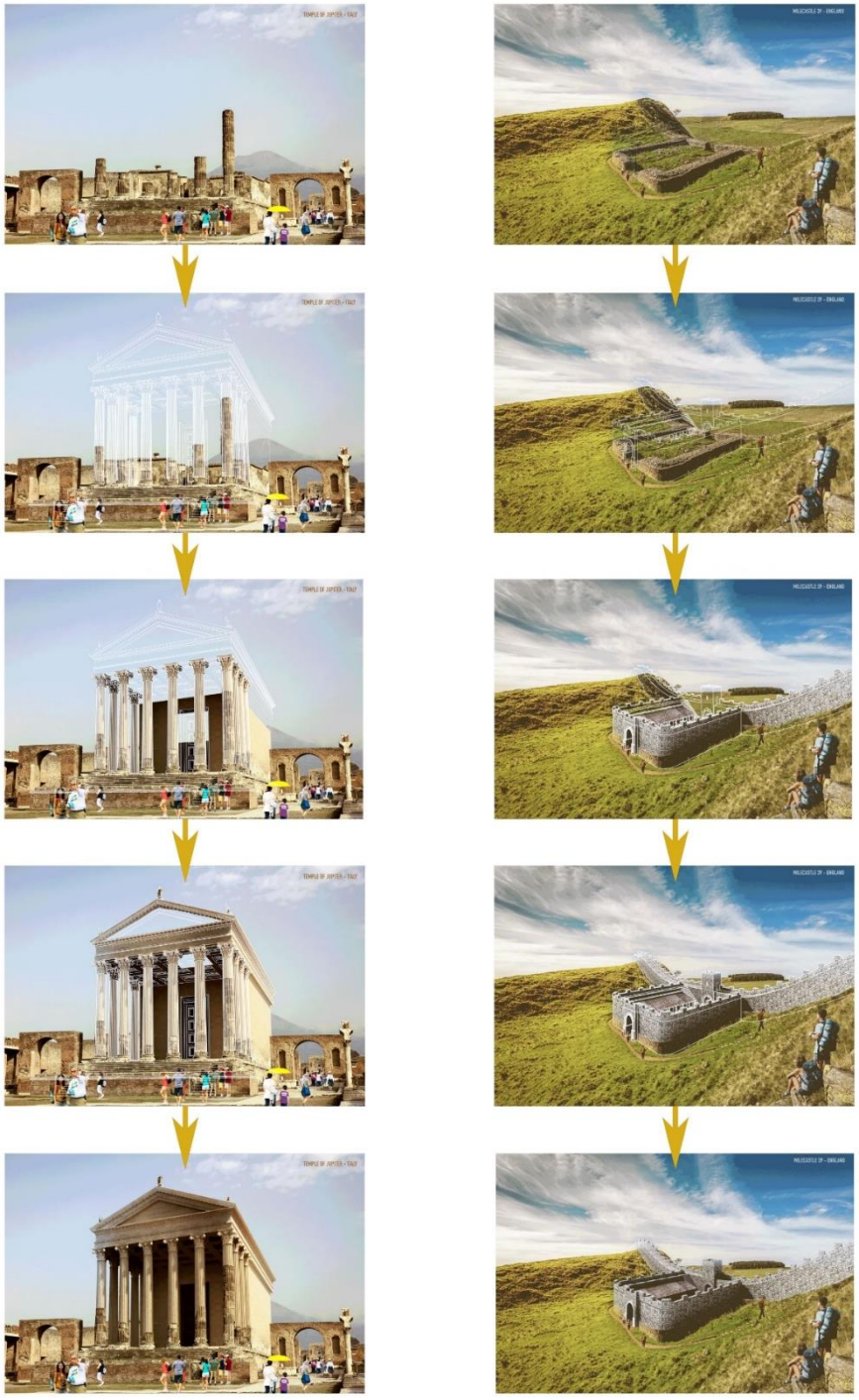


Figure 2. 7 Reanimating the Invisible Components of the Temple of Jupiter-Italy and Milecastle-England[10]

[10] Based on ".gifs" obtained from https://weburbanist.com/2018/04/03/reconstructing-ruins-gifs-reanimate-7-ancient-architectural-wonders/, last accessed in 12 December 2018

The approach in the presentation of the cultural heritage created by methods such as virtual or augmented reality is illustrated visually (Figure 2. 8).

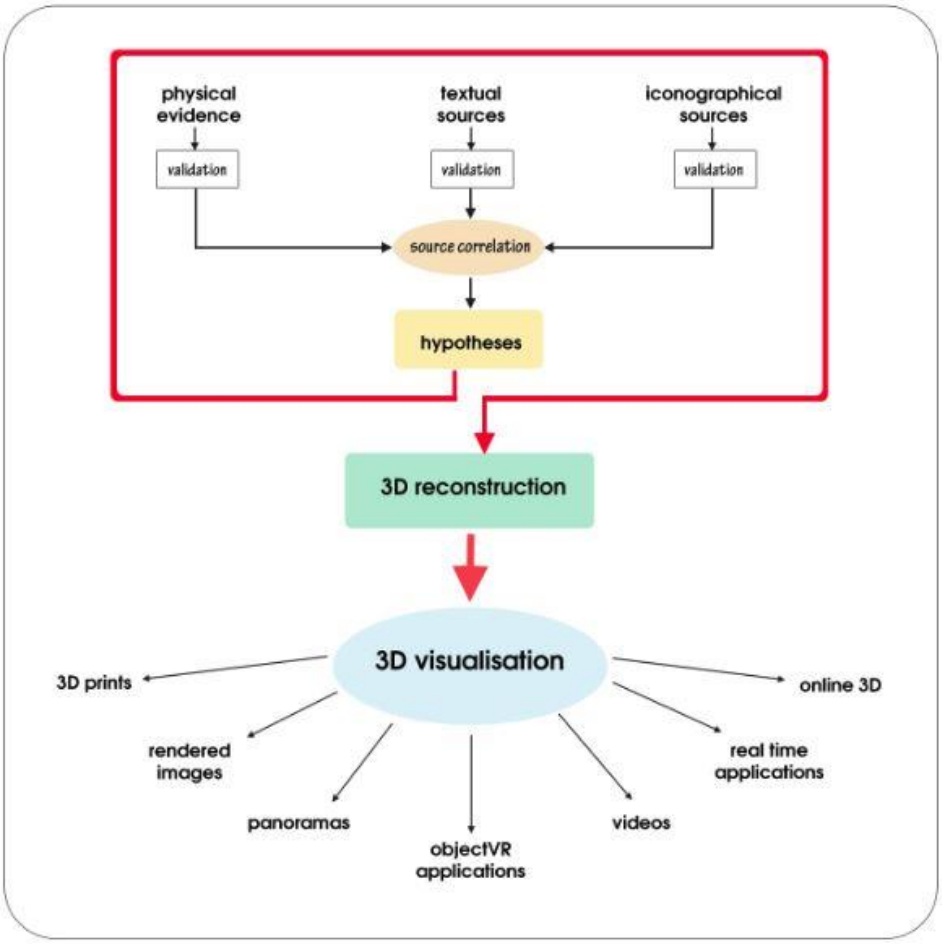


Figure 2. 8 Methodology diagram of handling VR, AR and MR technologies on cultural heritage sites. Source: http://visualdimension.be/heritage/methodology.html, last accessed in 14 March 2019 [11]

If the use of these methods in the presentation of cultural heritage will be discussed, the first example observed in this area is **AR sign-boards (AR stations)**. This tool creates a completed image from a certain angle by placing a pre-prepared

[11] Prepared by Ename Archaeological Museum and Visual Dimension Corp. based on Ename TimeLine, TimeFrame and TimeScope projects.

image in a pre-determined point of the field with the aim of a complete understanding of a heritage place (Figure 2. 9).

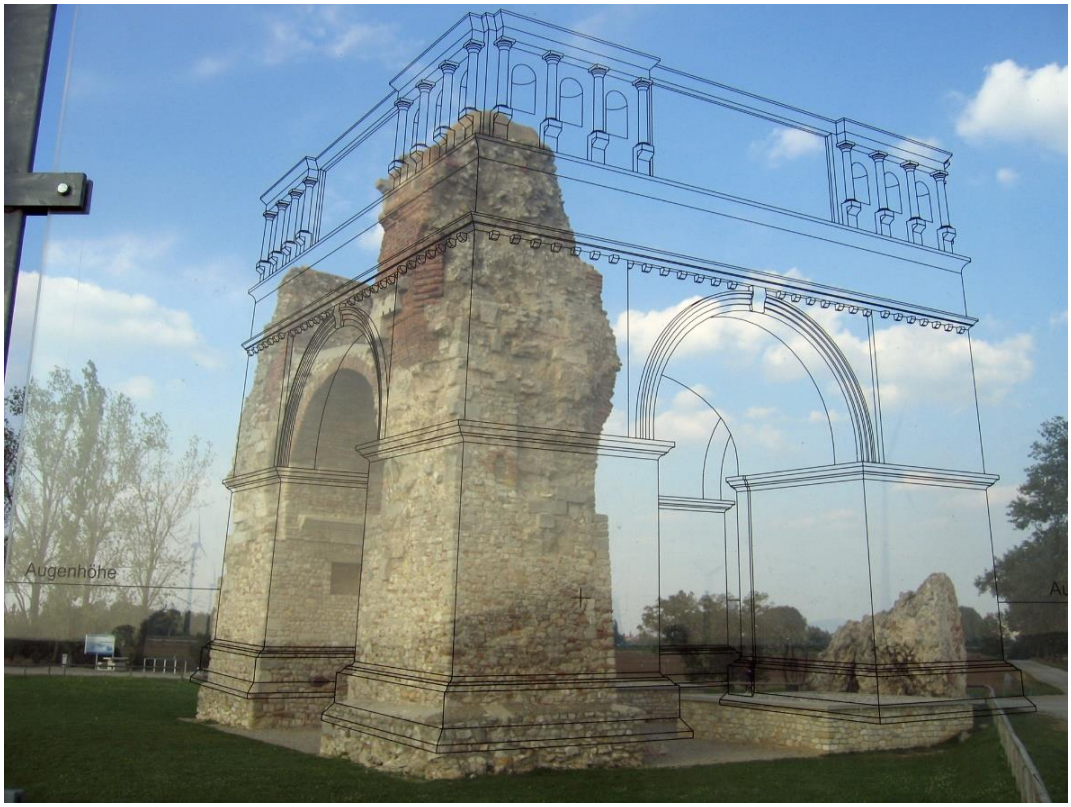


Figure 2. 9 Reanimating the Heathen's Gate with Augmented Reality Signboard, Open Air Museum Petronell. Source: https://weburbanist.com/2018/04/03/reconstructing-ruins-gifs-reanimate-7-ancient-architectural-wonders/, last accessed in 18 January 2019

The advantages and disadvantages of augmented sign-boards are as follows;

Table 2. 8 Advantages and Disadvantages of Augmented Sign-boards

Advantages	**Disadvantages**
- very effective for of interpretation - appeal to a wide range of visitors - easily updateable - not destructive or harmful - no need to surveillance - able to make concealed or lost objects/artifacts visible - both initial and maintenance cost is low - visitors can use easily	- can damage the landscape visually

In addition to the augmented sign-boards, mobile applications that can now be used on smartphones or tablets that are easily accessible for each individual can also be used as a means of presenting a cultural heritage site by augmented reality method.

This kind of mobile application can be used to guide the visitor and give information about some points of interest. The GeoTravel application available on the app store is one of the examples of this. In GeoTravel, users can get information about their surroundings from a mobile camera view (Figure 2. 10).



Figure 2. 10 GeoTravel Application as a Tour Guide. Source: https://www.youtube.com/watch?v=DpmAyen4sv0, last accessed in 12 March 2019

In addition to guiding visitors or users, such practices may also demonstrate the reconstruction of a concealed cultural heritage in the light of available information (Figure 2. 11, Figure 2. 12). In addition, animations that can be quite effective for interpretation can also be presented to visitors via augmented mobile applications (Figure 2. 13).



Figure 2. 11 Mobile AR Application Prepared for the Archaeological Site of Segesta. Source: http://www.noreal.it/site2011/, last accessed in 12 March 2019

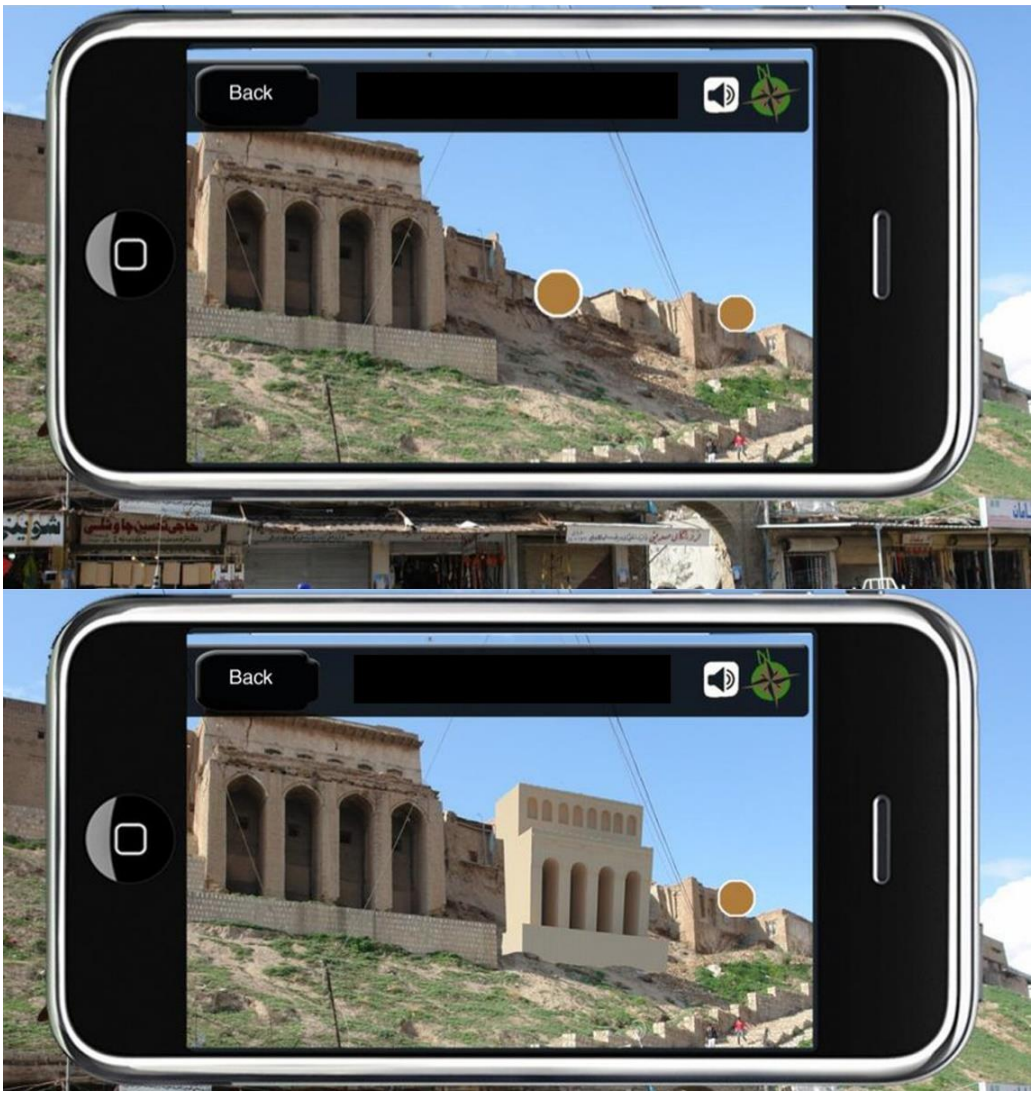


Figure 2. 12 Reconstructed part of Erbil Citadel on an AR mobile Application (Mohammad-Emin, 2010)



Figure 2. 13 A real and augmented view of St. Alban Quarter's Tour (lifeClipperProject, 2005)

The advantages and disadvantages of AR mobile applications are as follows;

Table 2. 9 Advantages and Disadvantages of Augmented Reality Mobile Applications

Advantages	**Disadvantages**
- very effective for of interpretation - appeal to a wide range of visitors - easily updateable - encourages interaction - not destructive or harmful - able to make concealed or lost objects/artifacts visible - able to animate a certain section of everyday life practice	- relatively expensive initial cost - depended to electronic devices - might be hard to use for some visitors - requires extra detailed preliminary study

The interactive computer exhibits aim to display works from one or more cultural heritage sites that are often disconnected from the context and are organized according to a specific theme. With this method, the works can be presented in a virtual twin of an existing museum (Kaman - Kalehöyük Archaeological Museum, Figure 2. 14), or they can be presented directly in a virtual reality environment (British Museum - The Museum of the World, Figure 2. 15). This method enables people with different age groups and different interests to experience virtual exhibits according to their preferences. In addition, many museums offer educational and entertaining

alternatives for children and strengthen the relations of new generations with the historical and cultural heritage (Figure 2. 16).



Figure 2. 14 Interactive Computer Exhibit of Kaman - Kalehöyük Archaeological Museum. Source: http://www.kalehoyukarkeolojimuzesi.gov.tr/kamanWeb/kaman_web.html, last accessed in 17 April 2019

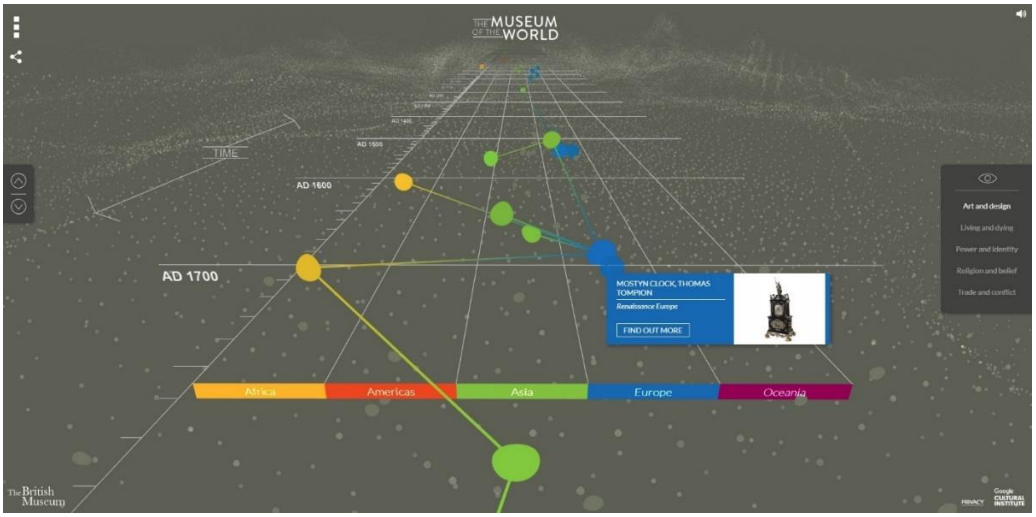


Figure 2. 15 Interactive Computer Exhibit of British Museum - The Museum of the World. Source: https://britishmuseum.withgoogle.com/, last accessed in 10 April 2019

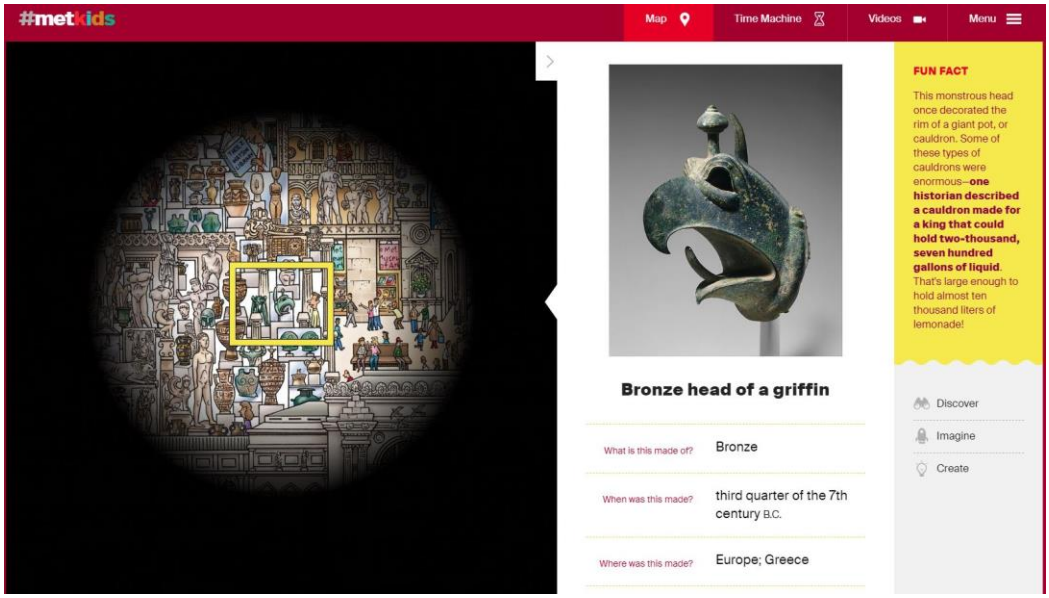


Figure 2. 16 Interactive Computer Exhibit of MET Museum – "metkids". Source: https://www.metmuseum.org/art/online-features/metkids/explore/255367/Bronze-head-of-a-griffin, last accessed in 12 March 2019

The advantages and disadvantages of interactive computer exhibits are as follows;

Table 2. 10 Advantages and Disadvantages of Interactive Computer Exhibits

Advantages	**Disadvantages**
- very effective for of interpretation - appeal to a wide range of visitors - easily updateable - not destructive or harmful - can be diversified according to different groups of visitors (children - adult) - able to make concealed or lost objects/artifacts visible - both initial and maintenance cost is low - visitors can use easily	- depended to electronic devices - disconnected from the context and setting - requires extra detailed preliminary study

Virtual reality tours are a method that allows a cultural heritage site to be visited via the web or any desktop and prepared with 3D photographs, panoramic photos or reconstruction models rendered using computer-based programs. This method has the potential to create an effective presentation process by guiding the

topics such as its history, purpose of use, as well as providing visual information about the current and original state of the field (Figure 2. 17). In some of these applications, visitors can experience life as the subject of certain life practices, such as pottery or hunting, as well as having the chance to observe such practices as the third person.



Figure 2. 17 Web Virtual Reality Tours of Acropolis, Athens. Source: http://www.acropolisvirtualtour.gr/, last accessed in 10 March 2019, https://www.youtube.com/watch?v=y9zWmURQcyc, last accessed in 10 March 2019

The advantages and disadvantages of VR tours are as follows;

Table 2. 11 Advantages and Disadvantages of Virtual Reality Tours

Advantages	**Disadvantages**
- very effective for of interpretation - appeal to a wide range of visitors - easily updateable - not destructive or harmful - can be diversified according to different groups of visitors (children - adult) - able to make concealed or lost objects/artifacts visible - able to animate a certain section of everyday life practice - visitors can use easily	- depended to expensive electronic devices - disconnected from the context and setting - requires extra detailed preliminary study

Pre-created 360° VR is an on-site method focuses on visualizing a daily life, a specific historical event in the site presented and/or lost or concealed artifacts, which have not been observed by eye in the site. This technique can be experienced using VR glasses that are becoming increasingly popular (Figure 2. 18).

In addition to reinforcing the themes, the presentation also adds more understandable and fun air. It is one of the most effective presentation techniques that do not involve any intervention that is damaging to the site or irreversible. There are examples of this technique that are enriched with sensory actions such as hearing, smell, etc.

Since some areas are more suitable for combining this method with augmented reality technique, named as mixed-reality and consists of both virtual and augmented reality techniques, and artificial intelligence at sometimes. [12]

[12] This method is currently only available with the Microsoft Hololens tool, where VR, AR, and artificial intelligence are integrated. For more information, visit: https://www.microsoft.com/en-us/hololens, https://www.youtube.com/watch?v=pPMkfhCfjVQ



Figure 2. 18 "Bath ArchTour", Caesarea Israel. Source: http://www.arch-tour.com/index-he.html, last accessed in 10 March 2019

The advantages and disadvantages of Pre-created 360° VR are as follows;

Table 2. 12 Advantages and Disadvantages of Pre-created 360°Virtual Reality

Advantages	**Disadvantages**
- very effective for of interpretation - appeal to a wide range of visitors - easily updateable - not destructive or harmful - can be diversified according to different groups of visitors (children - adult) - able to make concealed or lost objects/artifacts visible - able to animate a certain section of everyday life practice	- relatively expensive initial, maintenance and operational cost - depended to expensive electronic devices - can isolate visitors from each other - might be hard to use for some visitors - requires extra detailed preliminary study

- **Animatronics, 3D projected holograms**

Animatronics and 3d projected holograms are used for rendering mobile or stationary objects prepared in a computer environment with devices emitting laser light. These methods make the objects expressed visible to the naked eye without any

3d glasses. In order to implement these methods, a very detailed preliminary study requires the creation of a controlled environment, especially in light of the site. With these methods, it is quite difficult and expensive to make objects over a certain size visible. For this reason, in the field of presentation of cultural heritage, small finds, small scale models or historical persons were focused on by these techniques (Figure 2. 19).



Figure 2. 19 Presentation of a small-scale model by Hologram from Neues Museum in Berlin (Gündüz Çetinkaya, 2019)

The advantages and disadvantages of animatronics and 3D projected holograms are as follows;

Table 2. 13 Advantages and Disadvantages of Animatronics and 3D Projected Holograms

Advantages	**Disadvantages**
- appeal to a wide range of visitors - not destructive or harmful - able to make concealed or lost objects/artifacts visible in a limited manner - able to animate a certain section of everyday life practice	- highly expensive initial, maintenance and operational cost - depended to expensive electronic devices - requires extra detailed preliminary study

The evaluation of the presentation tools and techniques described above by the criterion of mobility, location, ease of maintenance, ease of update, dependency to extra equipment or a trained person, initial cost, maintenance cost and ability to make a concealed visible are summarized in Figure 2. 20. The tools and techniques discussed were evaluated relative to each other. The criteria for mobility, location, and dependency on extra equipment or trained professionals are the attributes of these tools and are not open to a subjective point of view. However, other criteria were evaluated according to user or designer's experiences and numerical data.

The researches and evaluations made in this part of the study will help to understand and evaluate the case chosen, but also to provide a basis for the determinations and decisions in the process of eliminating the underlying problem that the thesis mainly focused on.

		mobility	location	easy to maintain	easy to update	depended to an extra equipment/ electronic device	depended to a professional/ trained person	initial cost	maintenance cost	ability to make hidden objects/artifacts visible
conventional / traditional	information sign-boards	im	is	yes	no	no	no	low	low	no
	graphic panels	im	is	yes	no	no	no	low	low	lt
	visitor centers	im	is	no	no	no	yes	high	high	no
	trained guides	-	is	no	yes	no	yes	low	rh	no
	audio - visual aids									
	presentations	im	is	yes	yes	yes	no	low	low	lt
	video plays	im	is	yes	no	yes	no	low	low	lt
	audio-guide	m	is	no	yes	yes	no	rh	rh	no
	printed metarials									
	brochure	m	is / es	yes	yes	no	no	low	low	lt
	guide maps	m	is	yes	yes	no	no	low	low	no
	publication, books etc.	m	is / es	yes	yes	no	no	low	low	lt
	exhibits	im	is	yes	no	no	no	rh	rh	no
	models	im	is	yes	no	no	no	rh	low	lt
	animation with wax figures/sculptures	im	is	no	no	no	no	high	rh	no
	indication by tracing	im	is	yes	yes	no	no	low	low	lt
contemporary / emerging	information screens, kiosks	im	is	no	yes	yes	no	rh	rh	lt
	VR (virtual reality) systems									
	interactive computer exhibits	m	is / es	no	yes	yes	no	rh	rh	yes
	desktop/web virtual reality / tours	m	is / es	no	yes	yes	no	rh	rh	yes
	pre-created 360° VR environment	m	is	no	yes	yes	no	high	high	yes
	AR (augmented reality) systems									
	AR stations	im	is	yes	no	no	no	low	low	lt
	mobile aplications	m	is	no	yes	yes	no	low	low	yes
	mixed reality (VR + AR + AI) demonstrations	m	is	no	yes	yes	no	high	high	yes
	animatronics, holograms	im	is	no	no	yes	yes	high	high	lt

immobile (im) mobile (m) — in-situ (is) ex-situ (es) — relatively high (rh) — limited (lt)

Figure 2. 20 Evaluation of Listed Presentation and Interpretation Techniques and Tools (Gündüz Çetinkaya, 2019)

CHAPTER 3

THE CASE: ZEUGMA

This chapter aims to investigate and examine the current situation of Zeugma, which is an archaeological area that has been concealed, as an area to be presented. Therefore, it is important and necessary to understand all the components of the site to designate an accurate and effectual presentation plan for a cultural heritage site. Accordingly, Zeugma archaeological site tend to be studied in terms of its location, boundaries, natural characteristics, historical background, excavation, research and conservation history, natural and geographical aspects, access, and physical environment through site surveys and literature research.

3.1. Location, Boundaries and Natural Characteristics of Zeugma

3.1.1. Location

Zeugma is a historical settlement which is located on the western bank of the Euphrates (Fırat River) and, 9 km east of Nizip, a district of Gaziantep.

This ancient settlement sits at the southeastern part of Turkey (Figure 3. 1). It is in the center of the region named as “the fertile crescent” or “upper Mesopotamia” (Sertok, 2001).

The river Euphrates (Fırat River) as a border of Mesopotamia curves southwest where the city of is Zeugma located. This position situates Zeugma on the Euphrates’ (Fırat River) closest point to the Mediterranean Sea, specifically to the Gulf of Iskenderun which is one of the most important commercial ports of the Mediterranean region (Kennedy, 1998, p. 11). This advantageous positioning as well as the fertile land surrounding the area led to the selection of this particular location (Kennedy, 1998, p. 27) (Figure 3. 4).



Figure 3. 1 Location of Zeugma in Turkey (Gündüz Çetinkaya, 2011)



Figure 3. 2 Location of Zeugma in Gaziantep (Gündüz Çetinkaya, 2011)

Moreover, the topography of the area and the river provides a secure and elevated position with the opportunity of being aware of the possible threats (Early, 2003, p. 11). Finally, experts and researchers interested in the region the location of Zeugma to be the most convenient position to cross the river based on the distance between the two sides, depth, and discharge of the river.

According to Pliny the Elder (Gaius Plinius Secundus), Zeugma was located on the boundary of four vast territories: Cilicia, Cappadocia, Cataonia, and Armenia (Kennedy, 1998, p.157). This implies that the settlement is also placed in a politically strategic position.

Location of Zeugma makes it considered among the most important settlement areas both under the Kingdom of Commagene and the Roman Empire. Zeugma connects east and west or two different geographies, Syria and Mesopotamia. It is not only a physical link but also the passage of commercial and cultural entities that it was located at the junction of ancient roads (Wagner, 1976, p. 48) (Figure 3. 3). The word itself means "bridge-passage" or "bridge of boats" which reflects the city's geographical importance in antiquity (Kennedy, 1998, p. 20).

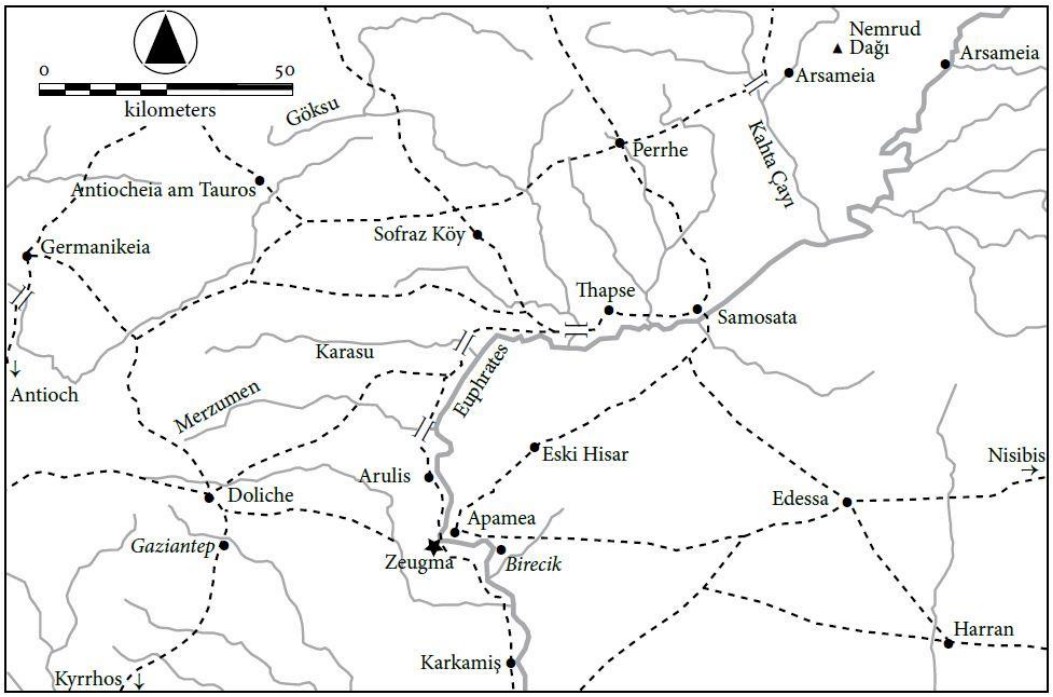


Figure 3. 3 Ancient roads and bridges in the vicinity of Zeugma (Aylward, 2013)

3.1.2. Boundaries

As Kennedy (1998) stated, there are three main indicators for identifying the limits of the settlement. These are locations of the cemeteries, the areas used for agricultural activities and the remains of the city walls (Karaca, 2008, p. 1) (Figure 3. 4).

Accordingly, the borderline of the settlements reaching the river can be assumed as the flood line of the river before the construction of the Birecik dam.

Moreover, Belkıs Hill is a precipitous hill that is almost impossible to build on, however, excavations revealed a temple on top of the hill. Therefore, the inclined parts of the hill may have just a linking path of the temple and the city (Kennedy, 1998, p. 33).

Furthermore, the information gathered from surface surveys and excavations state that there are mosaics, tiles, and other remains that showed the limits of the Zeugma reaches Bahçedere to northwest, south necropolis to southwest, Kırkbayır Cistern and east necropolis to the east compassing the Belkıs Village. Moreover, these studies state that the city of Zeugma had two different city walls, one from the Hellenistic period and another from the Roman period. Jörg Wagner (1976, p.95), who conducted extensive surface surveys in the 1970s, interpreted the walls extending from the northwest slope of Belkis Hill to Karatepe as Hellenistic Walls of the city. Regarding the Roman walls, Wagner (1976, p.77) mentions a fortification wall in Apamea and on the western slope of Tilmusa. The researches carried out in line with the results of the "stoneware surface density survey" handled within the scope of Zeugma Archaeology Project provided concrete data on the routes through which Zeugma walls pass, thus, the Hellenistic city borders and Roman period fortification walls of the city has become more understandable (Görkay, 2017, p. 151) (Figure 3. 5, Figure 3. 6, Figure 3. 7).

When Zeugma's twin town Apamea, was excavated and mud-brick city walls were found by Abadie-Reynal's excavation team (Reynal & Ergeç, 1996, p. 419). Figure 3. 8 illustrates the approximate borders of Apamea.

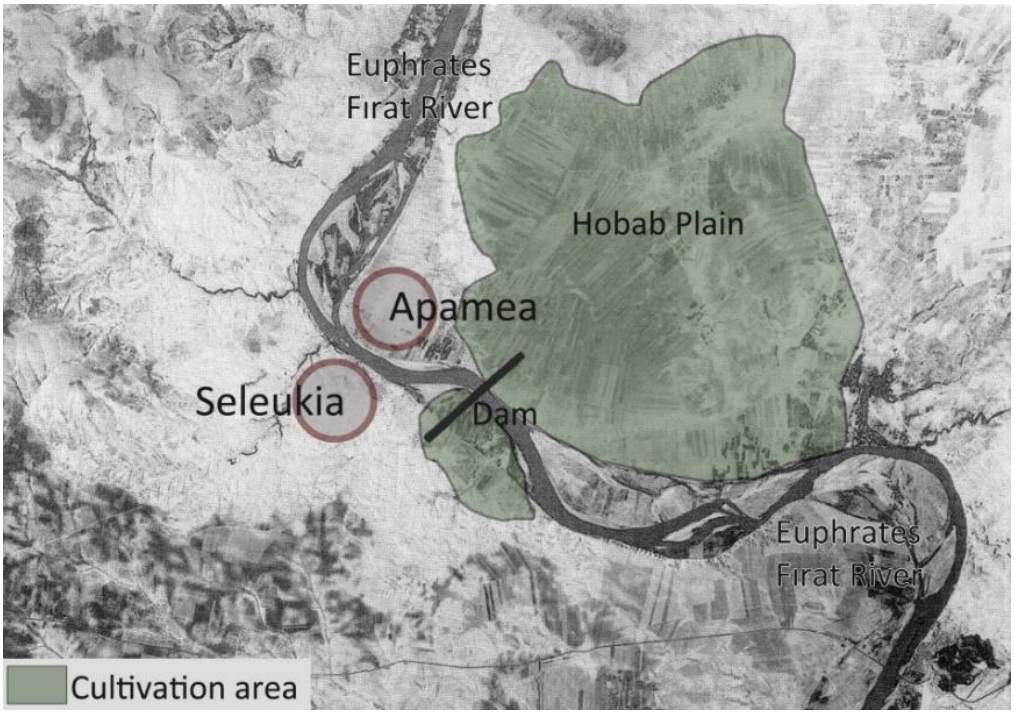


Figure 3. 4 Relation between the cultivation areas and location of the settlements (Gündüz Çetinkaya, 2011)



Figure 3. 5 Wall Remains Bahçedere (Görkay, 2012, p.278)

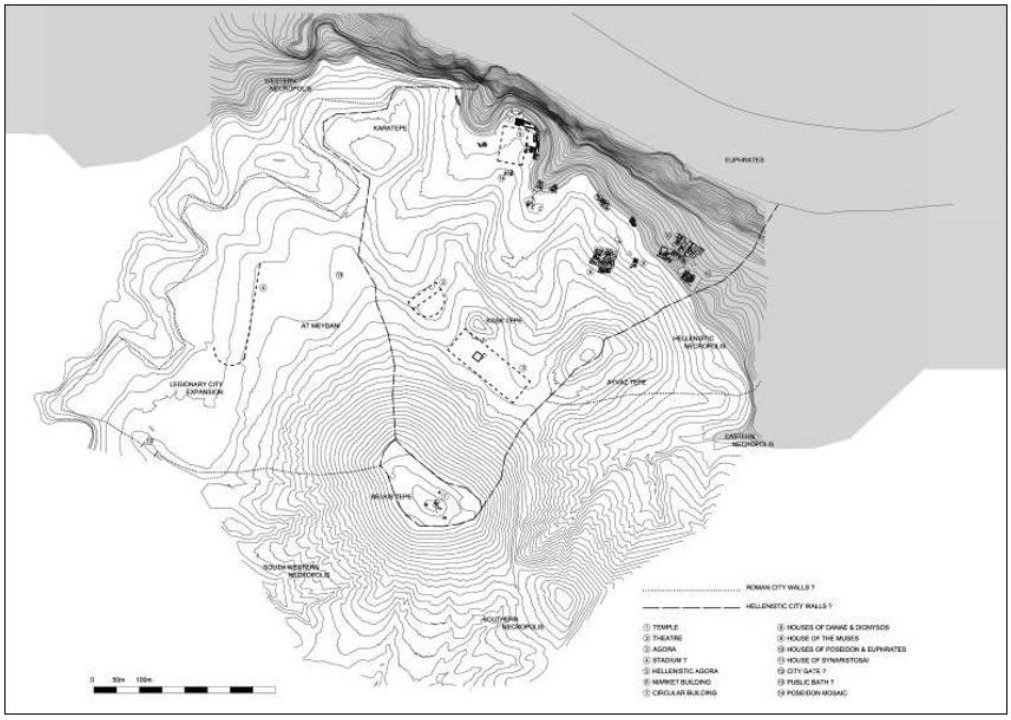


Figure 3. 6 Zeugma City Plan (drawn by D. Z. Özcan & D. Taşkın – Zeugma Archaeological Project, 2011)

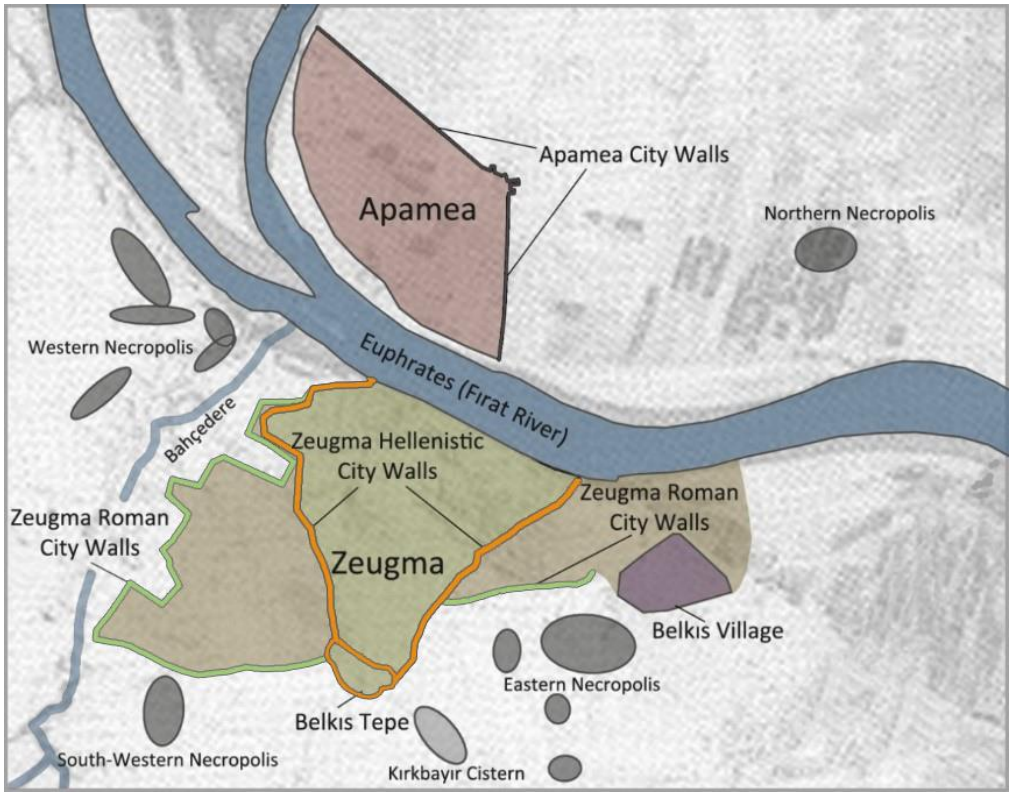


Figure 3. 7 Limits of the Cities Zeugma and Apamea (Gündüz Çetinkaya, 2011)

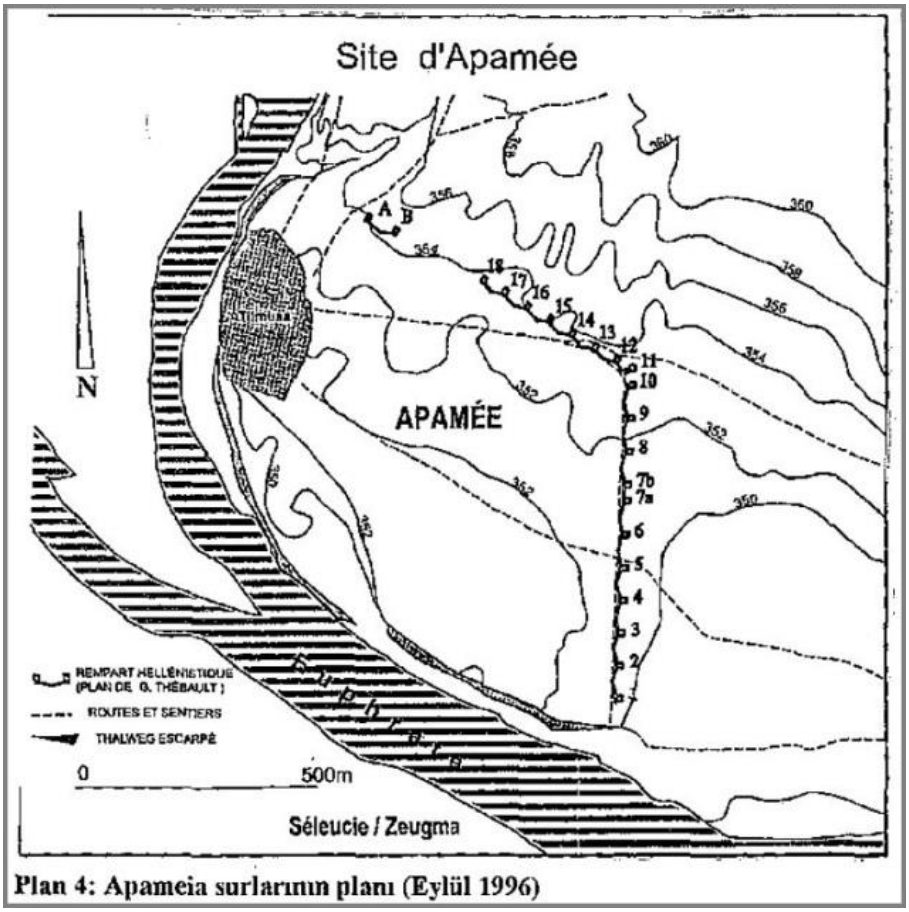


Figure 3. 8 Limits of the Apamea according to studies of Abadie-Reynal in 1996 (Excavation Reports, 1996)

3.1.3. Natural Characteristics

Euphrates Valley which is located in the Middle Euphrates region was formed by the river bed, flow attritions, and natural fault sediments (Önal, 2006, p.12). Euphrates (Fırat) River splits into two streans as a result of the formation of huge sand islands - formed by gravels and alluviums carried by the river- before reaching to Zeugma and Apamea. Besides the river, Bahçedere (Garden Valley), located in the northwest of the Zeugma, creates a narrow valley (Figure 3. 9).

The topography of Zeugma can be explained as an undulating plain rising from the river level to the Belkıs Tepe (Belkıs Hill) (Figure 3. 10). This character of topography gives the Zeugma a wide viewing angle. In the case of Apamea, this city is located in a part of the Hobab Plain, close to the river, with flatter and lower

topography compared to Zeugma. Historical sources about the area, mention a seasonal flood of the river to the Hobab Plain while also adding that the city Apamea is above this flood line. Out of all these, it is hard to know the original ancient topography of the site because of colluvium masking the area by landslides related with the climatic conditions and earthquakes which were hidden and rounded the ancient situation of the topography (Early, 2003, p. 11).

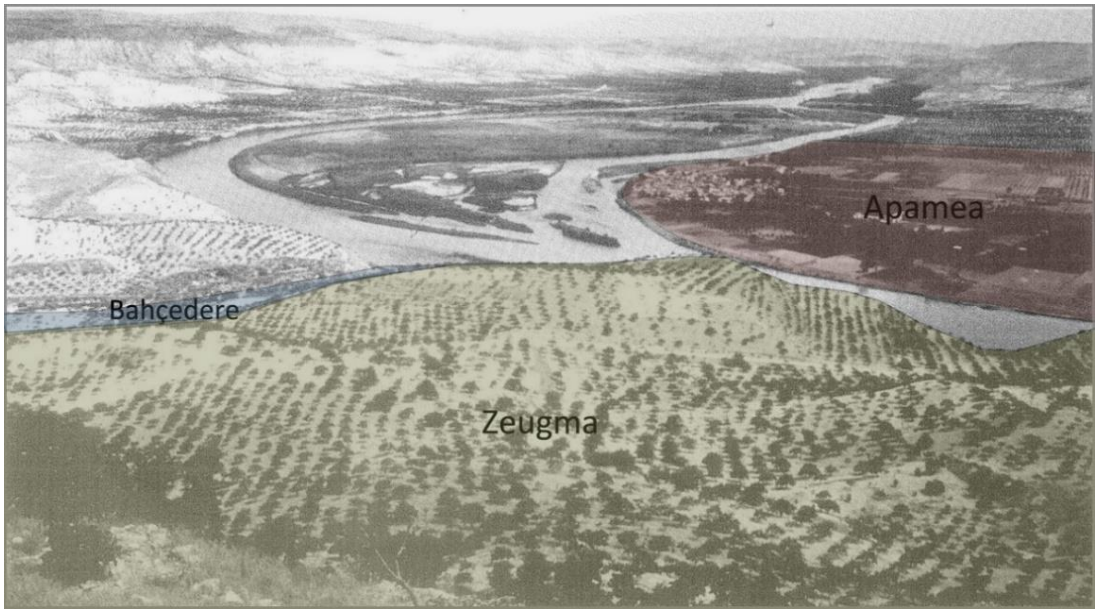


Figure 3. 9 Zeugma and Apamea with Euphrates (Fırat) River and Bahçedere (Gündüz Çetinkaya, 2011)

Both Zeugma and Apamea are between 37-38 degrees of longitude and 36-38 degrees of latitude and the altitude of the area is +350m (Euphrates - Fırat River) and +570m (Belkıs Hill). Accordingly, these two cities are located in the intersection of the continental and Mediterranean climate. However, scholars noted that the construction of dams in the region likely increased the amount of humidity and precipitation (Ayata, 2003, p. 77).

Today, in this part of the Euphrates (Fırat) Valley, pistachio trees, vineyards, plum trees, apricot trees, date palms as fruits and eggplant, green pepper as a vegetable are grown. Moreover, indigenous Euphrates poplar (Fırat Kavağı) is a dominant plant cover. In ancient times, it is known that wine grapes were exported to Persia and India.

In addition to grapes, plums, figs, and onions are notable export commodities (Ertan & Ertan, 2000, p. 35).



Figure 3. 10 Topography of Zeugma I (Başgelen, 2000)

3.2. History of Zeugma

3.2.1. Historical Background of Zeugma

The information related to the historical background of the Zeugma is sufficient to identify a clear timeline for the city. The main sources on the subject are the remains that surfaced by excavations and ancient written sources. This study provides a compilation of the information gathered from written sources as presented in the literature.

There is evidence of the presence of hunter-gatherers during the Paleolithic period in the middle Euphrates (Fırat) Valley, the area where Zeugma and Apamea

are located and its surroundings. In addition, there are many settlements from the Neolithic period (B.C. 9000 – B.C. 5000) when sedentary life first started (Algaze & Hammer & Parker, 2012, p. 12).

Zeugma has a convenient location to cross the Euphrates (Fırat River) and this feature of Zeugma was already discovered at prehistoric times (3000-1200 B.C.). The remains of the city demonstrate signs of settlement based on trade and exchange between the two shores of the Euphrates (Fırat River). Tilbeş Tumulus, Tilmusa Tumulus, Tilobur Tumulus at the eastern shore and Horum Höyük, a bronze age cemetery at the western shore of the river are the examples of that periods' settlements (Sertok & Ergeç, 1999, p. 97). Moreover, a basalt fragment dating back to the iron age was found in Belkıs Hill (Görkay, 2011, p.42). Therefore, it can be inferred that the location of Seleukeia was home to other settlements in much earlier times. In the meantime, the region that is home to Zeugma- was under the reign of the Acadian Empire between late 3000 B.C. and early 1500 B.C. Following the Acadian Empire, Hittites, Assyrians, Medians, and Persians ruled the region in chronological order. Persian dominance continued until Alexander the Great crossed the Euphrates (Fırat River) and Macedonian authority started in the region.

On the other hand, parts of the Euphrates (Fırat River) that are conductive to crossing the river gained outstanding importance in terms of the commerce between Anatolia and Mesopotamia. Eventually, the city "Seleukeia ad Euphrates" or colloquially called Zeugma was founded at 300-299 B.C. by the General Seleukos Nikator -commander of Alexander the Great- in order to control one of the most important passages on the Euphrates (Fırat River) (Kennedy, 1998, p.12). Following the foundation of Zeugma, Apameia –the twin town of the Zeugma- was established after General Seleukos' Persian wife "Apama" (Grainger, 1990, p.75). These twin towns are like two gates opening to two different geographies; Seleukeia to the west (Anatolia) and Apama to the east (Mesopotamia and Syria). Starting from the 1st century A.D., these twin towns named were referred to as Zeugma which means "passage – bridge" in Greek (Pliny the Elder, The Natural History, 5.82.). It is

estimated that the city was built as a consequence of the policies of "Hellenization" which aimed to spread the Greek culture and model among the local people of the east (Görkay, 2015, p.2). In Seleukeia (Zeugma), founded by Seleucid Nikator I, the commander of Alexander the Great, Greek people brought from Macedonia were settled, while Sami people were settled in Apamea (Görkay, 2015, p.14). Görkay (2015) notes that the main source of this organization was marriages between Macedonian men and the noble daughters of the local people and thereby the spread of Greek culture in the region was established.

Zeugma was at the forefront compared to Apamea that the reason behind the foundation of Apamea depends on a security measure aiming to keep savage tribes far from the Zeugma besides the east-west synthesis policies of "Hellenization". In this Seleucid period, Zeugma witnessed the wedding of a king. In 221-222 B.C. Seleucid king Antiochus III and Laodice who was the sister of the Mithridates, king of Cappadocia, got married (Polybius 5.4.3.1). Zeugma experienced not only weddings but also executions. In 69 B.C., Armenian King Tigranes I got Cleopatra Selene killed before leaving the Zeugma. [13]

All of this historical analysis indicates that Zeugma was a city where east and west were engaged. Aylward (2015) stated that Zeugma was forever between large cultural forces (east-west), but never completely part of anyone. The most prominent proof of this thought is the uncovering of the Commagene pantheon and the ruling cult of archaeological finds, which were formed by the unification and fusion of the cults of Helen and Persian gods (*syncretic*[14]) (Görkay, 2015, p. 15).

The city grew larger with construction activities and gained remarkable importance in terms of commerce and military. Roman consul Pompeius granted the city Zeugma to Antiocos I, the King of the Commagene (Appian Mith. 16. 114.). Presence Antiokhos-Herakles handshake stele, Antiokhos-Apollo handshake stele as

[13] Diodorus Siculus 31-27a 161 B.C. Sherman (LCL).
[14] A hybrid cult that formed by the combination of the cults and characteristics of multiple pagan deities.

well as others built for religious and propaganda purposes, shows that Zeugma is a city of Commagene Kingdom (Önal, 2006, p. 28). Thus, Zeugma, with Samsat, became one of the two important cities of the Kingdom of Commagene as the only crossing points of the Euphrates (Fırat River) (Figure 3. 8).

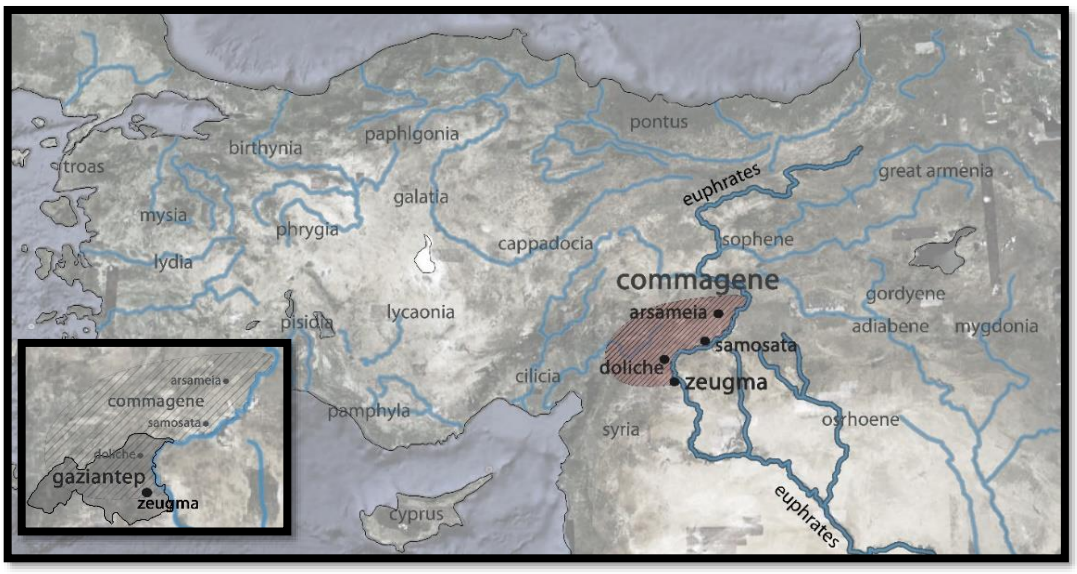


Figure 3. 11 Zeugma as a city of Kingdom of Commagene (Gündüz Çetinkaya, 2011)

Zeugma, which was located in the Kyrrhestike Region during the Hellenistic period, passed on to the Roman Empire (17 A.D) under Roman Emperor Tiberius (Butcher, 2009, p. 81). Although the successors of the Commagene Kingdom ruled the city for a period, in 72 A.D the settlement became part of the Syrian province of the Roman Empire thereby ending the role of the members of the Commagene royal family in the city administration (Görkay, 2015, p.15). In this period, when Zeugma was exclusively under the rule of the Roman Empire, it became prestigious demonstration of the power of Roman Empire to the Parthians across the Euphrates, rather than a simple Roman headquarters city built on Hellenistic military identity (Görkay, 2017, p. 152). At the same time that the importance of Zeugma to the Roman Empire was rising, Legio X Fretensis in 18 A.D and Legio IIII Scythica in 66 A.D were deployed in Zeugma and Zeugma started to become **a legion city** (Speidel, 2012, p. 605).

The Legion City

The fact that there were various legions in Zeugma and that the city gained a military identity after the deployment of the legions was proved by both historical sources and the excavated remains found in the settlement. Many legion-stamped roof tiles, Latin inscriptions, and military equipment were uncovered at the hippodrome area on the west side of the Belkis Hill (Hartmann & Speidel, 2013, p.385). In addition, graffiti and engravings on the wall frescoes of Zeugma residences are considered as traces that indicate that military culture had penetrated daily life in Zeugma (Görkay, 2017, p. 156).

Scyhtica IV, one of the most important legions of the Roman Empire, is thought to have taken its name after the great victory against the Scythia and Bastarnea tribes during Augustus (Campbell, 1999, p.99). Scyhtica IV won victories for the name of Roman Empire in many wars afterwards as well (Speidel, 1998, p. 165). This invincible legion was permanently relocated to Zeugma after the defeat of the Jewish rebellion in 66 A. D (Wagner, 1976, p.522). As a unit deployed in Zeugma, a border city, the legion took part in almost all wars between the Roman Empire and the Parthians (Albustanlıoğlu, 2015, p.140).

Researches and uncovered remains show that in addition to Legio IIII Scyhtica, other legions and various units affiliated with them were also involved in Zeugma. These legions and units included: *"Legio I Adiutrix, Legio I Italica, Legio II Adiutrix, Legio III Augusta, Legio IIII (Flavia), Legio VII Cpf, Legio X Gemina, Legio XIIII (Gemina), Cohors milliaria Maurorum, Cohors I Milliaria Thracum and Equites scutarii Aureliaci"* (Speidel, 2012, p. 611).

Roman emperors Augustus and Tiberius prioritized the construction activities of the empire in a way that was commensurate with its size and splendor. For this purpose, the military units scattered in various positions of the empire were appointed as the main source of labor in the construction activities of the cities (Albustanlıoğlu,

2015, p. 136). In light of this information, it is reasonable to conclude that Zeugma was a large and developed settlement.

The years between 98 and 211 A.D. –under the Roman Empire- were the most glorious times of Zeugma as an important military border city. In addition, the social structure of the city changed and diversified over this period. Different cultures and religions met in Zeugma. Moreover, many important craftsmen lived in Zeugma and left outstanding examples of mosaics, sculptures, mural paintings and numerous other works of art. There was a sizable prosperous and intellectual upper and upper-middle class population in the city at this flourishing period of Zeugma. At its highest, Zeugma was geographically central to his region. As Wagner (1976) points out, Strabo and Plinius have also dealt Zeugma as the center of the Region (Figure 3. 12, Figure 3. 13).

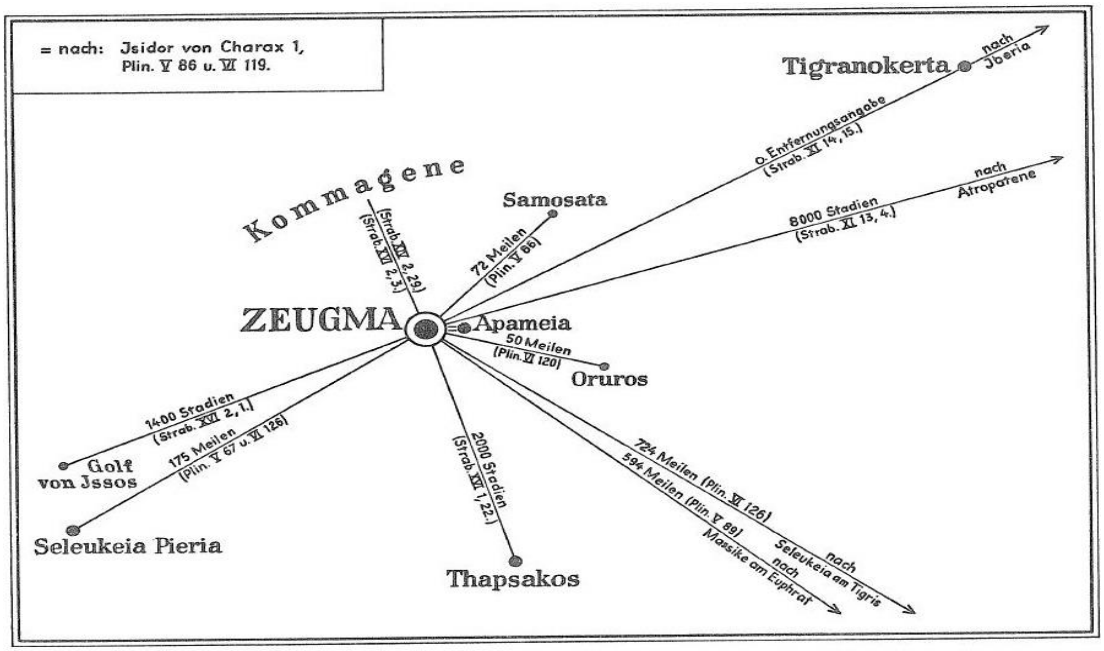


Figure 3. 12 Zeugma's Position According to Wagner (Wagner, 1976)



Figure 3. 13 Zeugma on the Tabula Peutingeriana, the Roman Map of Roads

The Evolution of the Settlement

Studies conducted before and during the rescue excavations concluded that the city of Zeugma was enlarged around a Hellenistic settlement (Aylward, 2013, p.21). Algaze, Kennedy and Abadie-Reynal found support for the claim that the Hellenistic settlement was located between the Euphrates River and the southeast of Bahce Dere, which was suggested by Wagner in her 1970s study (Figure 3. 14).

After the legio Scythica IV came to Zeugma in the 60s A.D, the settlement began to expand. Being a Roman city, Zeugma was developing and the twin city Apamea started to lose its importance (Aylward, 2013, p.22) (Figure 3. 15).

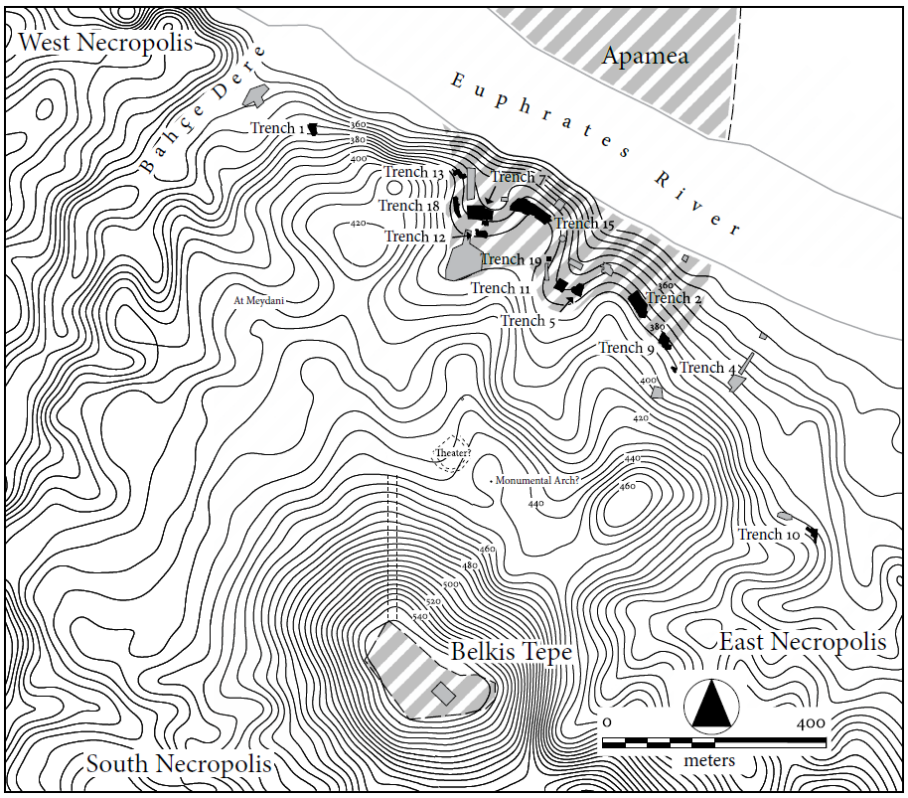


Figure 3. 14 The Hellenistic Zeugma (Aylward, 2013, p.18)

The Sassanid attack that took place in 252-253 AD (Kennedy, 1998, p.239) led to an outflow of residents, and the settlement area of the city shrunk to cover the Euphrates River shores and a part of Apamea, and the abandoned structures gradually began to be buried under the ground (Aylward, 2013, p.22) (Figure 3. 16).

384 years later, in 640 A.D Arabs conquered the city with the goal of extending their territory and expanding the spread of Islam. Following these developments, Zeugma lost its importance in terms of commerce and Birecik became the main focus of transportation (crossing the river) and commerce.

Beginning in 325 A.D., church records are the only source of written documentation about Zeugma. After 1048, we do not encounter the word Zeugma in any written documents. As a result, scholars have argued that Zeugma was abandoned around 1048(Önal, 2000, p.149) (Table 3. 1).

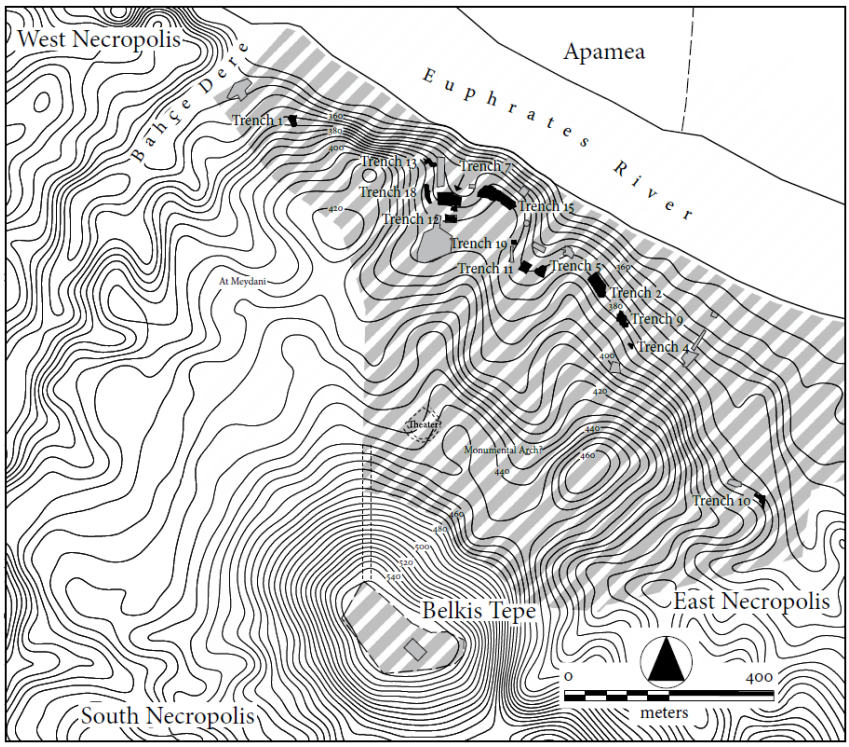


Figure 3. 15 The Roman Zeugma (Aylward, 2013, p.19)

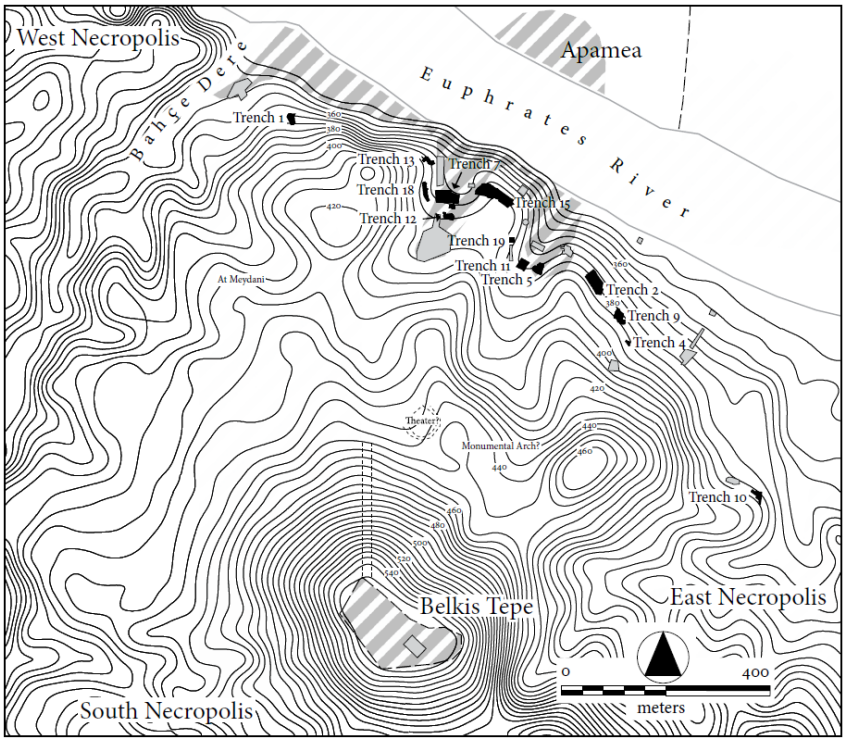


Figure 3. 16 The late-Roman Zeugma (Aylward, 2013, p.20)

Over the centuries, the region where Zeugma is located was ruled by the Byzantium Empire, the Seljuk Empire, the Ilkhanid Empire, the Mamluk Empire, the Dulkadir Principality, Mamluk Empire, Ottoman Empire and finally the Republic of Turkey in chronological order.

In the 16th and 17th centuries, Turkish tribes were settled in the south-east of the city (Belkıs Village) by the Ottoman Empire. Folk stories assert that these Turkish tribes named the remains of the Zeugma as Belkıs Ruins (Ergeç, 2005, p.3).

Houses

A large part of the Zeugma houses are thought to be used between the 1st century A.D and the 3rd century A.D (Görkay, 2015, p.47). The regged topography and the ease of the bedrock formation are the most important features affecting the spatial characteristics of Zeugma (Aylward, 2013, p.15). The residential units spread to the east and west of the Hellenistic agora and around the city center, and were built in harmony with the geography of the settlement. In this hot climate area, most of the dwellings face north by placing on the rocks sitting on the slope extending from Belkis Hill to Euphrates (Görkay, 2015, p.47).

The houses consist of rooms placed around the inner courtyard which has peristyle semi-open area and rock-cut storages (Aylward, 2013, p.15) (Figure 3. 17). These courtyards have impluvium in the middle which is tessellated with spectacular mosaic compositions. These courtyards not only meet the fresh air and sunlight needs of the houses, but they also play an important role in meeting the water needs of the dwellings. The increasing water demand with the increase in population in the city creates the need to cover all of the courtyard floors with mosaics to collect rainwater, resulting in the emergence of numerous magnificent mosaics. Mosaics are found not only in the courtyards but also in the rooms of the houses. Especially the guest and dining rooms have very elaborate mosaic examples (Görkay, 2015, p.50). Besides the floor coverings of the houses, the inner facades of the walls are decorated with painted plaster (Aylward, 2013, p.16).

The houses in Zeugma are thought to be mostly single-story, but the houses sitting on the slope, second and third floors were encountered. It is known that the ground floors of the houses were built with stone masonry by use of worked or rubble stones, while the upper floors were built with timber frames and mud-bricks (Aylward, 2013, p.16). The roofs of the houses are thought to be covered with terracotta tiles placed on wooden frames (Görkay, 2012, p.286). In general, Zeugma houses have a hybrid style. Their designs, dimensions, facade layouts and building materials are thought to be in-line with the Mesopotamian tradition while the plan scheme and decorations echo the Graeco-Roman culture. In addition to these, some features reflect the Partian tradition (Aylward, 2013, p.16).

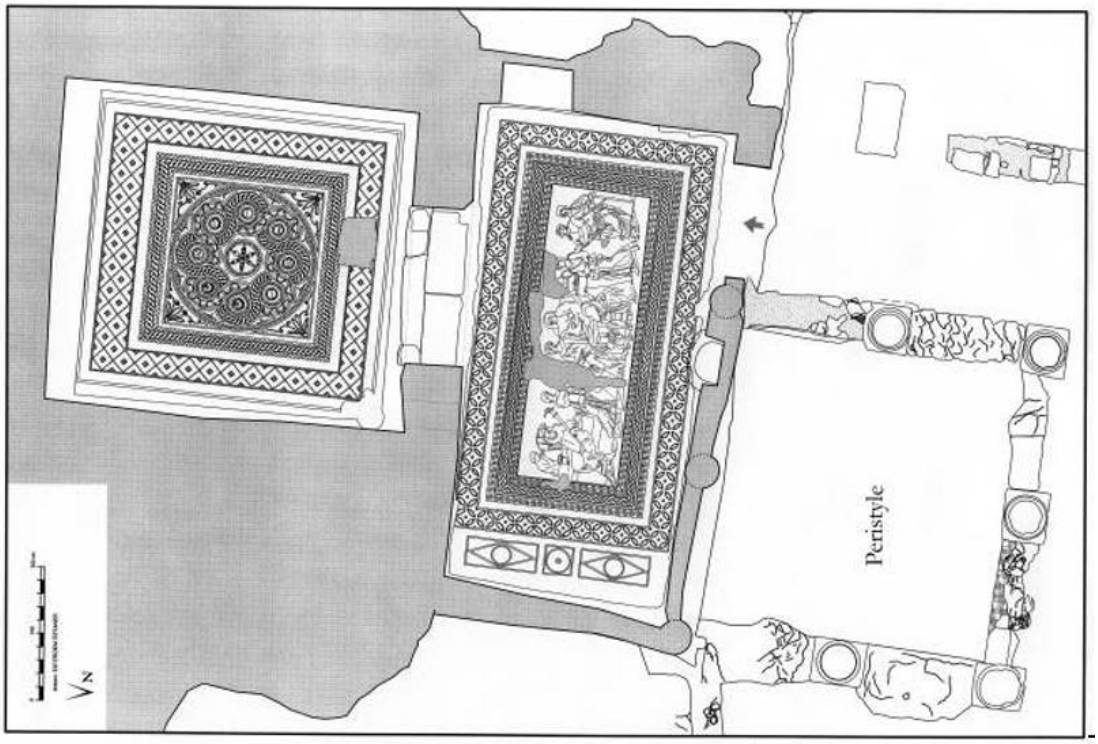


Figure 3. 17 The partial plan of the Dionysos House (Drawn by E. Öztaner – Görkay, 2012, p.293)

Table 3. 1 Historical Timeline of Zeugma

Seleucid Period	300 B.C	Seleukos Nikator the first, establishes the cities of Seleukeia and Apamea
	221–220 B.C	Seleucid king Antiochus III and Laodice who is the sister of the Mithridates, king of Cappadocia, have been married.
	69 B.C	Zeugma enters the reign of Tigranes I. Cleopatra Selene I, the wife of Antiochus Eusebes, king of Seleucus, is being executed in Zeugma.
Commagenian Period	64 B.C	Zeugma is granted in the territory of the Commagene Kingdom by Pompeius, the Roman Council.
	54 B.C	Crassus, the consul of Rome, travels through Zeugma on his military expedition to the east.
	36 B.C	Marcus Antonius gathered his army of a hundred thousand soldiers in Zeugma for the battle with Parthians.
	31 B.C	Zeugma comes under Roman rule.
	1 B.C	In Zeugma, Gaius Julius Caesar signs a peace treaty with Phrates IV, the King of Parthia.
Early Imperial Period	18 A.D	The tenth Roman legion, Fretensis, was taken from Kyrrhos and deployed in Zeugma.
	70 A.D	The Roman Legion Skythika is deployed in Zeugma.
	72 A.D	After the Commagene War (Bellum Cammagenicium), Zeugma has been connected to the Syrian province of Rome.
	114-117 A.D	The Roman Emperor Trainaus crosses the Euphrates River with his armies for the first time, expanding the war with the Parthians to the east.
	117-133 A.D	Diplomatic negotiations of the peace treaties between the Roman Emperor Hadrianus and the Parthians take place on an island on the Euphrates river in Zeugma.
Middle Imperial Period	197-199 A.D	Roman Emperor Septimius Severus starts off the Parthian war by taking road from Zeugma.
	216-218 A.D	The armies under the command of Roman emperor Caracalla and his commander Macrinus start the Parthia expedition from Zeugma.
	218 A.D	Caesar Diadumenianus, son of Commander Macrinus, is imprisoned in Zeugma and executed in Antiokheia.
Late Imperial Period	252-253 A.D	The armies of the Sassanid king Shapur I plunder Zeugma.
	325 A.D	From this date forward, information about Zeugma could be obtained from church records rather than from ancient historians.
	540-562 A.D	The construction of a new city wall is starting in Zeugma.
	583 A.D	There is information that the Byzantine Phillipicus built a Church of the Virgin Mary.
Early Islamic Period	636 A.D	After the Battle of Yarmuk, the Islamic armies are coming to the region.
	1048 A.D	From this date, information about Zeugma ends in historical sources.

3.2.2. Excavation, Research, and Conservation History of Zeugma

If an archaeological site resembles a living organism, learning the history of excavation, research and conservation is like learning how long we have been acquainted with, the general story of the organism, the diseases, and treatments it has undergone. Thus, the way to acquire some of the important data, that is necessary to understand the site, would be to listen to this non-poetic story of the site. Accordingly, this part of the study will focus on these topics and the Southeastern Anatolian Project, which played an important role in shaping them, to better understand the site.

3.2.2.1. Southeastern Anatolia Project (GAP) as Context and Background to the Excavation and Conservation Activities in Zeugma: Birecik Dam

This Roman settlement had been concealed underground for a long time. However, when it became clear that settlement would be concealed by the water with the construction of the Birecik Dam as part of the Southeastern Anatolia Project (GAP), rescue excavations were carried out.

The Southeastern Anatolia Project (GAP) is a regional development project aiming to bring the region to the "agriculture-based export territory" state. Two of the basic development strategies of the project are developing and managing land and water resources in terms of irrigation, urban and industrial use, and improving land use by implementing better agricultural business management, agricultural practices and planting. In order to realize these strategies, improving irrigation infrastructure became important as it would help in eliminating adverse agricultural conditions. This was implemented, as stated in Master Plan 1989[15], through the construction of dams in the area allowing irrigation facilities to be created using the dam reservoirs (Figure 3. 18).

[15] Güneydoğu Anadolu Projesi, Master Plan Çalışması (1989).

The Southeastern Anatolia Project (GAP) consists of a total of 13 large projects for irrigation and hydropower production. The Project envisions the construction of 21 dams and 17 hydroelectric power plants on the Dicle and Euphrates (Fırat) rivers and their arms[16]. The Southeastern Anatolia Project Master Plan produced in 1989, states that the Birecik dam would be located in the Euphrates (Fırat) river system and contains complete feasibility studies and final plans (Figure 3. 19). In the master plan the potential dangers and risks from the dam reservoirs – expansion of river bed- are pointed out to be the inundation of fertile agricultural lands and roads, and necessary measures have been defined. However, in the list of the problems that may arise, potential threats to historical sites was not included and, hence, no precautions have been defined in this regard.

In addition to the fertile agricultural lands, roads and historical sites, it became clear that some of the settlements near Euphrates (Fırat) and Dicle Rivers such as Belkıs Village would also be inundated. The Southeastern Anatolia Project (GAP) social action plan (1999)[17] is focused on the relocation of inundated settlements like Belkıs village.

The Last Situation in SAP report[18] of 2000, describes the way Zeugma was flooded and how the rescue excavations were handled (Figure 3. 20). According to the report, a protocol was signed between the SAP (GAP) administration and the Packard Humanities Institute in order to rescue the Belkıs / Zeugma Ancient City and to initiate emergency archaeological excavation and rescue operations. In this context; in Zeugma, multinational rescue excavations were carried out under the coordination of the SAP (GAP) administration and under the supervision of the Ministry of Culture. Moreover, the joint efforts of the Ministry of Culture, Gaziantep Governorate and Birecik AŞ, together with the American-based foundation Packed Humanities Institute (PHI), which has been active in international cultural studies activities since 1987,

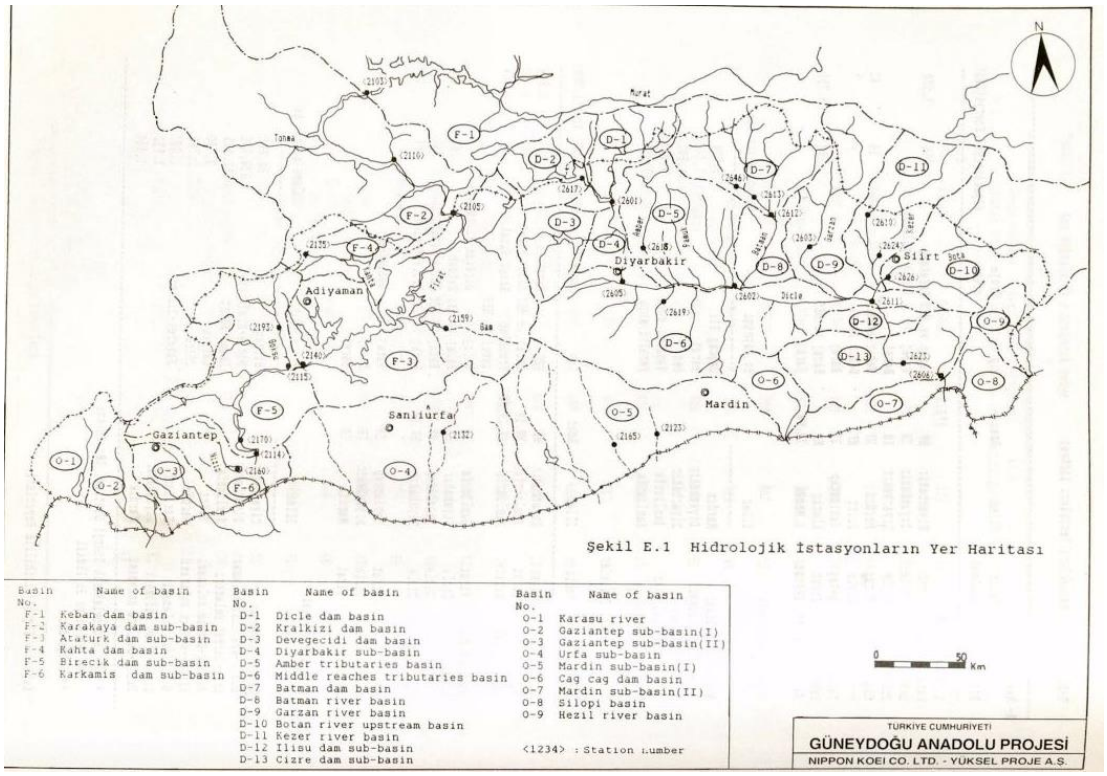
[16] South Eastern Anatolia Project, Master Plan - Güneydoğu Anadolu Projesi, Master Plan Çalışması (1990).
[17] GAP Sosyal Eylem Planı (1999).
[18] GAP 'ta Son Durum Raporu (2000).

were coordinated by the SAP (GAP) Administration. In this report, it is stated that the necessary logistical support and experts to conduct an emergency startup for excavation and rescue operations were provided by the SAP (GAP) Administration and PHI. At the end of the PHI's review work, in coordination with the SAP (GAP) Administration, three areas and stages were identified for excavation and rescue operations at Zeugma:

(a) The region flooded by the end of June 2000,

(b) The area which will remain below the maximum water level on 4 October 2000,

c) The region, which will not be damaged by the Birecik Dam reservoir.



Basin No.	Name of basin
F-1	Keban dam basin
F-2	Karakaya dam sub-basin
F-3	Ataturk dam sub-basin
F-4	Kahta dam basin
F-5	Birecik dam sub-basin
F-6	Karkamis dam sub-basin

Basin No.	Name of basin
D-1	Dicle dam basin
D-2	Kralkizi dam basin
D-3	Deveçecidi dam basin
D-4	Diyarbakir sub-basin
D-5	Amber tributaries basin
D-6	Middle reaches tributaries basin
D-7	Batman dam basin
D-8	Batman river basin
D-9	Garzan river basin
D-10	Botan river upstream basin
D-11	Kezer river basin
D-12	Ilisu dam sub-basin
D-13	Cizre dam sub-basin

Basin No.	Name of basin
O-1	Karasu river
O-2	Gaziantep sub-basin(I)
O-3	Gaziantep sub-basin(II)
O-4	Urfa sub-basin
O-5	Mardin sub-basin(I)
O-6	Cag cag dam basin
O-7	Mardin sub-basin(II)
O-8	Silopi basin
O-9	Hezil river basin

<1234> : Station number

Figure 3. 18 SAP (GAP) Master Plan 1989-1990 Location Map of Hydrological Stations

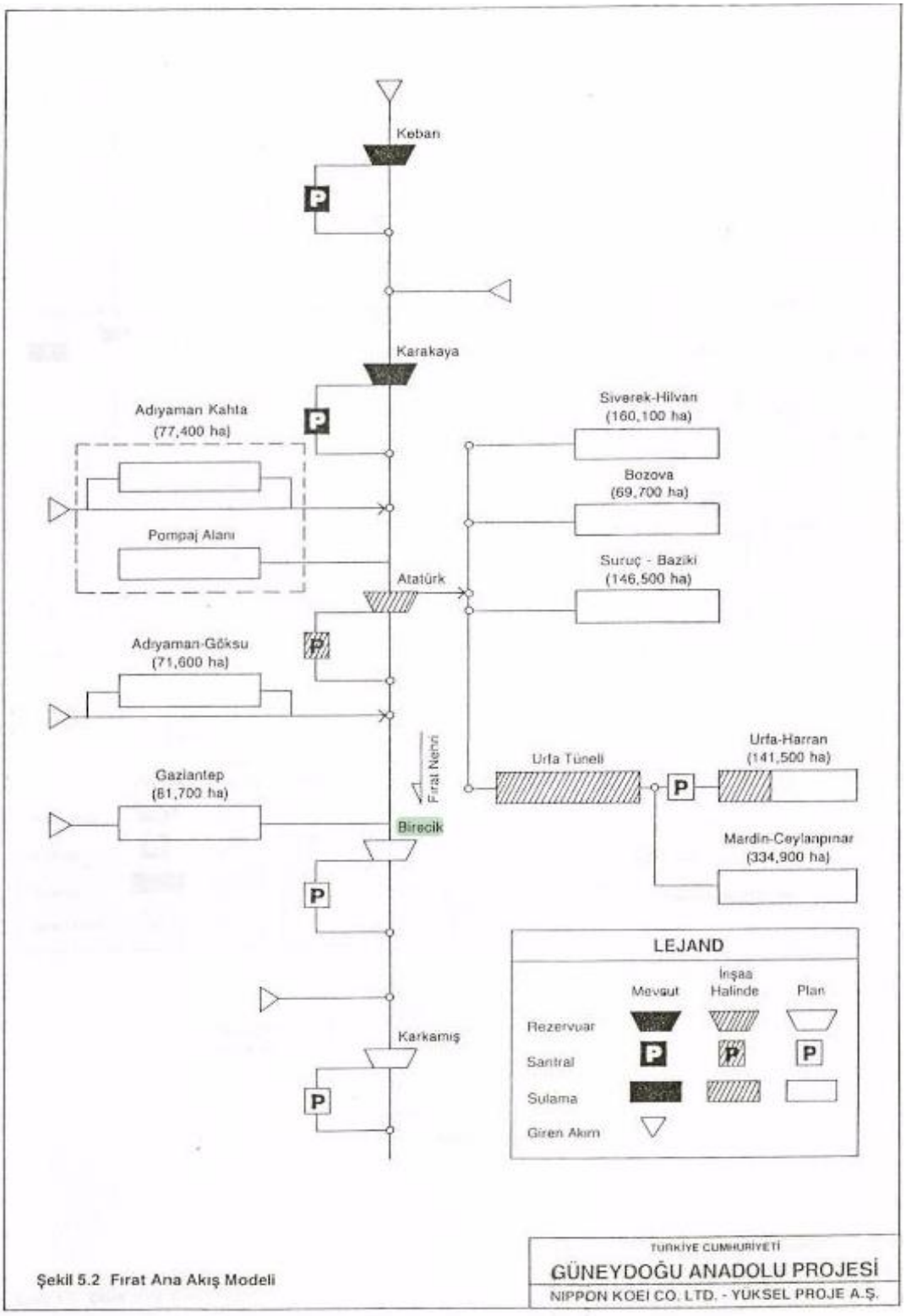


Figure 3. 19 SAP (GAP) Master Plan 1989-1990 Euphrates (Fırat) River Flow Chart

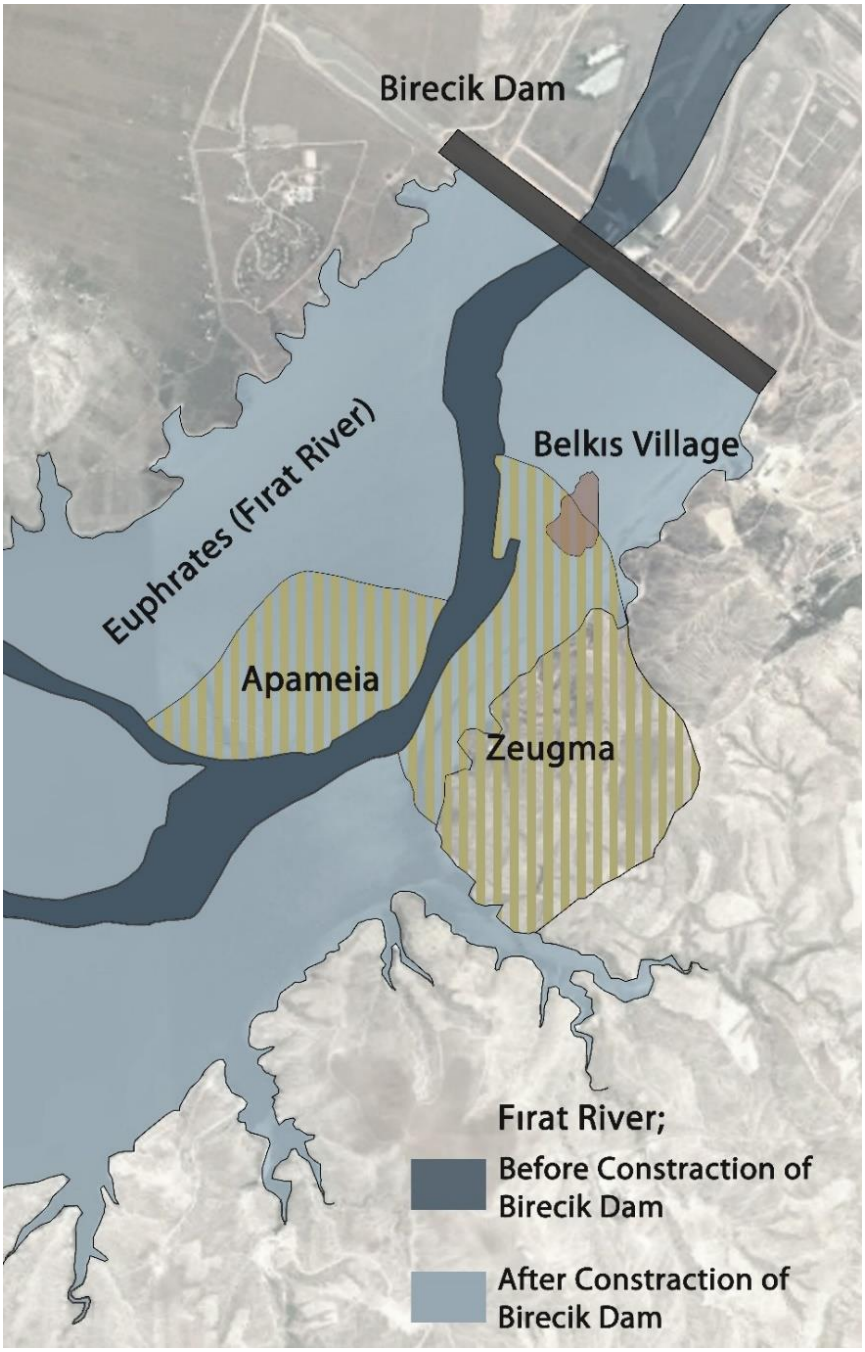


Figure 3. 20 Euphrates (Fırat) River Before and After Construction of Birecik Dam (Gündüz Çetinkaya, 2011)

At the first region, rescue excavations (Figure 3. 21) continued with the contribution of PHI until the end of June 2000. For the second region, larger team of archaeologists was formed, and they worked until the water reached its maximum

level in October 2000. For the third region, there were no actions defined for conducting excavations or any other work.

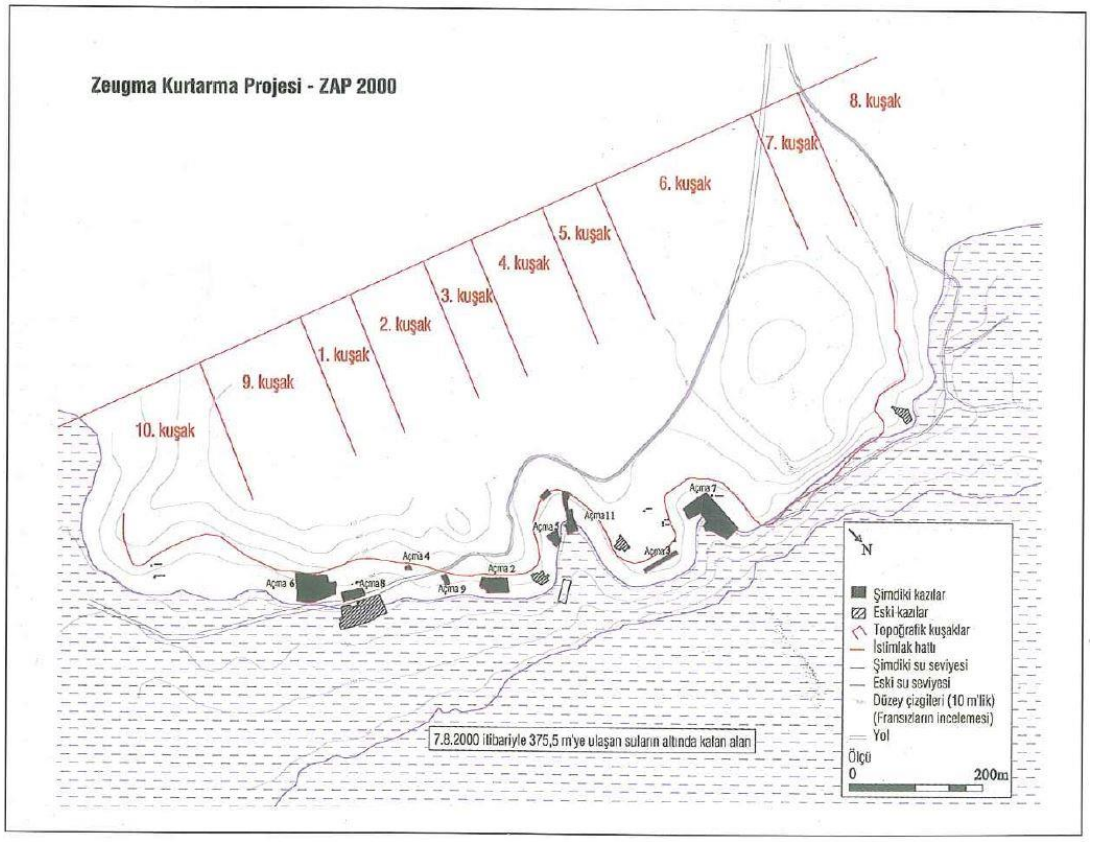


Figure 3. 21 Rescue Excavations Scheme (Ergeç, 2001)

In the GAP Regional Development Plan for the years 2002-2010, under the "tourism in the region" title, for the high potential areas of tourism such as Nemrut and its vicinity, Hasankeyf and its surroundings, Midyat and its surroundings, Mardin, Birecik dam-Zeugma and its surroundings and Sanliurfa and its surroundings; preparation of "Tourism and Creation Management Plans" have been proposed[19]. On the lower scale, considering the environment of Zeugma Antique City and Birecik Dam Lake as a "Tourism Development and Management Plan" is one of the targets of this development plan. In addition, according to the proposals by the "Commagene Nemrut Conservation Development Program (CNCDP)", travel routes that assessed

[19] GAP Bölge Kalkınma Planı, Yönetici Özeti, Cilt I (2002-2010).

the area as a whole were also determined. In this context, two main tour routes were defined in the region;

A) Region Tour Route: This route with an airport or highway entrance starts from Gaziantep or Adıyaman. The tours end in Diyarbakir or Mardin following the main transport axes. On tour route; especially; Gaziantep (city, close archaeological sites and Zeugma), Nemrut and its surroundings (Adiyaman), Şanlıurfa (city and Harran), Mardin (city and its immediate surroundings), Midyat, Hasankeyf (Batman) and Diyarbakir are important points of interest. These tour routes are followed by the north or south highway according to the entry point.

B) Partial Tour Routes: The size of the region makes it possible to make partial routes and tours as well as regional tours. Two important partial tours are:

1- In the western part of the region; Gaziantep or Adıyaman tour: Gaziantep (city, Yesemek, Kargamış and Zeugma), Rumkale, Halfeti, Adiyaman and its immediate surroundings, Nemrut and Şanlıurfa (city and Harran) or Diyarbakır route,
2- In the central and eastern parts of the region; Diyarbakir or Şanlıurfa tours: Sanliurfa (city and Harran), Mardin and its immediate surroundings, Midyat, Hasankeyf (Batman) and Diyarbakir routes.

Furthermore, the plan states that improving the routes as well as improving accommodation facilities, area regulation and capacity building are important.

Zeugma and its surroundings were covered in detail in the Master Plan for Tourism in the SAP (GAP) regions prepared in 2010. In addition to the sightseeing routes on the land, this plan also offered a cruise route through the Euphrates (Fırat River). The report also suggested that Birecik Dam Lake be opened to water sports and recreational activities. There are still known and used sources such as Zeugma, Rumkale, Halfeti and Savaşan villages around the dam, Gaziantep Special Provincial Administration is still working on a boat with a capacity of 120 people in the dam reservoir. In addition to this, it has been shown as a reason for the development of

such a suggestion that a 28 people capacity protocol boat and a second trip boat for 150 people ordered, and there are still as many requests as Halfeti and the opposite bank (Yavuzeli side) will operate about 50 boats. The scope of the Master Plan for Tourism in the SAP (GAP), pointed out that for the first time in Turkey, river tourism of about 100 km is expected to start on Birecik Dam Lake which is about 100 km long and has a very narrow lake. Furthermore, it is stated that starting from a pier to be built in the vicinity of Zeugma, it may take about 3 or 4 days to reach the bridge in front of the Ataturk Dam Lake by visiting various historical centers along the lake and this activity has an important economic opportunity because there is no similar example in Turkey.

Within the scope of the Tourism Master Plan, the recommendations made for Zeugma are as follows. The entire archaeological site should be constructed with a conservation plan and the location of the pier. In Zeugma, a landscaping project planned in the vicinity of the dam, garbage canals, viewing terraces, photo terraces, directional signs should be placed in order to visit the works outside the dam reservoir. A guest welcome center including a car park, a day trip facility, a ticket sales, handicrafts, brochures and souvenir sales units, toilets, watchman's club are also suggested for the tour buses. The plan strictly points out that this center must be located in the protection plan.

The GAP action plan prepared for 2008 - 2012, includes that the Zeugma Antique City Archaeological Park and Museum Project to be implemented. Moreover, in the GAP action plan prepared for 2014-2018, it was planned that the Zeugma Mosaic Museum Environment Regulation Project will be prepared between 2014 and 2015 and implemented between 2015 and 2016.

3.2.2.2. Excavation Experiences and Research History of Zeugma

Richard Pococke, an English Traveler, is the first person who gave the approximate location for Zeugma in 1738[20] (Kennedy, 1995, p.219). In 1831, more correct identification of the site comes from Rennell who defines the location of Zeugma as "9 miles above Beer (Birecik) … exactly between Beer and Rumkala (Rumkale)". Following these, in the years between 1835 and 1837 Chesney produced maps of Belkıs Tepe and Belkıs village with topographical entities and without mentioning about Zeugma (Aylward, 2013, p.1). French traveler states the most reasonable definition about the location of Zeugma Cumont in his 1917 book (Akyol, Kadıoğlu, Demirci, 2011, p.39). In addition to the information obtained from travelers, it is known that this glorious Roman settlement was concealed with its glory until the illegal excavations have been carried out by the local people. From the 20th century to 1944, when the Gaziantep museum was founded leading to the discovery of the situation, the aforementioned illegal excavations took place and the unearthed archaeological artifacts have been sold to smugglers (Önal, 2006, p.48). Mosaics, excavated at that time, both sold in art markets to private collectors and collected by local museums and the ones from Europe and the United States (Kennedy, 1998, p.13).

With the establishment of the Gaziantep Museum in 1944, illegal excavations were reported by the local people and the found artifacts were collected and exhibited by the museum (Ergeç, 2005). The situation continued until 1987. During the same period, spesifically between 1971 and 1974, Jörg Wagner examined the artifacts and the topography of the area in his doctoral study and he revealed that Zeugma is an important Roman city. Thus, the first scientific work was done on the field.

[20] Aylward (2013) quoted this section from Pococke's book: "If the river at romkala (Rumkale) was the Singas, Zeugma, according to Ptolemy, was twenty minutes south of it, which agrees very well with the situation of that place. For after I had left Beer (Birecik), I enquired if there was any place on the Euphrates of that name; and I was informed, that about twelve miles above Beer there was a place called Zima (Zeuma); and asking if there were any signs of a bridge there, I was assured, that, when the water is low, they see on each side of the river, the ruins of a pier, which may possibly be the remains of this bridge".

In 1987, with the discovery of the area known as "Belkis Ruins" to be the ancient city of Zeugma, excavation work was started by Gaziantep and Malatya Museums in two grave chambers where the smugglers had left their excavations unfinished, and the first legal excavation was carried out in the field. In the continuation of this development, the in-situ presentation of the artifacts started for the first time. Until 1995, excavations continued under the management of Gaziantep Museum (Ergeç, 2000, p.20).

In 1989, just before the dam embankments and basins were determined, Ministry of Culture initiated studies intending to identify the archaeological sites to be affected by the GAP dam basins, yet the assigned team failed to foresee and point out the importance of the area and the threat that the dam would create. Thus, due to the lack of knowledge about the site, the dam embankment was placed in almost the most damaging location to the site. About 1/3 of the Zeugma archaeological site, which covers an area of about 20000 m2, was to be inundated (Başgelen, 2005, p.43). This situation resulted that the flow of the excavation work in the site became extraordinary.

Construction of Birecik dam, planned since 1993 began to be discussed seriously. Following this, excavation work gained momentum. In the same year, the Dionysus Villa was completely unearthed with the participation of Professor Doctor David Kennedy and his team from the University of Western Austria.

In the season of 1994, the excavations by Gaziantep Museum became more extensive. A villa, which was half-excavated by smugglers, was brought to the surface, and the mosaic found on the terrace of the villa was moved to the museum (Başgelen & Ergeç, 2000, p.18). Moreover, The Roman Bath and the Gymnasium Complex, now under the waters of the Birecik Dam, were excavated, and movable artifacts from a grave room in the south-eastern necropolis, removed to the museum (Ergeç, 2000, p.21).

Another action taken in the same year is as follows; The Gaziantep Museum Directorate, General Directorate of Monuments and Museums and the Ministry of Culture pointed out the Birecik Dam to be built and announced that for the national and international initiatives and for the work to be done, the Ministry of Culture will provide funds (Başgelen, 2000, p.13). This action can be considered as the first attempt leading to the rescue excavations.

In 1994, at the International Excavation Results Symposium, it was attempted to promote the Zeugma City and draw interest from potential participants and researchers. The first response to the invitation came from Dr. Catherine Abadie Reynal from Nantes University and she stated that she wanted to work on the field (Ergeç, 2000, p.22).

Rescue Excavations;

The rescue excavations began in 1995-1996. Within the scope of the rescue excavations, studies were carried out at the maximum water level of the dam, at +388m elevation and below (Başgelen, 2000, p.16). This excavation aimed to gather information about the city's walls, morphological structure, public buildings, houses, squares, sewerage systems, waterways, grave chambers, military settlements and the and works of art.

The first year of rescue excavations was carried out in collaboration with Gaziantep Museum and Nantes University. During the first year of the rescue excavations, The Ministry of Culture, which provides resources for studies, and Rifat Ergeç, Mehmet Önal and Catherine Abadie Reynal were experts who carried out the studies (Acar, 2000, p.7). Within the scope of these studies, the excavation area was expanded, and the excavation work was begun in Horum Höyük and Apamea besides Zeugma (Seleukeia) by prioritizing the parts to be potentially inundated (Ergeç, 2000, p.23).

In 1996, dam construction started. When the mosaic pieces were found during the dam construction, construction work was stopped for a while and an excavation

work was carried out in this area. During these studies, a Roman bath, gymnasium, Roman legion camp and 36 mosaics were unearthed and documented (Ergeç, 2000, p.25).

During the excavations conducted between 1997 and 1999, the Legion Camp research team, consisting of Swiss and German archaeologists, and a team from Swiss Bern University were added. In 1998-1999 season, the Gaziantep Museum team also worked during the winter months to combine the excavation seasons in order to remove movable artifacts and document the sections, which will be flooded, of the ancient city. Necropolises, sub-sections of the city, twin villages and the archives of the city were excavated and numerous mosaics (Figure 4. 1), bronze sculptures and up to 64000 stamps were found (Başgelen & Ergeç, 2000, p.34). The findings of the year 1998 is included the "Gypsy Girl" mosaic (Figure 3. 22), which became a symbol of the Zeugma archaeological site.9394



Figure 3. 22 "Gypsy Girl" Mosaic (Gündüz Çetinkaya, 2012)

After the completion of the Birecik dam in 2000, rescue excavations and finds were featured in both the Turkish and world press[21] (Figure 3. 23, Figure 3. 24). The fame of the area which is mentioned as the second Pompei reached worldwide.



Figure 3. 23 Local Newspaper Headings about Zeugma (Milliyet, Hürriyet and Cumhuriyet Archives- Gündüz Çetinkaya, 2019)

[21] For details see the article; Tanaka, E. (2014). Heritage destruction in context: The case of the Roman mosaics from Zeugma, Turkey. International Journal of Heritage Studies, 21(4), 336-353.

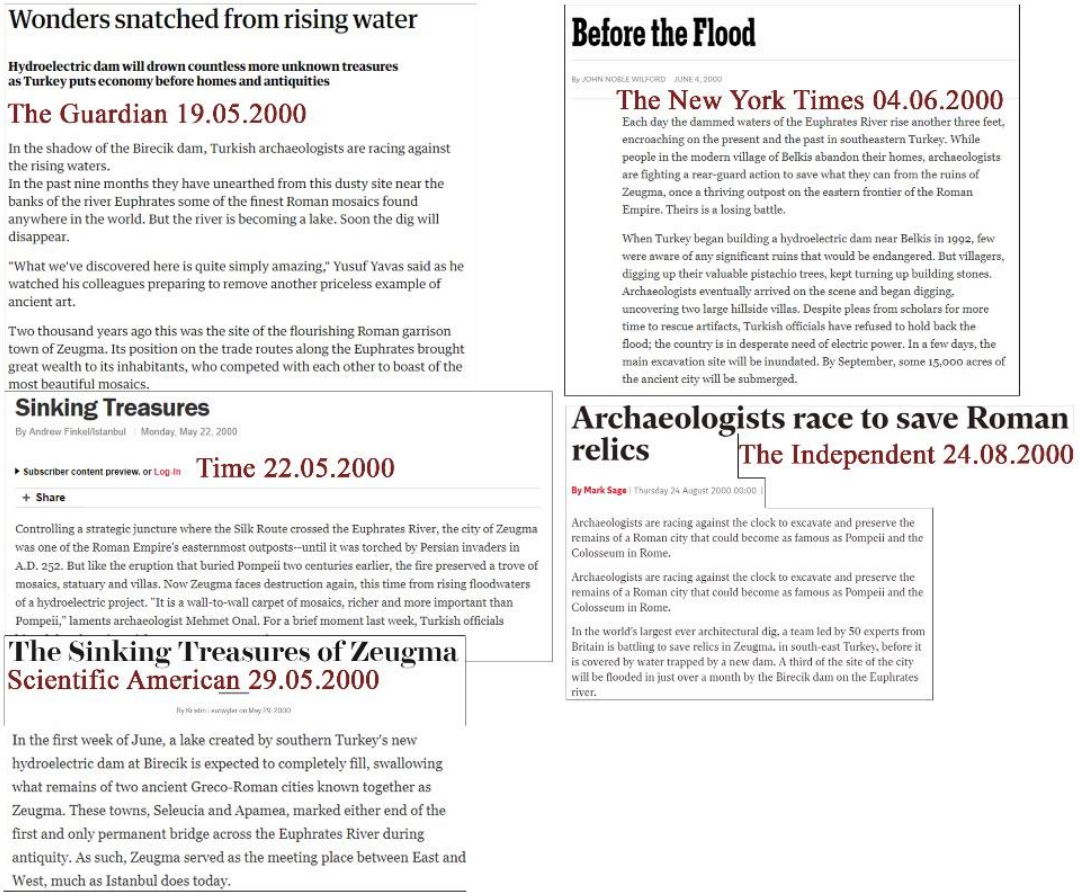


Figure 3. 24 International Newspaper Headings about Zeugma (Gündüz Çetinkaya, 2019)

In 2000, a large number of teams participated in the implementation, and many institutions and organizations gave financial support (Ministry of Culture, Gaziantep Governorship, US Culture Foundation, Tofaş Inc., SANKO Holding, Packard Humanity Institute, Birecik Dam Consortium Birecik Barajı A.Ş.) to the rescue excavations. In this process, a great deal of documentation work was done and movable cultural artifacts have been removed to the museum. The bronze mars statue which attracted attention worldwide was also revealed during this year's works (Nardi & Önal, 2003, p.1) (Figure 3. 25). In Zeugma, which is described as a place where historical artifacts are gushing from in the press, excavation practices returned to its normal tempo with the rise of water in October 2000(Figure 3. 26).



Figure 3. 25 Bronze Mars Statue (Gündüz Çetinkaya, 2012)

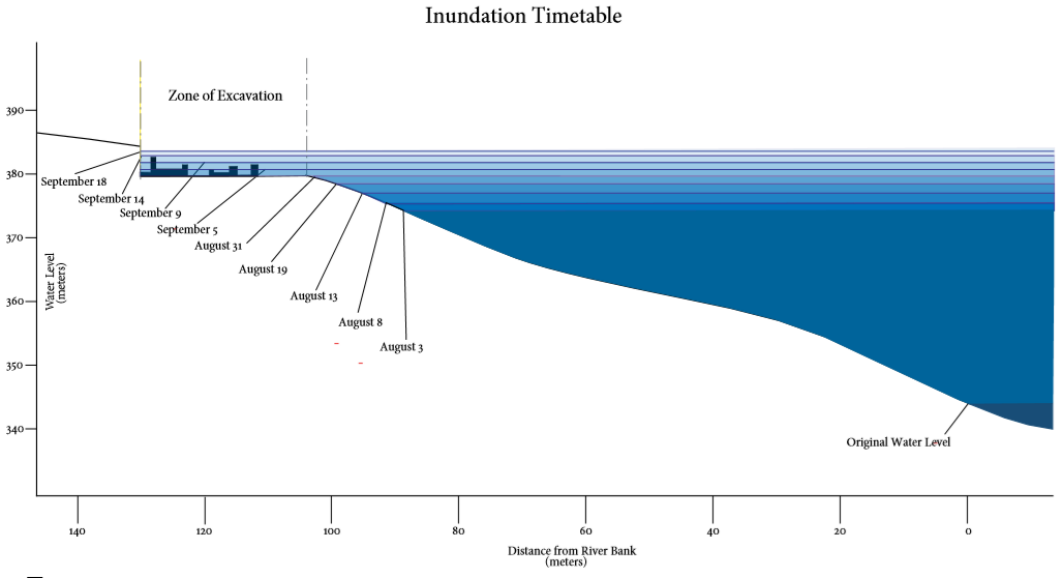


Figure 3. 26 Diagram showing the water level in the Birecik Dam Reservoir during the rescue excavations of 2000 (drawn by Jamon Van Den Hoek, Aylward, 2013, p.6)

There were no planned excavations until 2004. However, conservation work continued to be carried out in the parts that were uncovered by water movements and studies were carried out by the Gaziantep Museum to remove the mosaic fragments.

In the meantime, field studies have been reduced in order to examine the data obtained from the rescue excavations and work on cleaning, conservation, and restoration of movable artifacts such as mosaic panels, wall paintings, sculptures, stele, etc. were started. This work was completed in early 2004 and artifacts started to be presented in 2005. Also, in 2004, excavations in the house of Danae and construction of coast protection set were done by Gaziantep museum while excavations of the theater were carried out by the team of France Nantes University (Önal, 2009, p.53).

Between 2003 and 2006, geophysical surveys were carried out to investigate the Roman Legion located in the city with the joint work of MAVORS and Izmir Dokuz Eylül University, Geophysics Department. On the other hand, between 2009 and 2010, the underground geophysical surveys were carried out by Berlin Free (Freie) University and Berlin TOPOI Institute for the purpose of detecting city walls.

In 2005, the excavation presidency was given to Pr. Dr. Kutalmış Görkay from Ankara University, Archeology Department by the ministerial committee. Since than, excavations and conservation work carried out in the field were handled by Ankara University. Excavations were being carried out in a planned manner.

3.2.2.3. Conservation Activities in Zeugma

Even though Zeugma is a quite magnificent Roman city, there is no holistic conservation and management plan for the area. In other words, the protection activities conducted in the area are disconnected. We can summarize these conservation activities in the field under four basic headings.

Chronologically the first and the most intensive conservation activities carried out in Zeugma were the cleaning, consolidation, and preparation for an exhibition of

the movable artifacts gathered from excavations including the rescue excavations. For this purpose, a laboratory was established in Nizip, where portable items were cleaned and strengthened as well as inventoried (Figure 3. 27).

In addition, activities such as cleaning, consolidation, anastylosis, and completion were carried out in order to protect and display the immovable artifacts in place. However, the most striking conservation activity in the field is the protection of Danae and Dionysus houses with a shelter. The project of this shelter museum planned to be started in 2006 was completed in 2010. The most important factor that necessitates the construction of this protection roof is that the stones belonging to the artifacts are not resistant to weathering cycles.

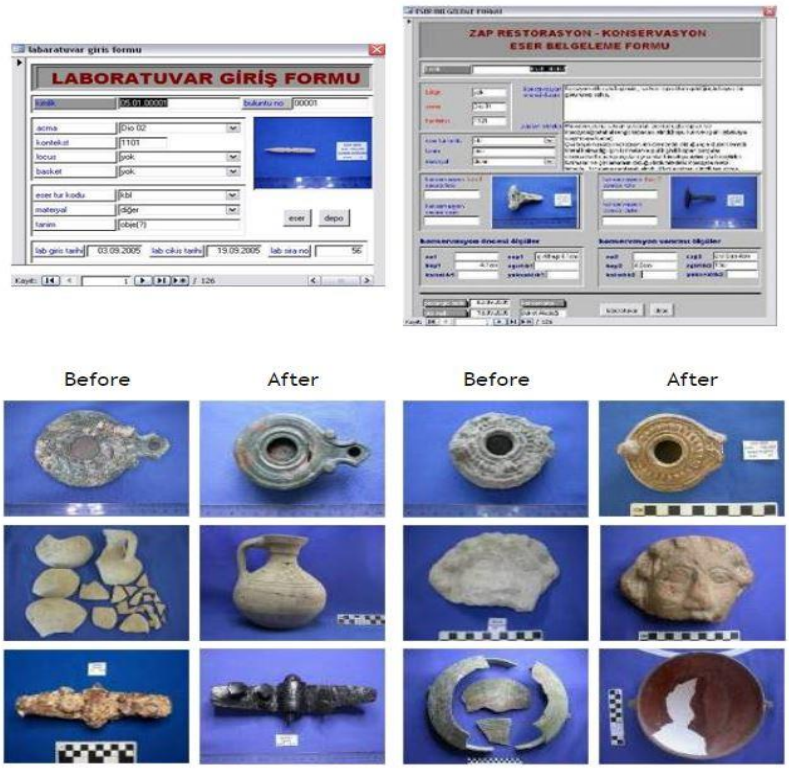


Figure 3. 27 Movable Artifacts Inventory and Archive Application Source: http://www.zeugmaarchproject.com/, last accessed in 20 December 2018

In this direction, the protection roof was designed and constructed in such a way as to eliminate all the adverse effects of weather conditions, while allowing

visitors to visit the four Roman villas under the roof all year round (Figure 3. 28). Omacan (2009), the head architect of the designer team, explains the reason and the idea behind the design as; At the site, the air temperature was ranging up to 50°C in summer days, and the reflection of the sunlight hardened the visibility of the remains. The structure was designed to meet architectural, presentational and conservational requirements. The outer shell was formed to protect the remains against the weathering conditions, while the inner shell was responding to the presentational requirements. Locations of the protective shelter's concrete foundations, encircling the archaeological remains, were determined according to the positions of the remains. On foundations, steel columns rise and meet with opposing ones through steel trusses which enable the structure to span a wider gap (30 m) without any vertical bearer. Omacan (2011) states that the materials were selected with the concern of achieving the most convenient ventilation and illumination conditions inside the structure (Figure 3. 29). Accordingly, the inner shell is made up of a porous textile net and the exterior part is covered with perforated metal sheets. The platforms within the covering structure have steel box profile supports and wooden pavings on them. These platforms were placed a level higher than the remains to enable visitors to overlook the remains from different angles (Figure 3. 30).



Figure 3. 28 Construction of Protection Roof. Source: http://www.zeugmaarchproject.com/index.php?option=com_content&view, last accessed in 20 December 2018

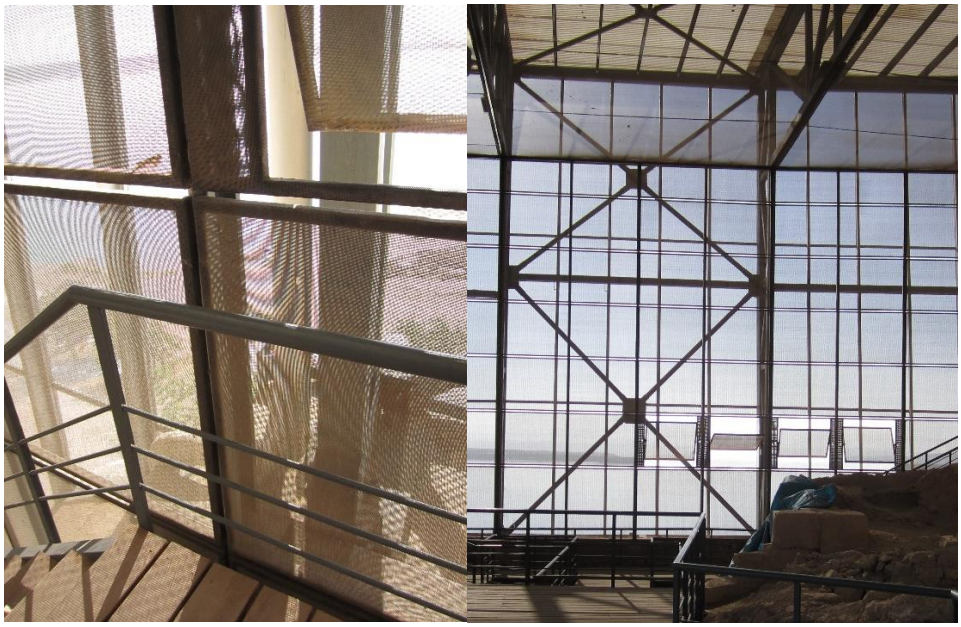


Figure 3. 29 Details from Protection Shelter (Gündüz Çetinkaya, 2012)



Figure 3. 30 Interior of the Protection Shelter (Gündüz Çetinkaya, 2012)

Another conservation activity during difficult process Zeugma had to get through, was the coastal strip protection wall which was constructed in 2005 with the

aim of protecting the coastal lines from seasonal effects such as wetting - drying and warming - cooling, with support from the Culture and Tourism Ministry. In this process, the maximum water level of the basin was determined before the construction and the water level was lowered during construction to ensure proper construction of the wall (Figure 3. 31).



Figure 3. 31 Protection Wall (Gündüz Çetinkaya, 2012)

The property issue, which is one of the most important reasons for the unavailability of integrated conservation and management activities, was attempted to be solved by the expropriation method, which was also considered as one of the protection activities carried out in the field since it would be a prelude to holistic conservation work. With the aim of eliminating the obstacles restraining the holistic approach, expropriation studies were carried out to begining 2005.

3.3. Present Situation of Zeugma

3.3.1. Natural and Geographical Aspects

The most important inputs to a site are the natural and geological features of the area. These unique features play an important role in whether an area was utilized as a residential area in the past as it is today (Figure 3. 33). In addition, the morphological development of the settlement is also guided by these features and in

accordance with the possibilities it provides. The topography, slope, aspect, land cover, surface hydrography and geology of the site were examined under the title of natural and geological features of the site in order to better understand the subject matter of the work.

3.3.1.1. Topography

Sources indicate that during the Hellenistic period high and scenic sites were chosen to be settled. As a Hellenistic city, Zeugma is also sitting a drop off site reaching to Euphrates (Fırat) River with 332 m altitudes. The highest point in the area is the Belkis hill at an altitude of 570 meters, where the temple is located. Living in high places in the Roman period was also recognized as a preference and privilege peculiar to the nobility, and therefore developed in the hill behind the city.

As can be seen in Figure 3. 34, there are 2 hills within the boundaries of the city known today. It is the highest peak of Belkis Hill in the vicinity of the Euphrates (Fırat) and the nearby area.

3.3.1.2. Slope

The slopes in the area were examined with the presupposition that visitors will explore the site on foot. In this study, 4 different intervals were determined. The first range, expressed in the lightest color, is the range of 0-5 degrees that any person with disabilities and children can walk comfortably. The second interval is the 5 to 10-degree range, which is considered to be a ramp where due to the obstacles, children or the elderly can only walk with help. The third range is the 10-45-degree range that can be reached by any convenient or steep staircase. The fourth and last interval shows areas where the slope is over 45 degrees, and where it can be reached only by the inclination of the slope.

As can be seen in Figure 3. 35, a quarter of the city can be reached without needing a staircase while the remaining part can be reached with stairs or prolonged ramps.

3.3.1.3. Aspect – Land Orientation

This research was conducted with the aim of determining the orientation of the site which is located in a very hot geographical area, to provide support in the process of designing any structure, shelter or similar facility that could be proposed for the site. The results show that the field is quite suitable to be arranged in a way that can be protected from the sultry character of the site. (Figure 3. 36)

3.3.1.4. Landcover

In a concealed archaeological site like Zeugma, the layer above the remains became a research object. Another goal of this study was conducted was to examine the vegetation cover. Almost all of the area within Zeugma's estimated city borders is covered with pistachio trees, while the rest is barren land. The immediate surroundings are predominantly covered peanut trees, while agricultural land, afforested areas, and barren lands are also present. The map produced during the study also shows the Euphrates (Fırat) River, seasonal rivers and irrigation canals as a surface cover (Figure 3. 37).

3.3.1.5. Surface Hydrography

In Zeugma, as in the case of other established societies, the water element is of great importance in the course of the formation and development of a city, and it shapes the processes that the city has underwent. The water element creates obstacles as well as a source of life for the cities. The fact that Zeugma and its twin city are in this position is an effort to create a gateway city to open the obstacle between the two sides of the water. Today, the point that comes to mind is that water, which is the main cause of the city's existence, created a big problem for the city and hid some of it. This study was carried out to understand the situation after some of the city was swallowed by water. In the study, the surface waters in the vicinity and the flow line of the ground waters are shown. Euphrates (Fırat) River, Bahçedere River, seasonal rivers, irrigation canals and ground waterways can be seen on the map produced as part of this research (Figure 3. 38).

3.3.1.6. Geology

The surface information of the geological data related to the site is shown on the map, and the vertical data is shown in the drawing (Figure 3. 39).

3.3.2. Access to the Site

There are two basic methods of access to the site, namely the river, and the road (Figure 3. 40).

3.3.2.1. Land Road

The ancient city of Zeugma is 10 km away from the Nizip District of Gaziantep. The distance from the city center of the ancient city is 50 km. There are asphalt roads reaching the site by wandering northwest of the area while there are stabilized earth roads at east, southeast, and south of the area. In other words, there are enough facilities to access the site on road. Moreover, there is a short paving stone road in the north of the site, near the shelter. Within the boundaries of the area, the only available facility means of access to one place from another is the dirt pedestrian roads.

3.3.2.2. River Road

There are two piers, one is in the north of the area, at the intersection of Bahçedere bed and the dam basin and the other is at the east of the area and the west of the dam wall. These piers connect to the site via asphalt roads. This on the river axis is a network that connects Zeugma with many historical sites like Rumkale and Halfeti.

3.3.3. Physical Environment

3.3.3.1. Archaeological Remains

There are many archaeological remains found in the area, both from the Hellenistic and Roman periods. Some of these remains are on surface and some are under the soil or water. Some of the remains on the ground are protected by shelters, while others

are facing weathering conditions without any protection (Figure 3. 41, Figure 3. 42, Figure 3. 43, Figure 3. 44). In light of the studies conducted on site, the archaeological investigation status, visibility and structural status of the remains were examined. According to this information, it has been observed that the structural conditions of the remains under the protection roof are better than those left exposed to weathering conditions.

3.3.3.2. Conservation and Presentation Elements

The most dominant protection element in the area is the protection roofs of different qualities. In addition to these roofs, the only protection element that can be observed in the area is the tarpaulins which are observed on the ruins such as the theater or temple and whose preservation is open to discussion (Figure 3. 32). It is seen that all of the protection elements observed in the area were shaped to solve the problem of the remains in open air in the settlement of Zeugma, which could not withstand the weathering conditions. In this respect, the roof on the House of Danae and Dionysos is considered to be quite sufficient, but tarpaulins should not be considered as a conservation solution, as it may cause sweat or moisture problems.



Figure 3. 32 Tarpaulin cover laid to protect the remains of theatre (Gündüz Çetinkaya, 2012)

The shelter protects the remains from weather conditions such as direct sunlight and precipitation, removes the moisture that will damage the residues and also includes presentation elements such as planned walkways and information signs.

In brief, the site is not sufficient to present itself, but a certain level of presentation element has been defined for the presentations of the remains under the roof of the house. On the other hand, since it does not already have a strong structural condition, it is necessary to apply different methods to present the area that is not suitable for display on the ground itself. Therefore, it can be said that the area is weak in terms of presenting its values and the significance to the visitors.

As mentioned earlier, the fact that the remains are unstable against the weathering conditions required the need for a protective shelter for the presentation of the remains on the surface. It is thought that a significant part of the buildings in the area, especially the residential units, were not brought from the quarry. Although these stones are formed to be a structural element, the capillary cracks in their bodies are separated into pieces by losing their integrity as a result of being moved away from other elements supporting the unit stone or exposed to outdoor conditions. This situation has caused a very large area to be presented in very small and contextually fragmented sections. Therefore, the presentation elements are mostly positioned around the area where the protection roof is located. In addition to the protection roof, there are elements serving the presentation of the area, such as information signboards, direction signboards, warning signboards, and visitor walkways (Figure 3. 45).

3.3.3.3. Built Environment

Within the boundaries of the Zeugma archaeological site, there are buildings constructed with different techniques that serve different purposes (Figure 3. 46). The first of these building types are permanent or temporary protection shelters which are constructed to protect the remains from the weathering conditions. The remains of the “House of Danae and Dionysos” and the “House of the Muses” are already preserved by protection shelters. Another type of building is temporary structures that are

positioned to meet the needs of storage, toilet or watch-house in the area. These structures are containers with different sizes and forms according to their functions. Another type of building is the one which is not currently functioning but is built to serve as a café. The café structure was built using reinforced concrete and steel skeleton construction techniques, but it was aesthetically unqualified and inadequate. There are also pergolas, which are mostly used by the excavation team and constructed to protect from the sun.

The coastline of the Euphrates (Fırat River) is constantly changing due to the dam. This situation is dangerous for remains near the shoreline due to the possibility of exposure to the periodical wetting & drying cycle. For this reason, a protection wall was built on the line where the river was connected with the ruins. This wall is a part of the built environment in the area even though it has lost its meaning due to the collapse in some parts.

There are also gates at different points in the area. Although these doors do not provide complete security, they form a safety barrier by preventing the entrance of vehicles to the site. In addition to these, there are electricity poles which can be considered as the infrastructure element in the field.



Figure 3. 33 Panoramas from Zeugma (Gündüz Çetinkaya, 2015)

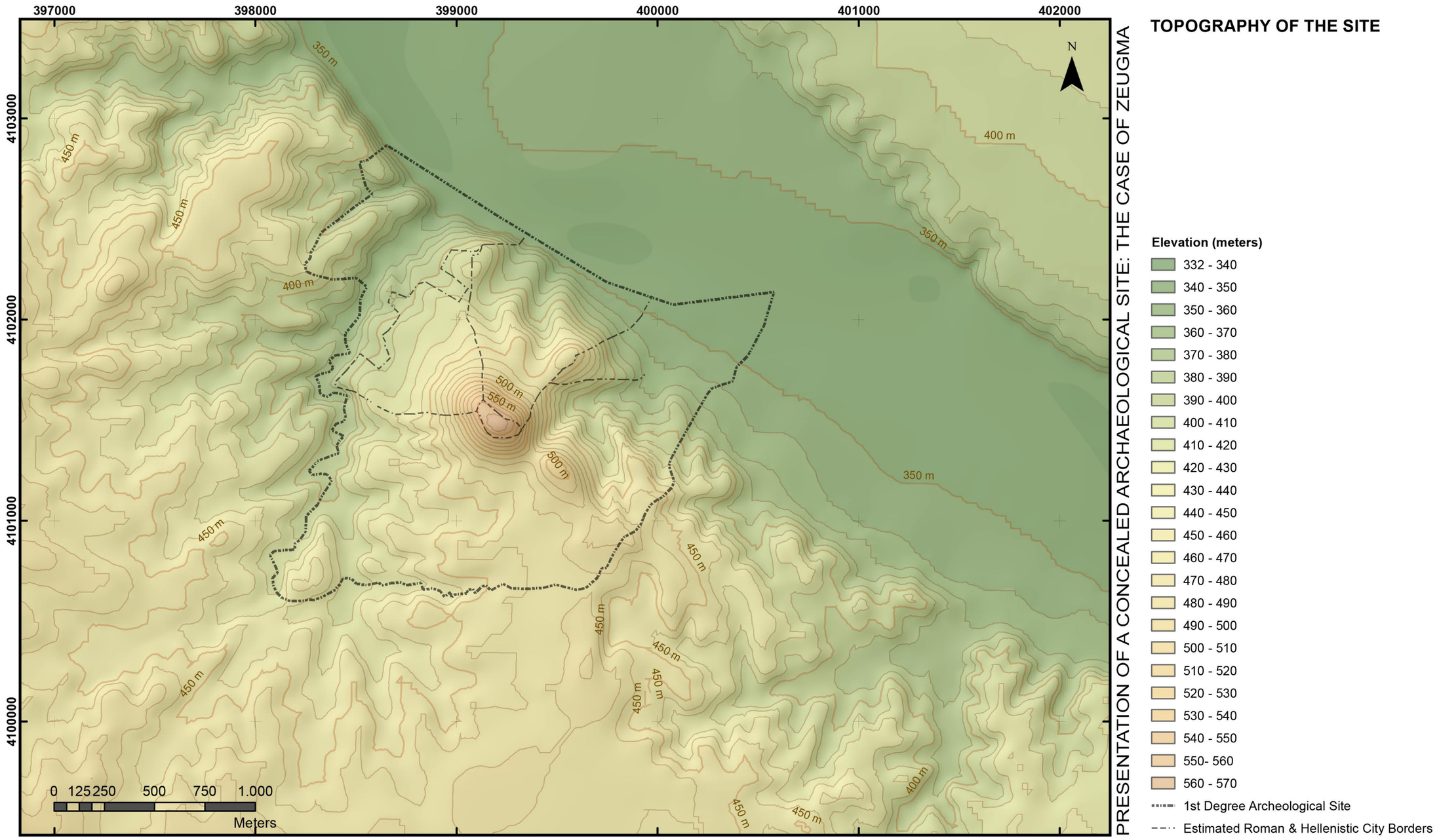


Figure 3. 34 Topography of the site (Gündüz Çetinkaya, 2015)

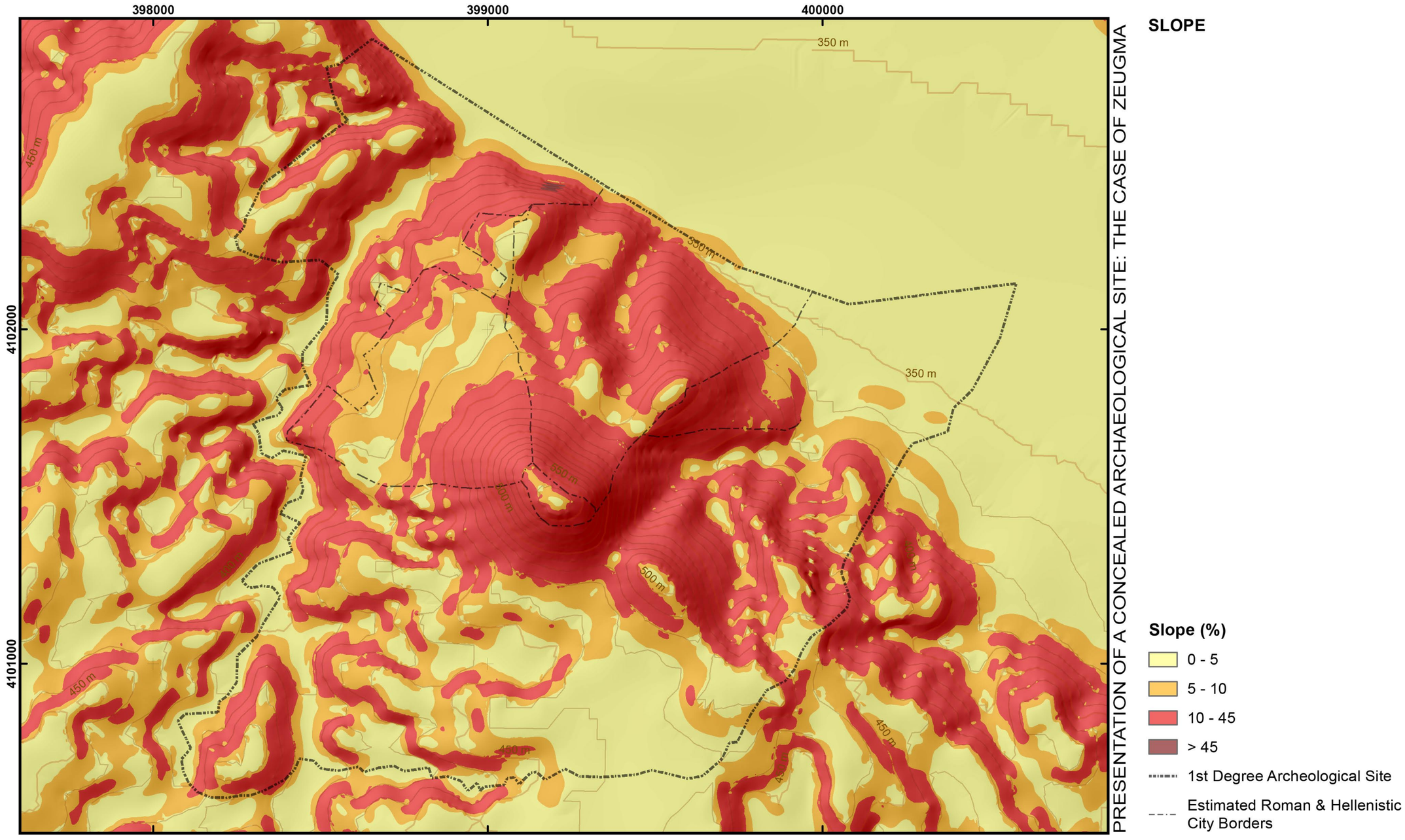


Figure 3. 35 Slope (Gündüz Çetinkaya, 2015)

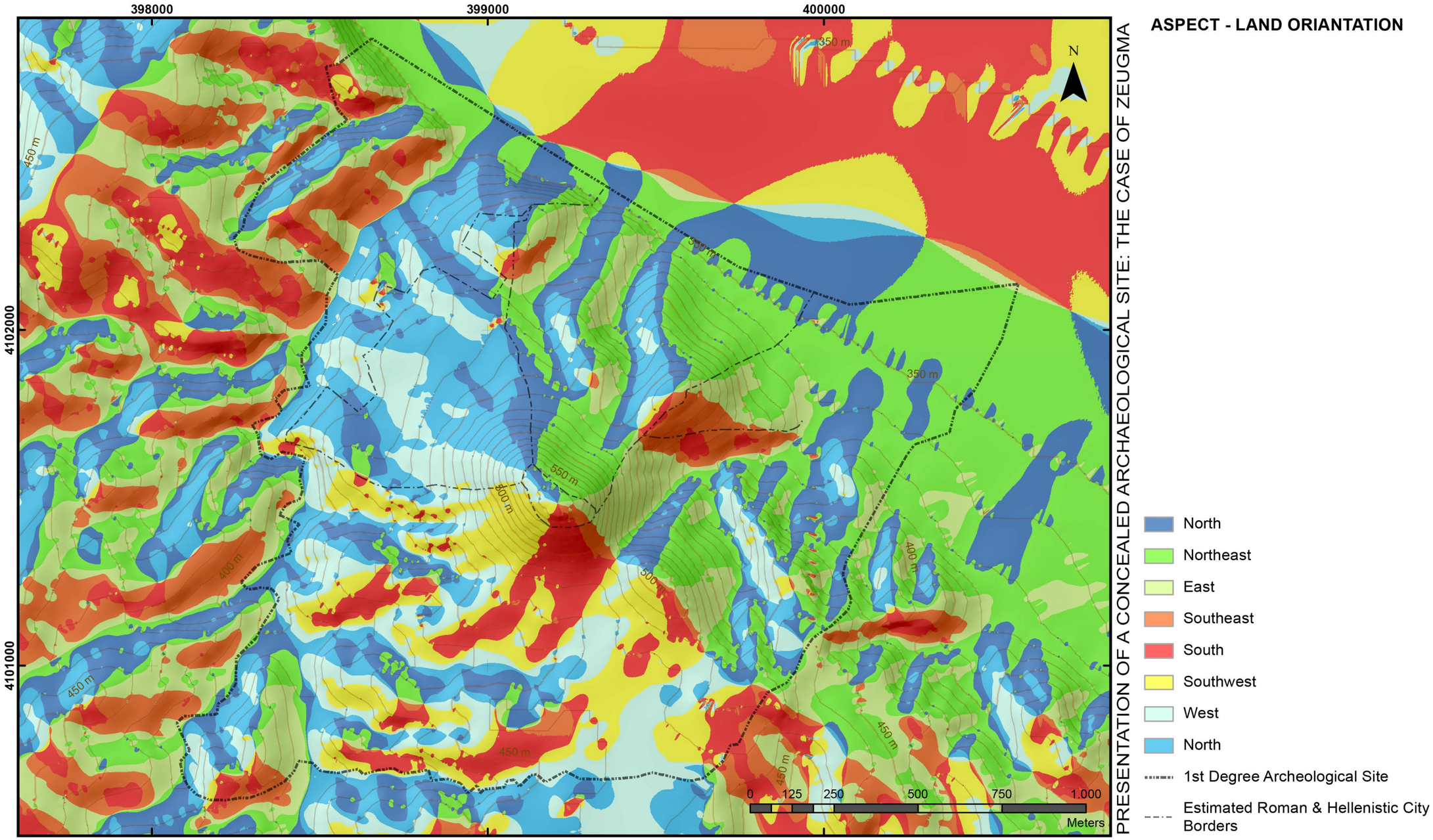


Figure 3. 36 Aspect - Land Orientation (Gündüz Çetinkaya, 2015)

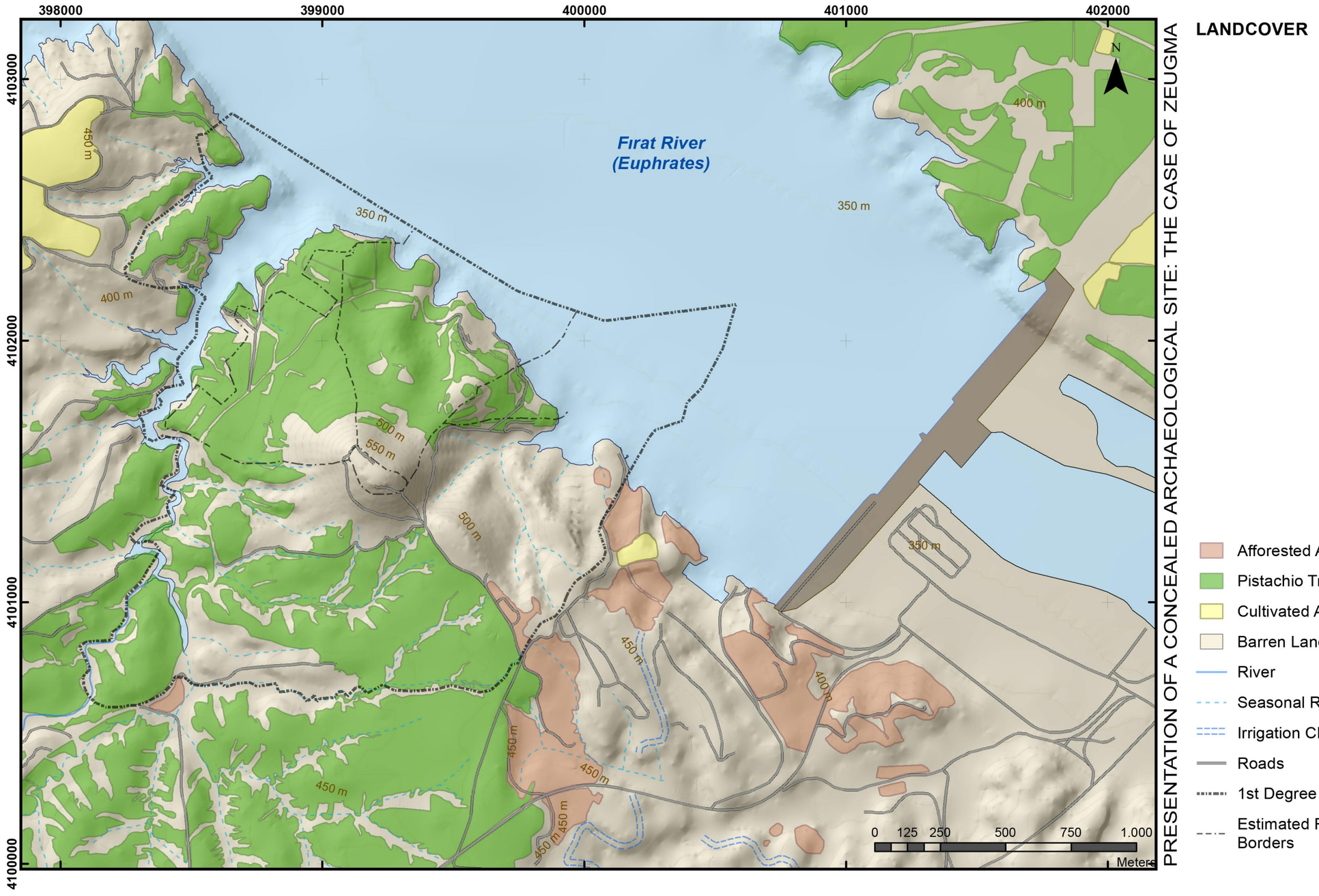


Figure 3. 37 Landcover (Gündüz Çetinkaya, 2015)

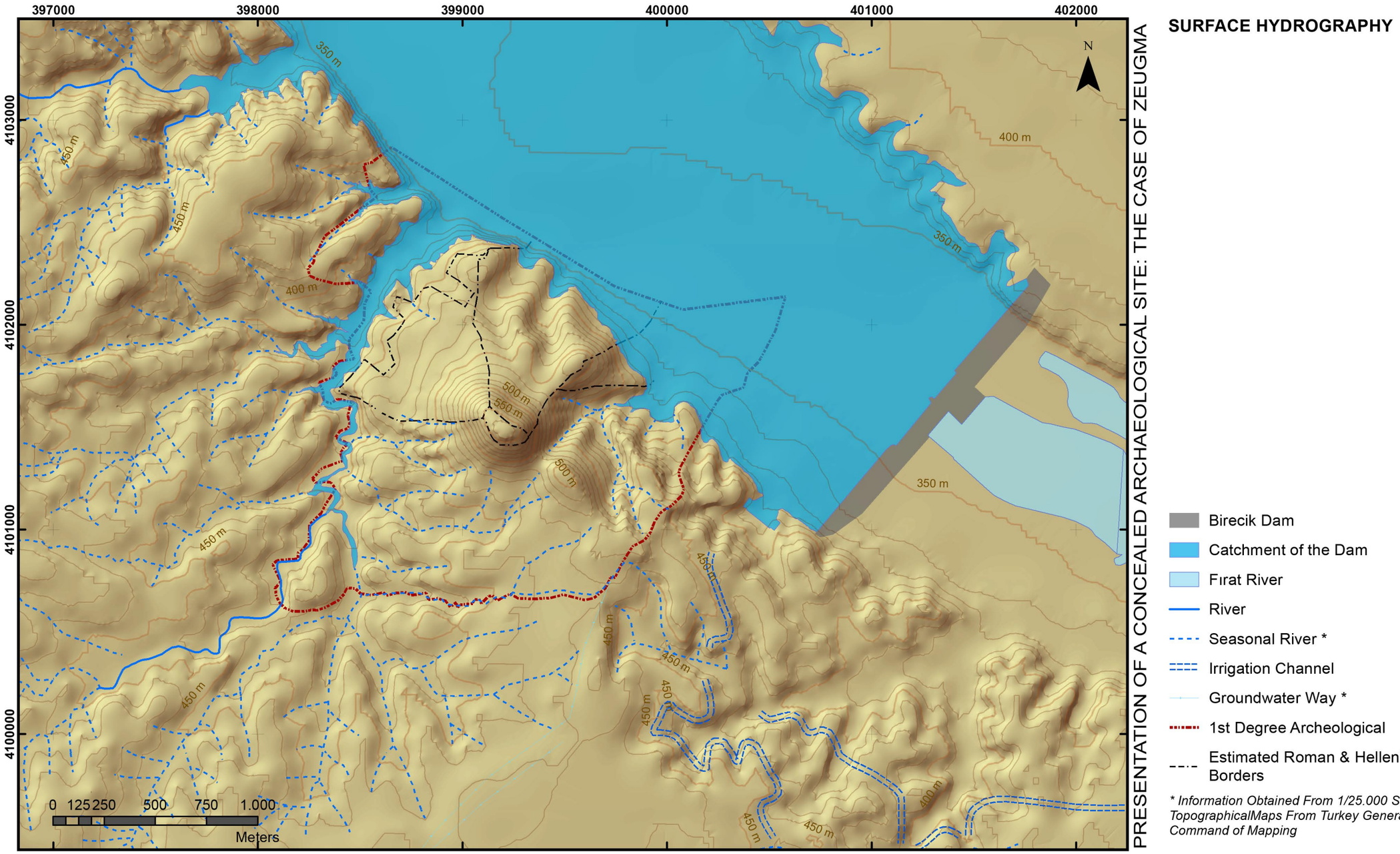


Figure 3. 38 Surface Hydrography (Gündüz Çetinkaya, 2015)

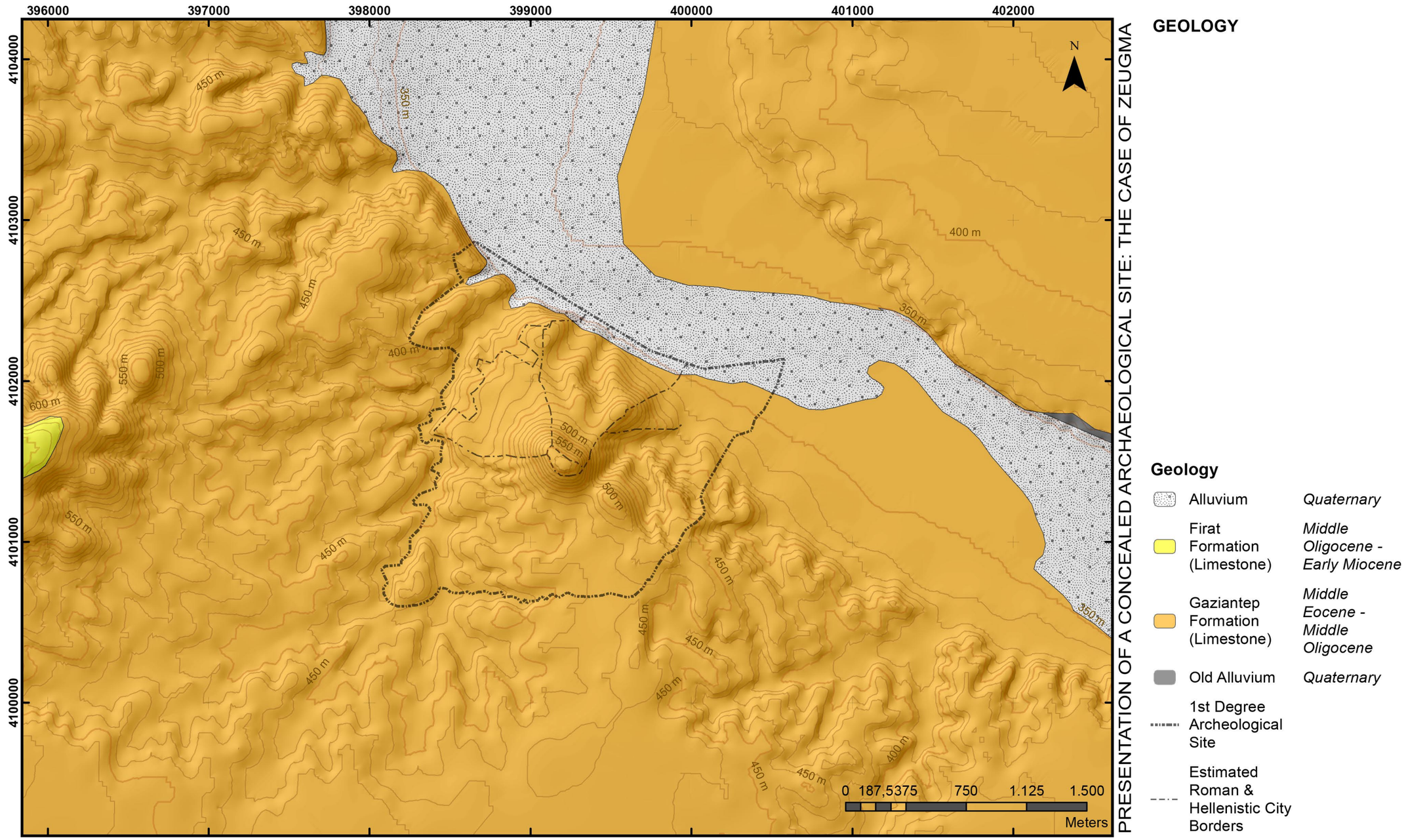


Figure 3. 39 Geology (Gündüz Çetinkaya, 2015)

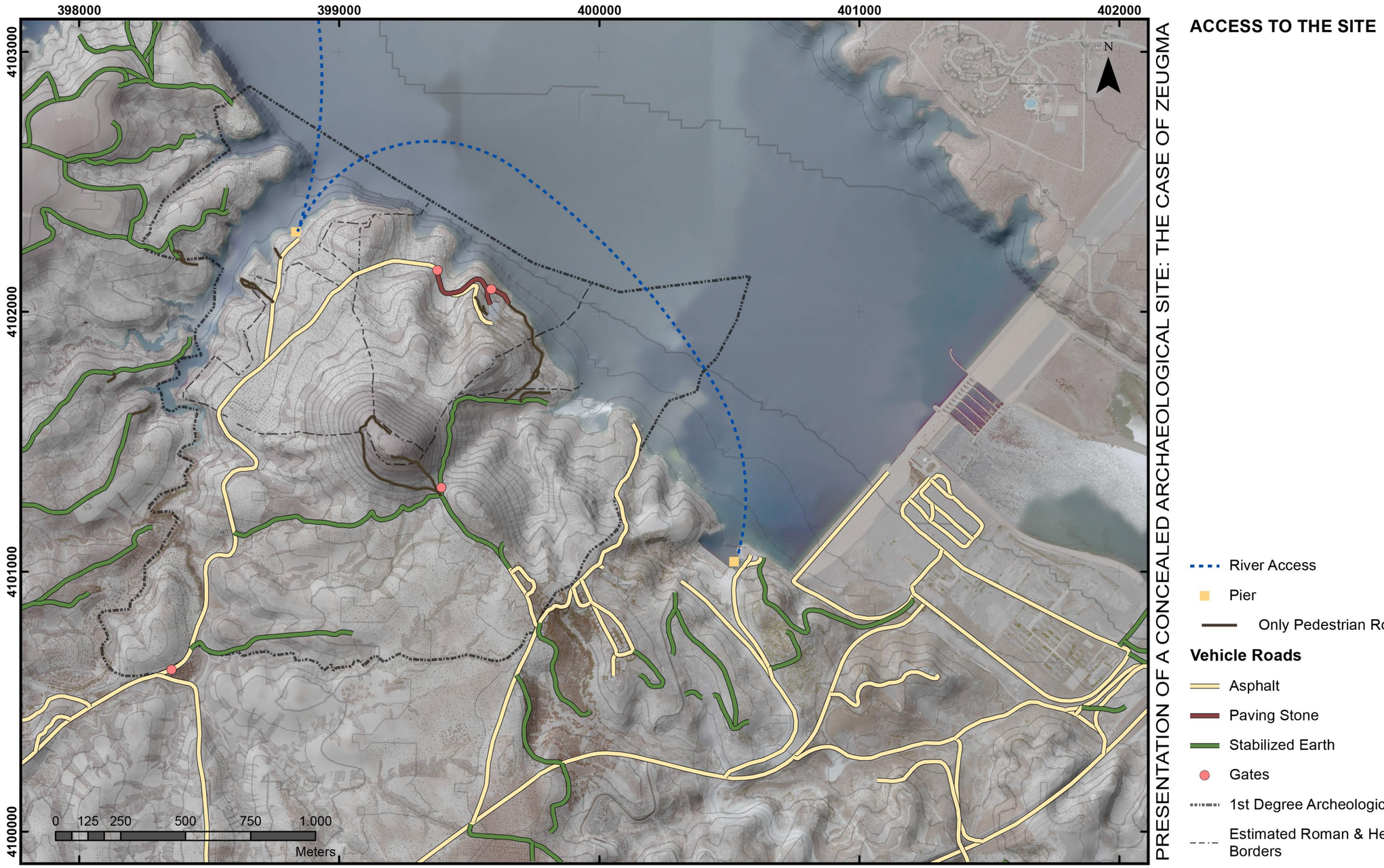


Figure 3. 40 Access to The Site (Gündüz Çetinkaya, 2015)

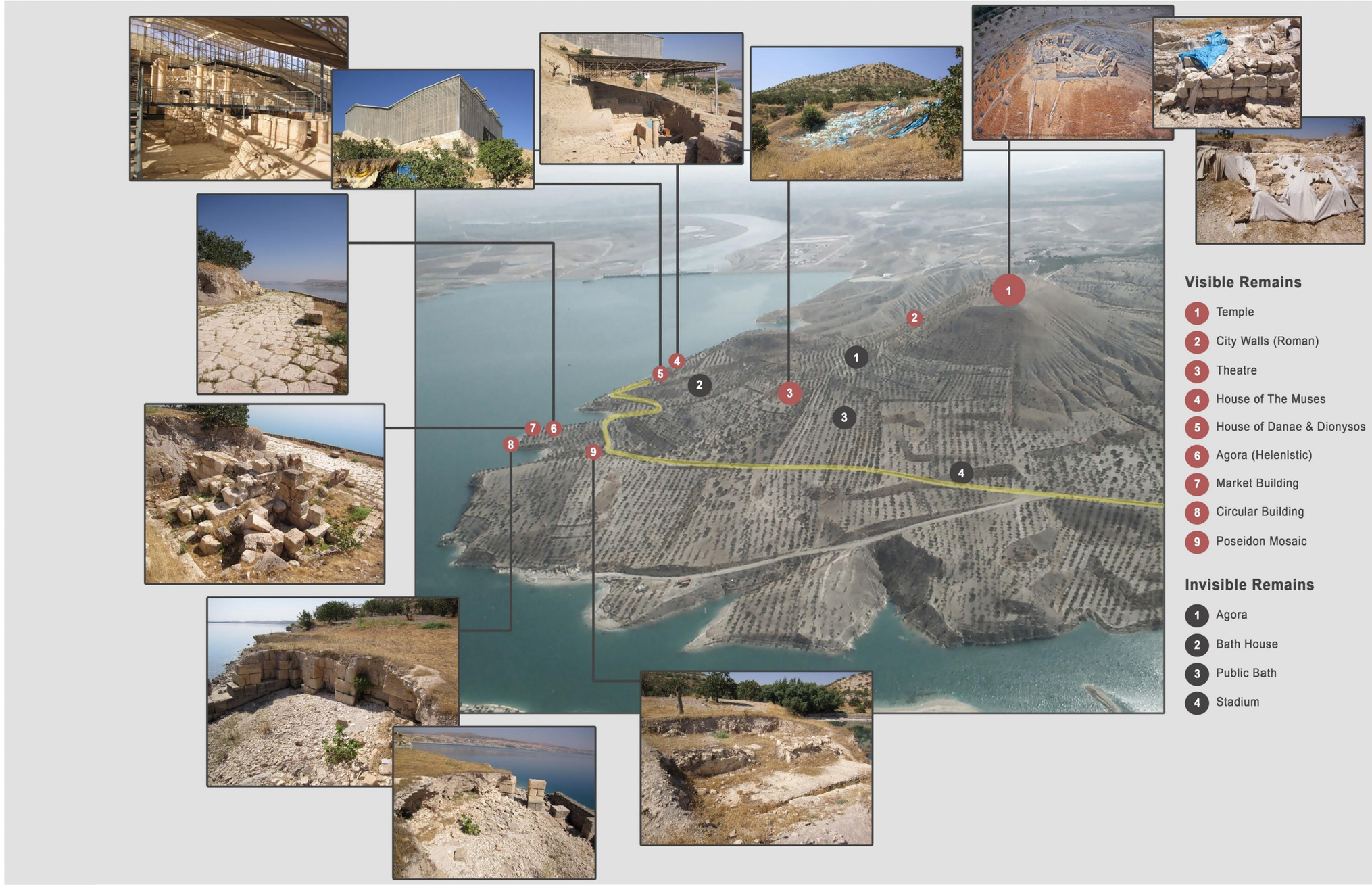


Figure 3. 41 Visible and Hidden Archeological Remains (Gündüz Çetinkaya, 2015)

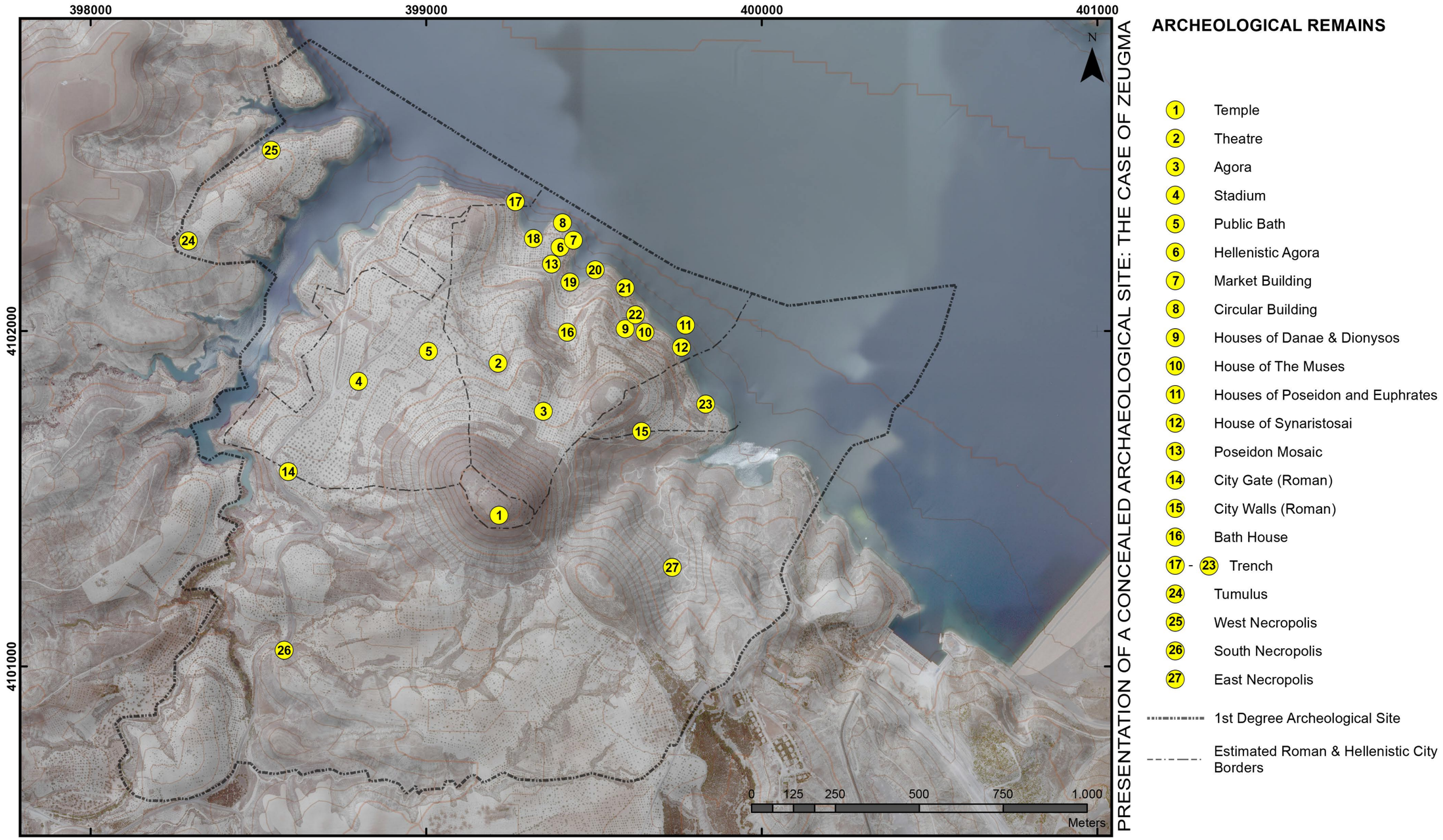


Figure 3. 42 Archaeological remains (Gündüz Çetinkaya, 2015)

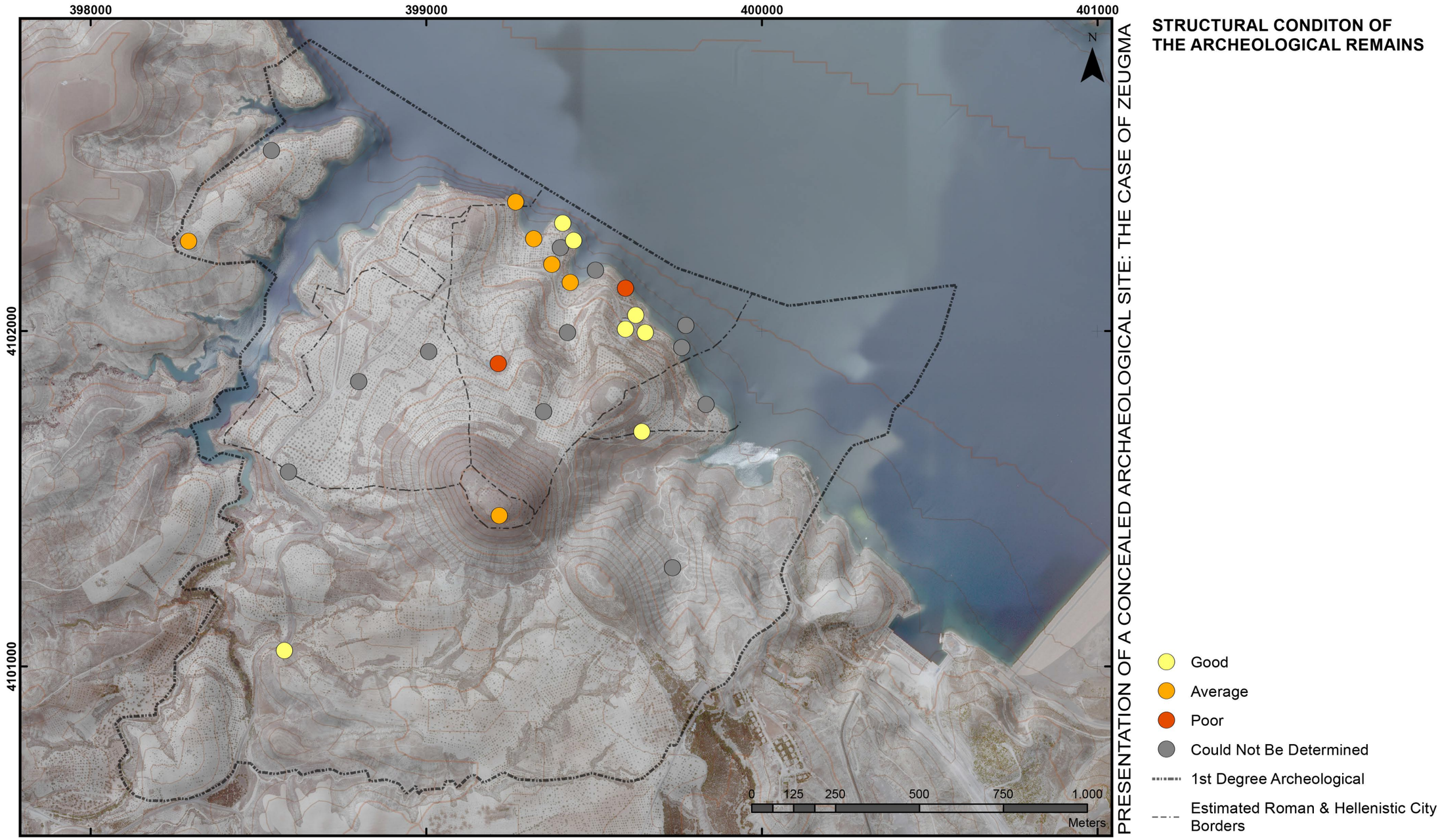


Figure 3. 43 Structural condition of the Archaeological remains (Gündüz Çetinkaya, 2015)

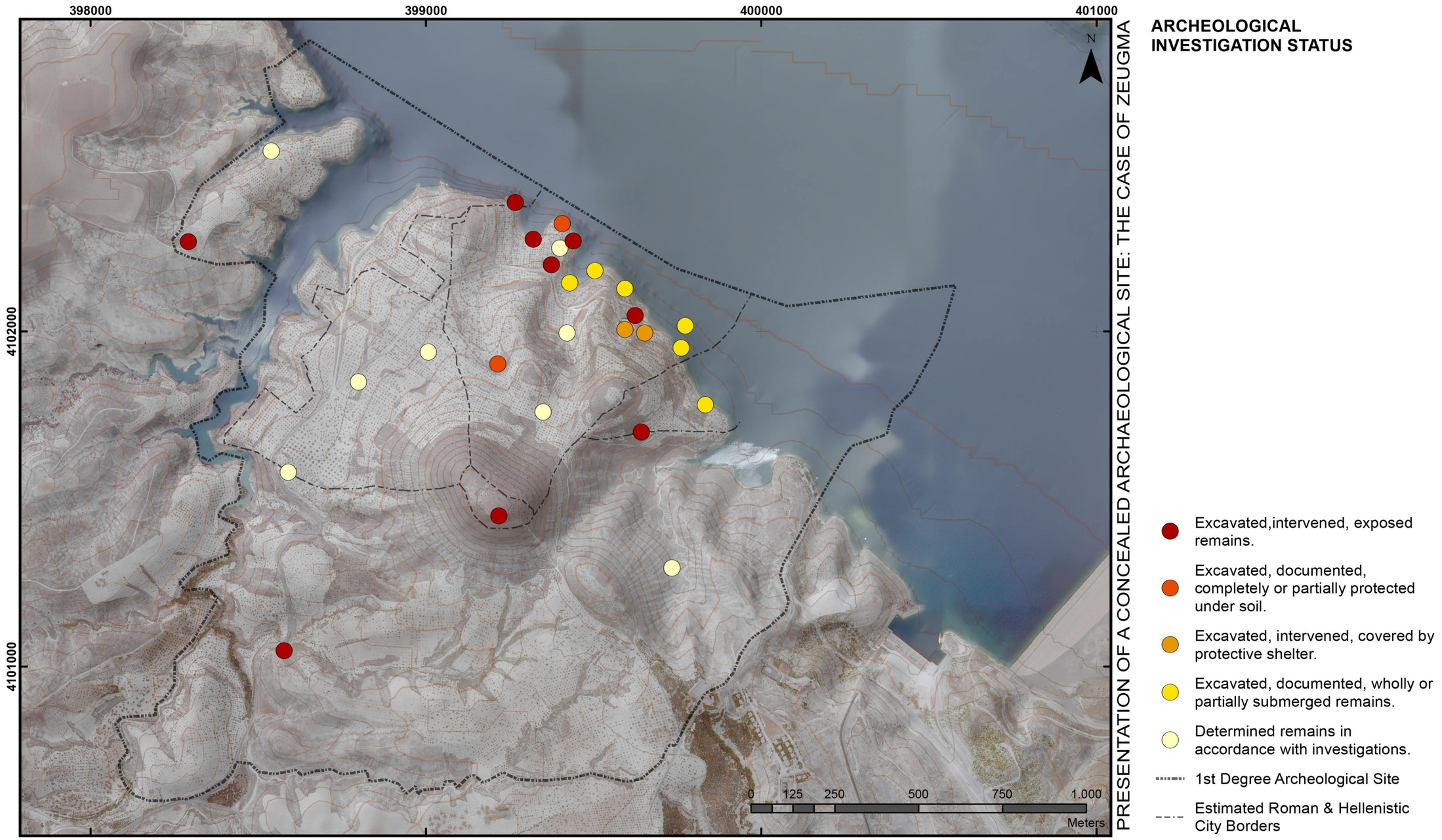


Figure 3. 44 Archaeological Investigation Status (Gündüz Çetinkaya, 2015)

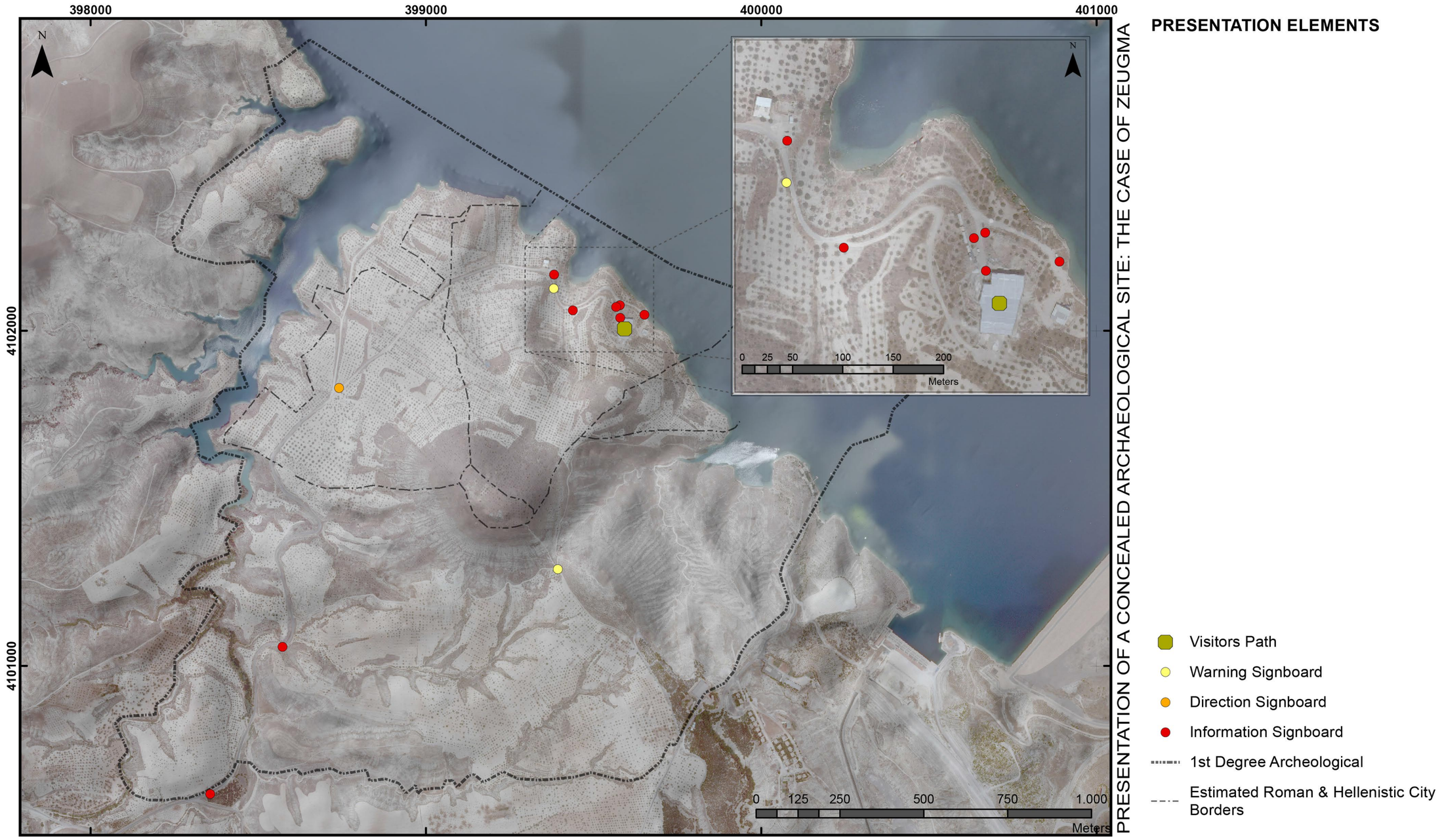


Figure 3. 45 Presentation Elements (Gündüz Çetinkaya, 2015)



Figure 3. 46 Built Environment (Gündüz Çetinkaya, 2015)

3.3.4. In-situ and Ex-situ Presentation of Zeugma

The city of Zeugma is 66 km from the nearest airport, 58km from Gaziantep city center and 10 km from Nizip. As such, visitors have to make special efforts to reach the site. On the other hand, the remains formed during the excavations in the city are kept under the soil as they are not resistant to the outdoor conditions or they are invisible because they are under the water of the Birecik dam reservoir. The area designed for the presentation of this concealed settlement to the visitors is the areas under the protective shelters as mentioned in the previous headings (Figure 3. 47, Figure 3. 48).



Figure 3. 47 Remains Presented Under the Main Protection Shelter - House of Danae and Dionysos (Gündüz Çetinkaya, 2012)

Under these protection shelters, rather than small finds or mosaics, the structures themselves are exhibited. In addition to the finds from the rescue excavations, the findings from these trenches under the protection shelters are exhibited in the Zeugma Mosaic Museum in the city center of Gaziantep.



Figure 3. 48 Remains Presented Under the Protection Shelter - House of Moses (Gündüz Çetinkaya, 2012)

Zeugma Mosaic Museum is approximately 57 km away from the settlement itself. On September 9, 2011, this museum has been moved to its specially designed building (Figure 3. 49). The Zeugma Museum building consists of three different buildings. The congress and cultural center, the mosaic museum, exhibition and conference center, and the archaeological museum form the museum complex (Figure 3. 50). Most of the mosaics, wall paintings, sculptures, seals, grave steles and sarcophagi from the ancient city of Zeugma are exhibited in this museum. The museum has been known as the second largest mosaic museum in the world based on the number of mosaics it has. It is possible to see almost all of the portable artifacts gathered from the rescue excavations in the ancient city of Zeugma.

The locations of the artifacts in the museum were chosen by emulating their positions in the ancient city of Zeugma. In other words, while the artifacts from the part of the city near the Euphrates (Fırat River) coast were placed close to the entrance of the museum, the artifacts from the rising part of the city were placed far from the entrance of the museum. The intention was to give the feeling that the visitors began to travel from the lowest elevation of Zeugma and ascended towards the terraces of

the city. However, this effect cannot be felt because of the impressive context and topographic features of the ancient city of Zeugma are not in the museum. Moreover, the Gypsy Girl Mosaic and the Mars Statue, which have become almost a brand value of the settlement, were specially positioned in the museum.

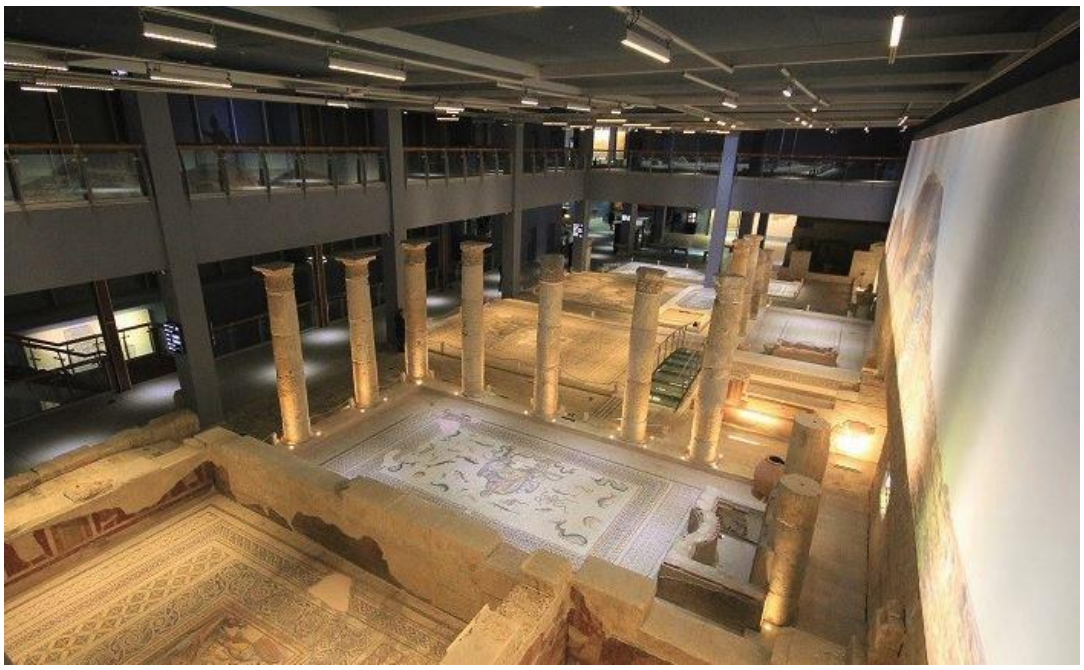


Figure 3. 49 Zeugma Mosaic Museum (Gündüz Çetinkaya, 2012)

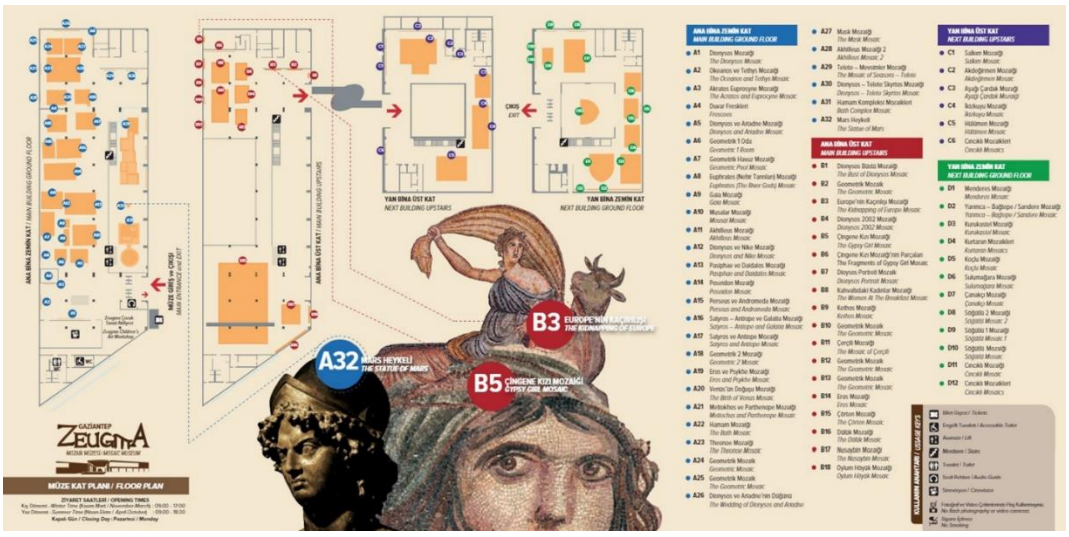


Figure 3. 50 Zeugma Mosaic Museum Floor and Exhibition Plan. Source: http://www.zeugma.org.tr/mkp.aspx, last accessed in 20 December 2018

While the kiosk at the entrance of the museum provides visitors with general information about the site, in the Zeugma mosaic museum, the first event that meets the visitor is a 12-minute 3-D video demonstration to describe the history, context, and meaning of Zeugma (Figure 3. 51). In addition to this, visual light plays have been designed especially for attracting children (Figure 3. 52).

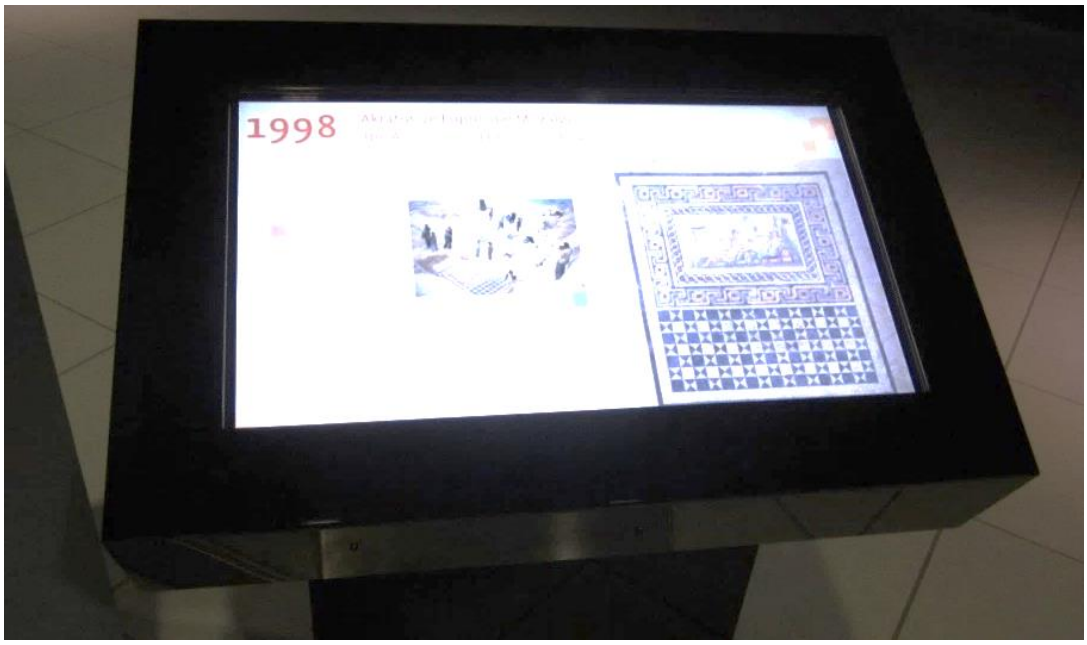


Figure 3. 51 Kiosk at Zeugma Mosaic Museum (Gündüz Çetinkaya, 2011)



Figure 3. 52 Visual Light Plays for Children at Zeugma Mosaic Museum (Gündüz Çetinkaya, 2012)

After obtaining general information about the field, the artifacts with information boards can be enjoyed (Figure 3. 53). In the museum, a layout was designed in which an artifact can be viewed at different angles and at different levels. In addition, there are brochures and booklets with brief information about the artifacts of different concepts. Although there are enough guides in the museum, it is possible to visit the museum without the need of a guide thanks to audio tools.



Figure 3. 53 Information Signboards at Zeugma Mosaic Museum (Gündüz Çetinkaya, 2011)

In addition to the Zeugma mosaic museum, other ex-situ presentation of the ancient city of Zeugma is the virtual tours on the internet (Figure 3. 54). [22] For now, only the virtual tour of the site can be visited, however, there are ongoing works that will allow the Zeugma mosaic museum to be visited in a virtual environment.



Figure 3. 54 Screenshot from 3D tour. Source: http://www.zeugma.org.tr/sanaltur.aspx, last accessed in 24 December 2018

The researches and studies on the topics listed above going to be used to evaluate the values, problems, and potentials of the site to be presented. In other words, it has been ensured that the needs, strengths, problems of the site and threats on the site are presented in a way that can be interpreted by non-professionals or visitors.

[22] The area under the protective roof in the Zeugma archaeological site can be visited via the website http://www.zeugma.org.tr/sanaltur.aspx in a virtual environment.

CHAPTER 4

EVALUATION OF THE SITE IN TERMS OF VALUES, PROBLEMS, AND POTANTIALS AS A SITE TO BE PRESENTED

In this part of the study, evaluations were made in the light of previous theoretical researches and literature researches and investigations to understand the present situation of Zeugma. These assessments are dealt with precisely because they are important inputs that will form the basis for decisions to be made for the site.

The aim of understanding the values of the site is to be able to determine which components of this area to be presented, emphasized and will become part of the fiction that visitors will be involved in, while the problems of the site have been identified in order to describe the solutions in a healthy way or just to refer them for future decisions. Besides the values and problems, understanding of the potentials of the site will serve to form the decisions that will be made.

In order to determine the values, problems and potentials of the Zeugma archaeological site as of the date of the study, the current state of the city, its historical process and its phases have been investigated. These studies include both literature review, site survey and interviews with people involved in the settlement.

4.1. Values

Assessment of the values of a heritage has a very fundamental role in any conservation activity that this assessment strongly shapes the decision stage (Mason, 2002, p.3). Accordingly, the values stated below form the significance of Zeugma that a presentation project directly aims to transfer to the audience.

4.1.1. Historical Values

Historical periods and events which are important and meaningful are considered as the historical value of the settlement.

- The main components of the Zeugma archaeological site, Seleucia and Apamea, were founded 2300 years ago as a city shaped by a combination of eastern (Semitic) and western (Roman, Hellen) culture. The Zeugma archaeological site is of great historical importance to understand the integration of the Hellenistic and Semitic cultural areas and the emergence of syncretistic hybrid cultures in the region.
- Zeugma, which is a passage and border city, has soon turned into a great legion settlement. One of the most important legions of the Roman Empire, IV. Legion (Scyhthica), have been placed in the city of Zeugma with the purpose of protecting the east of The Empire. This period is the richest period of Zeugma culturally, artistically and architecturally. The finds from this period differentiate Zeugma from the similar settlements within the same geography with their diversity, quantity and qualification.
- Since Zeugma has both Hellenistic and Roman settlement, it has gathered historical information from both periods in one place.
- Zeugma has a unique position in Commagene, because the clustered cults and the ruling cult of the Kingdom of Commagene are represented by two sacred sites, which are blessed by Antiochus in the city. These are the main sanctuary on the top of Belkis Hill and the sanctuary in the Hellenistic Agora. The archaeological findings uncovered in the excavations in these sacred areas show that the city, Antiochus, plays a key role in its efforts to connect the west (Greek) and East (Persian) cultural areas in accordance with the key position of the Kingdom between these two worlds in the Euphrates (Fırat) River.
- Zeugma hosted a king's wedding, the wedding of the Seleucid king Antiochos I and the princess Laodice, the sister of the king of Cappadocia.

- Zeugma has hosted many Roman, Macedonian, Egyptian, Syrian, Komagene rulers and commanders.
- Zeugma has served as a customs gate in trade between east and west for a long time.
- Zeugma has been the subject of many mythological stories and legends.

4.1.2. Antiquity (Age) Value

The value of antiquity, which is a historical (emotional) value, is shaped by social structure and cultural or ideological substructures. The value of antiquity in an area is directly related to the authenticity of that area, and these two concepts support each other positively. Accordingly, it can be said that Zeugma has an antiquity value as a settlement with its age and preserving of its originality.

4.1.3. Authenticity Value

Authenticity value directly depends on the originality (being real, not fake or imitation, unchanged) of different components or elements of heritage places (Özçakır, 2018, p.90). Authenticity value of Zeugma, as a very preserved archaeological site, is one of the values of the site.

4.1.4. Documentary Values

Any clues or residues that have the potential to provide information about the time period the heritage belongs are considered as the document value of the settlement.

- Zeugma gives information about the city morphology and architecture in both the Hellenistic and Roman periods.
- Zeugma provides information on the lifestyles of people, daily life technologies and comfort conditions for both the Hellenistic and the Roman periods in the east. Zeugma remain mostly uninhabited and intact after being destroyed during the raids of Sasanian. For this reason, due to the dramatic end, comparable to Pompeii, it is an invaluable repository of information about everyday life in a large Roman border town in the middle of the third century.

- Numerous seals and written sources found in Zeugma provide information on the histories, regime, rulers and important events of the respective periods.

4.1.5. Archaeological / Architectural Values

It is considered as an archaeological and architectural value that the built environment to show different characteristics according to its contemporaries or to have an integrity with its contemporaries.

The ruins, which are the concrete sources of the process of evolving the remains from the Hellenistic period to the Roman city as an eastern settlement, carry the archaeological and architectural value to the forefront for this settlement.

First of all, it is known that people from different income and social groups live together in Zeugma. This situation had added many layers to the city in its historical process, which is not likely to be seen in any Hellenistic or Roman city. Hence, the settlement differs from the other examples with all these properties (Aylward, 2013, p.30).

In addition, Zeugma, which already has a highly qualified public structure, is a settlement that reveals its splendor, multilayering and diversity in civil structures. The villas displayed under the shelter belong to the Roman residents of the city. Owners of these houses have been estimated to be rich traders or commanders. Therefore, these dwellings provide us with information on the daily life of an inhabitant. In addition, these houses with mosaic shallow cooling pools (impluvium) and with particular plan layouts have been distinguished from contemporary examples with distinct lines. The water element in the public and civil buildings is very important in this settlement, which is a water passage that is established by the river. This situation is manifested in both mosaics and wall paintings. The most important archaeological values of the area are mosaics whose artist or owner inspired from unique or mythological narratives. In addition to the mosaics, there are also many statues, stele and seals, which can be considered as archaeological values, providing information on the history and identity of the city (Aylward, 2013, p.26).

4.1.6. Social Values

Burra Charter (ICOMOS, 1984) defines social value as an embracement of the qualities for which a place has become a focus of spiritual, political, national or another cultural sentiment to any group of people. In other words, social value of a heritage is a concept refers to facilitating social connections, networks or other kind of social relations (Mason, 2002, p.12).

- The Zeugma archaeological site has contributed to the development of a social awareness on the protection and conservation of cultural heritage with its grievances such as inundation, rescue excavation processes and looting. This process, which promotes awareness of conservation, has led to the acquisition of a collective social reaction experiences as well as actions and measures that can be taken in cases where cultural heritage will be harmed.
- The community, which lives in the nearby settlements such a multi-layered settlement has the opportunity to gather and connect with both history and each other.

4.1.7. Aesthetic/Artistic Values

Aesthetic/artistic value refers to the visual qualities of the heritage with all components (Mason, 2002, p.12). Moreover, this value could be called as a sensory experience including the perceptions of the form, scale, color, texture, material or smell and sound (Özçakır, 2018, p.91). In this vein, objects, ornaments or any other component which are constructed with aesthetic perceptions and concerns and shaped by the living conditions and conjuncture of the time have been evaluated as aesthetic value.

It is known that the ancient city of Zeugma was a passage, trade and garrison city in its glorious times, as well as a settlement where the most masterful works of art were produced. This situation makes it possible to see the fine works of art from many art branches as well as to understand the spirit and realities of the period in which the work is revealed.

Zeugma is famous with its mosaics and there are many mosaics were found in the city in different styles and compositions. Some of the buildings where the mosaics found are both civil architecture structures and public buildings. What makes Zeugma mosaics unique and valuable are the multiplicity of small parts found in the unit area, the variety of colors, the masterly blending of color tones, the depth and perspective of the mosaics, and the written names of the artist on the mosaics (Figure 4. 1).

In the city of Zeugma, the cult of sculpture is well developed compared to its contemporaries in the region. Most of the works produced by sculptors such as a statue, relief or grave stele have been enriched by the multi-layered and cultural diversity of the settlement and become unique examples (Figure 4. 2). There are many examples in the settlement where the stories of different cultures are blended with the styles of different cultures and cultural diversity contributes to the enrichment of art.

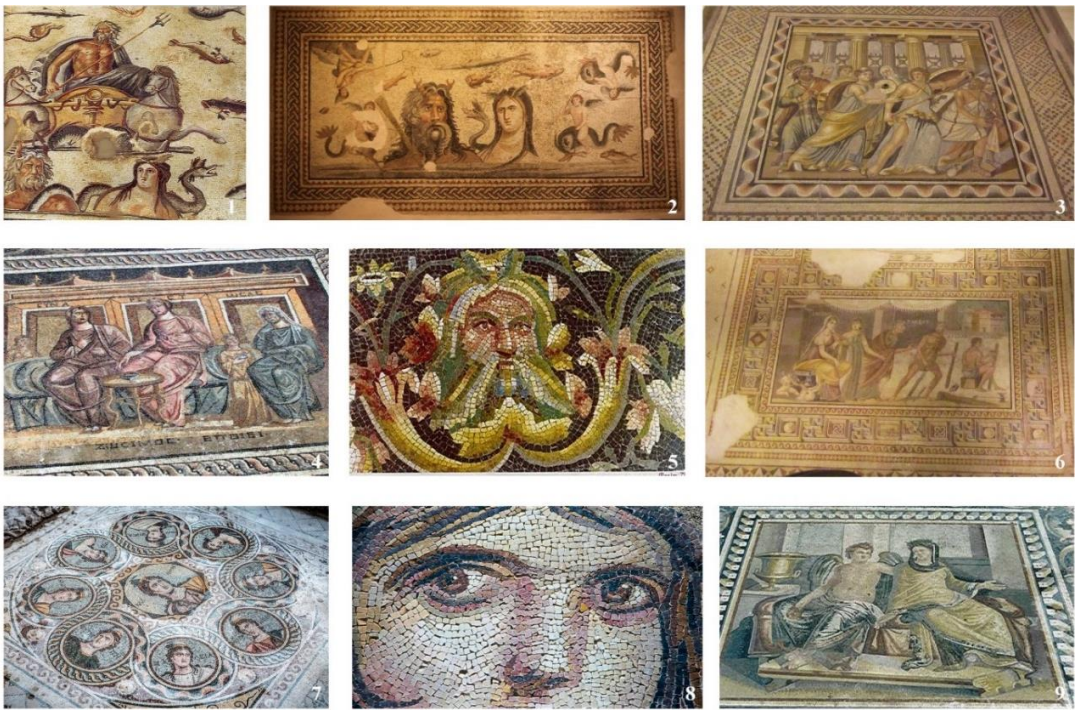


Figure 4. 1 Mosaic examples from archaeological site of Zeugma[23]

[23] 1-Detail from Posseidon, Oceanus and Tethys Mosaic, 2-Oceanus and Tethys Mosaic, 3-Akhilleus Mosaic, 4-Breakfast Table Mosaic, 5-Akheloos, King of the Euphrates Mosaic, 6-Daidalos Mosaic, 7-The Muses Mosaic, 8-Detail from Gypsy Girl Mozaic, 9-Eros and Psykhe Mosaic.

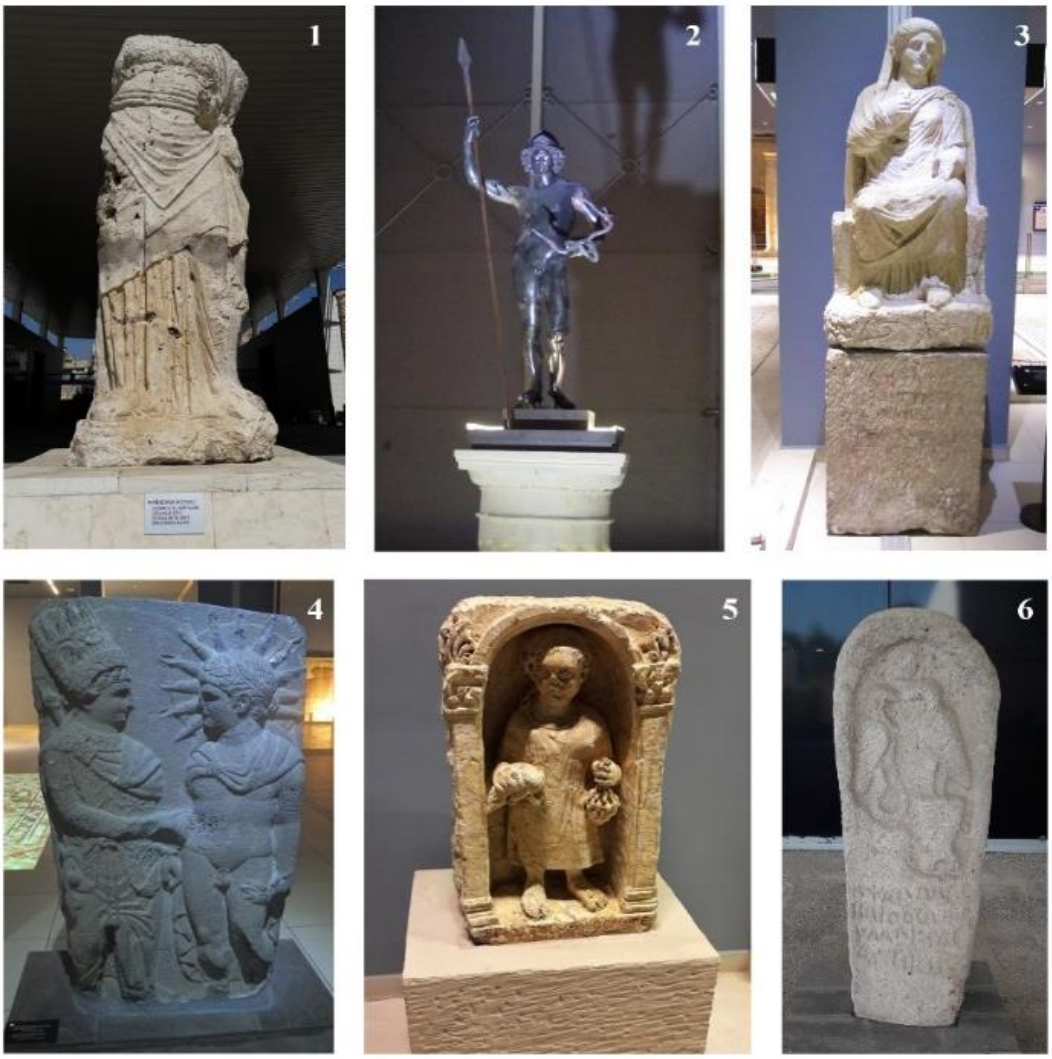


Figure 4. 2 Sculpture and stele examples from archaeological site of Zeugma[24]

4.1.8. Landscape Value

The landscape value corresponds to an emotional bond that people develop with natural or human-made elements such as the river, vegetation, topography or a dam and feelings coming from these elements enable this connection to be established. These elements, which are a common link between people or social groups of a particular region, have been considered as landscape value.

[24] 1- Statue of Minevra, 2- Statue of Mars (Ares), 3- Statue of Sitting Women, 4-5-6 Excamples of Steles.

- The Euphrates (Fırat) River, which contributes to the meaning of the settlement, is a landscape value of the area as a water element (Figure 3. 33) (Figure 4. 3).



Figure 4. 3 The Euphrates (Fırat) River from the shore of Zeugma (Gündüz Çetinkaya, 2012)

- Another reason behind the existence of Zeugma, such as the Euphrates, is the geographical privilege of this area. This privilege arises from where the settlement is strategically important as a passage connecting both sides of the Euphrates and eastern and western cultures.
- Pistachio trees are one of the main livelihoods of the region and the most dominant vegetation of the region's landscape. It has been contributing to the landscape value of the area with being a relatively rare plant and the texture formed by the trees (Figure 4. 4). In ancient times, it is known that wine grapes were exported to Persia and India. In addition to grapes, plums, figs, and famous small onions are notable export commodities (Ertan & Ertan, 2000, p. 35).



Figure 4. 4 Pistachio trees in the archaeological site of Zeugma (Gündüz Çetinkaya, 2011)

- The topography where the settlement is located has a dramatic form on its own. The topography of the settlement is a very important landscape value with both the creation of many vista points and its remote perception (Figure 3. 10).
- Although Birecik dam and dam lake have damaged both Zeugma and other nearby historical settlements, it can be considered as a viewable human-made landscape value today (Figure 4. 5).



Figure 4. 5 Birecik Dam (Gündüz Çetinkaya, 2015)

As a result, the ancient city of Zeugma is a settlement that has many values, displays some of these values as it is, and hides many of them. The visible values of the settlement and their geographical locations were shown by Figure 4.6.

4.2. Problems of Zeugma

The Zeugma archaeological site contains many problems that can be explored under different headings. Although some of these problems come from Zeugma itself, a significant part of the problem arises from inadequate management of the area and problematical approaches to the situation of the area.

4.2.1. Problems Related with the Site and Archaeological Remains

The most critical of the problems identified in the area is that the remains are **concealed** by being under water or soil. One of the reasons underlying this problem is that some of the stones used in the period when the settlement was built were not resistive to outdoor and weathering conditions today due to their failure to come from the quarry (Figure 4. 7, Figure 4. 8). **Consequently, the impermanence of the stone has been pushing professionals working in the site to the protection solution under soil until better methods are found and finally artifacts remain concealed.** Another reason for the fact that the remains in the Apamea and Zeugma archaeological sites are concealed is that this area is inundated by the Birecik Dam Lake. The reason why some part of the Zeugma has been flooded by a dam is because the process of determining the dam location is not well managed and irreversible errors have been made in this process.

Zeugma's being concealed situation brings about an **integrity problem** that the settlement cannot be perceived as a whole. This integrity problem could be observed in three main extends. The first of these is that the twin towns, Zeugma and Apamea, which are the passage portals on both sides of a river, separated from each other visually with the rise of waters in the reservoir. Another is the loss of visual integrity, in the scale of Zeugma itself, that a part of Zeugma has been swallowed by the rising dam waters (Figure 3. 20). The last one is due to the lack of durability of structural stone does not let the professionals to leave them visible and the existing excavation policies thus; the visual relationship of the settlement is weak or broken. This problem is fed for different reasons and the first one is that the zones and trenches studied in

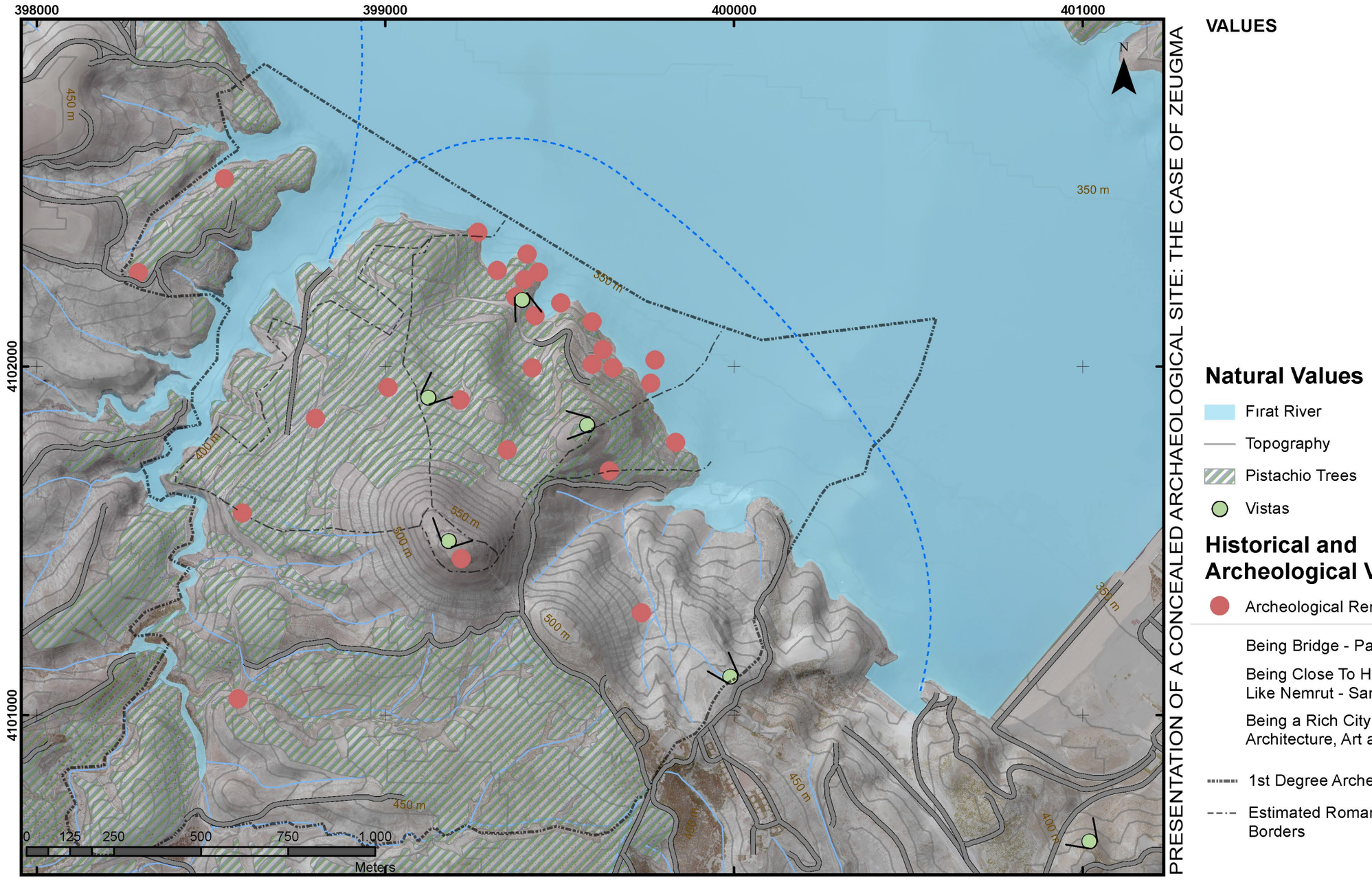


Figure 4. 6 Values (Gündüz Çetinkaya, 2015)

the area remains disconnected and unrelated depending on the excavation and research policy (Figure 4. 9). Another reason for this problem is the fact that the remains on surface must be exhibited under the protection shelters that the remains disappear in time due to the weakness of stone and all of these detaches the area from the context and the setting.

One of the most important negative impacts in the site is the agricultural activities in areas that are not yet expropriated. The site has been systematically expropriated since 2005 but has not yet reached the desired stage.

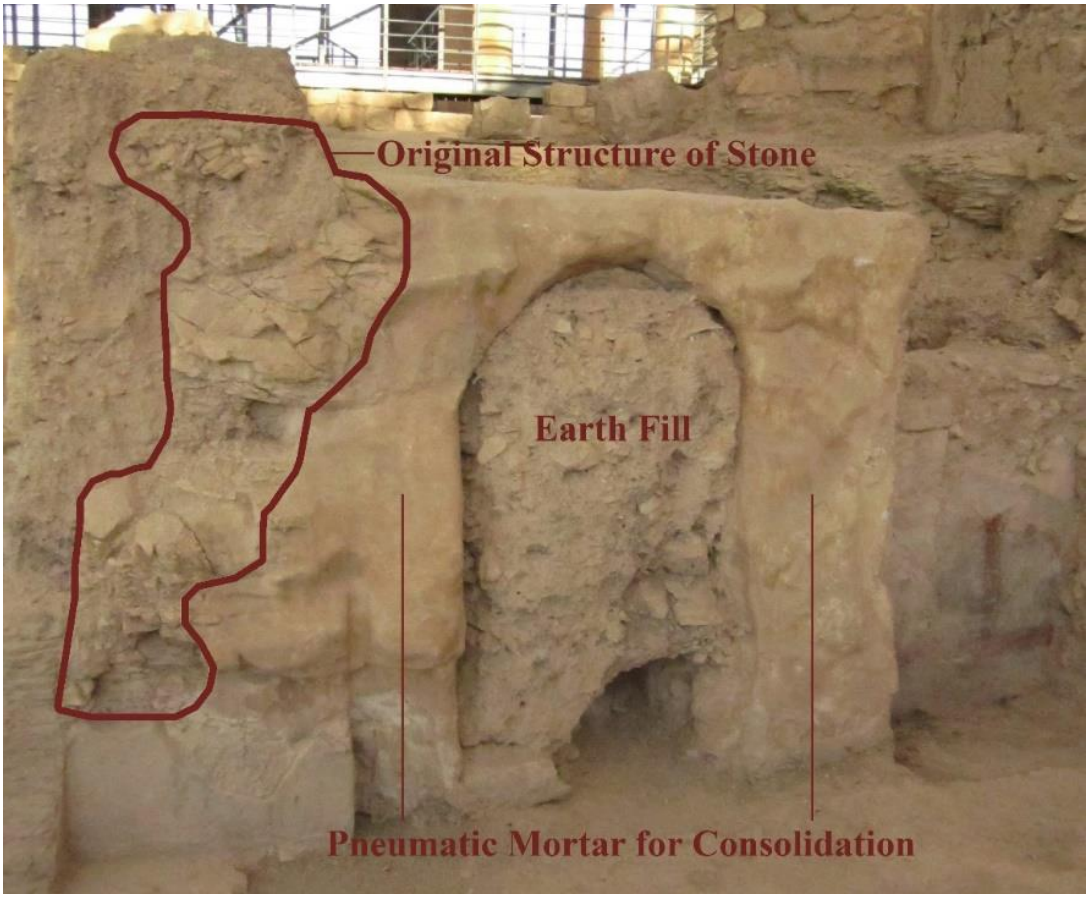


Figure 4. 7 Structural Condition of Remains under Protection Roof (Gündüz Çetinkaya, 2012)



Figure 4. 8 Poor Quality of Original Stones & Structural Condition of Remains from Belkıs Hill (Gündüz, 2012)

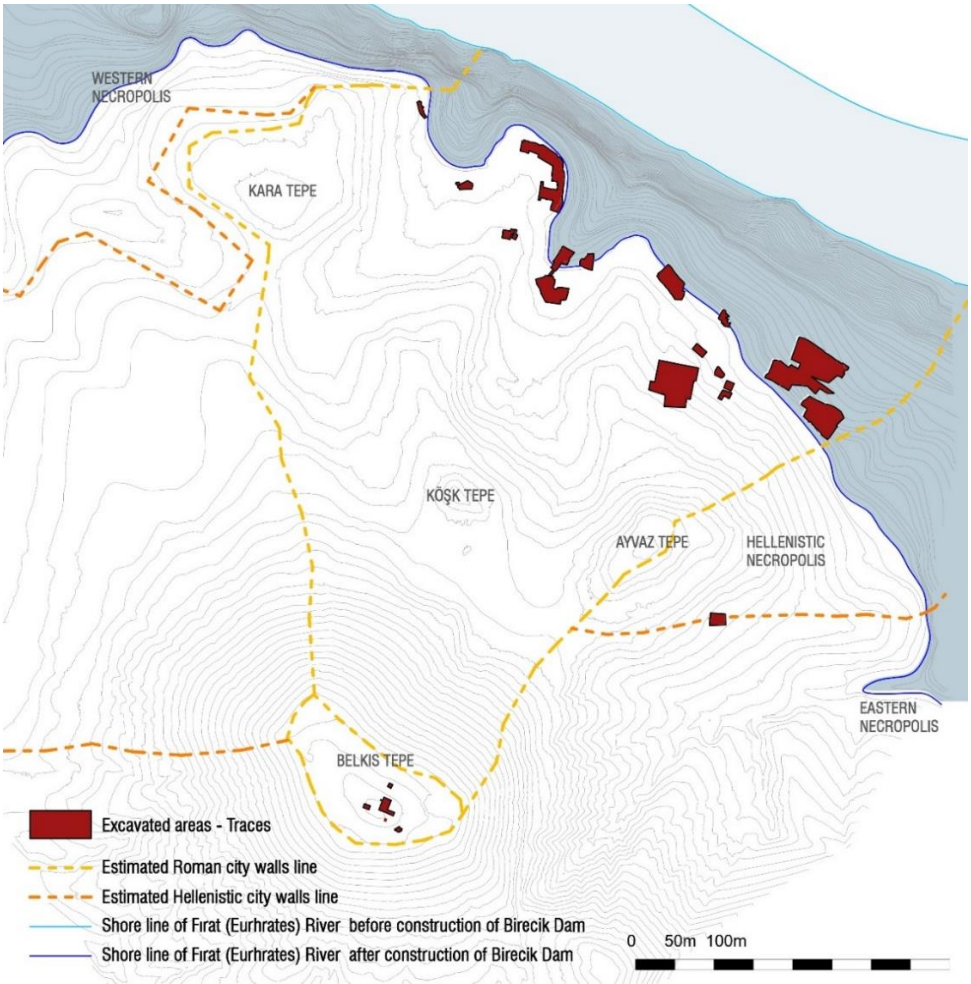


Figure 4. 9 Locations of the Traces (Gündüz Çetinkaya, 2015)

Another problem with the area and archaeological remains is the fact that illegal excavations, mostly dating back to the 90s, were realized. It is also known that many of the components that could provide information about the area were lost because of the findings obtained by illegal excavations were sold to foreign buyers until very recently.

4.2.2. Presentational Problems

The first of the problems related to the presentation is that it is difficult to reach the area. There are currently two different ways to reach the site; land and river road. The most difficult part of land transportation is the inadequate route signs, which means that someone who has never been to the site has difficulty in finding the destination. Difficult sides of transportation by river is that the river transportation is connected to certain tariffs and clocks but most of all it is not known by the majority of visitors. Moreover, the existing pier reached by the river is not directly related to the site (Figure 4. 10). In addition to all these, the entry or starting point and the boundaries of the site are not defined, regardless of the access method. There is also no previously considered car park and drop-off and pick-up area in the site.

Another problem related with the presentation is that there is no tour route organized in order to understand or interpret the area logically. It is impossible for visitors to find the remains, which are interspersed with different points in an area of approximately 70 acres, even when it is very difficult to perceive them by experts. There is no information or direction sign boards for the ruins other than the ones under the protection shelter southwest necropolis and the temple. In other words, there are not enough presentation tools such as information boards in the site and there is no seeking to the presentation methods required by the site (Figure 4. 10).In addition to all these, there is no solution for disabled people.

Most of the artifacts from the Zeugma archaeological site are exhibited in the Zeugma Mosaic museum, which is 58 km far away, due to the protection and security problem in the area. This distracts the focus on Zeugma and pushes the archaeological

site of Zeugma into the background, as visitors prefer the museum, which is easily accessible and more comfortable.

As mentioned before, the structural conditions of the remains in the area compel them to remain under a protective shelter (Figure 4. 11). This situation is making the exhibited area a single object that is separated from the whole. In addition, the fact that part of the settlement has been inundated and that no solution has been produced for the presentation of these areas is one of the problems that breaks the unity. Both problems mentioned above are problematic for the whole area to be perceived and interpreted by visitors.



Figure 4. 10 Locations of Zeugma & Tour Boat Pier (Gündüz Çetinkaya, 2019)



Figure 4. 11 Protection Shelter from Zeugma (Gündüz Çetinkaya, 2012)

4.2.3. Infrastructure and Facility Problems

It can be said that the study area is a very virgin area in terms of infrastructure and facilities offered. The previously mentioned illegal excavations are due to the lack of security measures in the area. In addition, there is no security scenario, or a chain of measures designed to protect the safety of employees or visitors in the area. Moreover, there is no defined escape or protection plan for any risky situation such as disaster or terror. In other words, in any adverse situation that may occur in the current situation, neither the settlement itself nor the people who may be in the settlement have received security measures.

Furthermore, while visitors coming to the area which is in a remote location to the settlement centers will have needs such as resting or eating-drinking, there are no active components serving these needs in the area (Figure 4. 12).



Figure 4. 12 Inactive Café Building (Gündüz Çetinkaya, 2012)

In addition to the major problems mentioned above, spaces such as the toilet, storage or security cabin, which are already needed in the area, were tried to be solved by placing containers that were not compatible with the site and were visually destructive (Figure 4. 13) (Figure 4. 14).



Figure 4. 13 Toilet Container at Zeugma Archaeological Site (Gündüz Çetinkaya, 2012)



Figure 4. 14 Container Unit at Zeugma Archaeological Site (Gündüz Çetinkaya, 2012)

Looking at the current situation, the presence of huge electric poles, obsolete and rusted warning signs in the middle of the site are also visually damaging and aesthetically unpleasing situations (Figure 4. 15).



Figure 4. 15 Visually Damaging Electric Pole & Warning Sign Examples (Gündüz Çetinkaya, 2012)

Moreover, walkways, garbage cans, mobile or stationary seats are the other deficiencies of the area where it is expected to walk around by visitors.

The problematic features of the settlement and their geographical locations were shown by Figure 4. 16.

4.3. Potentials of Zeugma

Although Zeugma and its twin town Apamea have been both actors and victims of their own problems, they have significant potentials thanks to their values. These potentials of the site are grouped under six main headings.

4.3.1. Archaeological and Historical Potentials

Zeugma is home to archaeological remains that reflect the diverse character of ethnic groups that blend together and form new syntheses. Only a small part of this settlement was scientifically studied. Therefore, many works that have not yet been found have significant potential both archaeologically and historically. As scientific studies carried out in the field continue, it is inevitable to reach a lot of information about lifestyles, settlement typologies, architecture, daily life practices and historical events in these settlements. This potential should be considered as having the possession of enough strength to give birth to new potentials and to strengthen the potentials of today.

4.3.2. Location Related Potentials

The first potential related to the location of the Zeugma archaeological site is the fact that it is in a highly accessible position by the help of providing the necessary infrastructure and transportation facilities. In this sense, the fact that it is accessible from both land and river diversifies and strengthens its potential in this regard.

Another important potential is the Zeugma's proximity to other historical areas such as Halfeti and Rumkale via the Euphrates (Fırat) river and Nemrut, Samsat, Karkamış, and Göbeklitepe via land access. The archaeological site of Zeugma is a

part of a whole of numerous archaeological sites located close to it, and with this feature, it also initiates and strengthens its tourism potential.

The most concrete location related potential of Zeugma is that the scenarios proposed in the Commagene Nemrut Conservation Development Program (CNCDP), including the Commagene city Zeugma, were already produced. This study produced scenarios where the visitor, who was on the Mount Nemrut, went down to Kızılin and reached Zeugma through the stops of Halfeti and Rumkale via the Euphrates (Fırat) River. The proposed tour route was also included in the Tourism Development and Management Plan that is a part of the SAP (GAP) 2002-2010 Regional Development Plan.

4.3.3. Geographical Potentials

The Euphrates (Fırat) River is a geographical potential in addition to its visual and aesthetic values. It can be considered as one of the most important geographic elements in the field thanks to its contribution to spatial wealth and transportation opportunities by supporting other potentials.

The topography of the settlement, combined with the Euphrates (Fırat) River, creates a visually qualified environment. This feature is further strengthened by the potential of the topography of the field to create vista points that look at various levels and various landscapes. This feature by diversifying the view also creates potentials for the presentation of the zeugma archaeological site.

In addition to this, the shortness of the precipitation season and the cold period should be considered as one of the geographic potentials of the Zeugma archaeological settlement. Because, on a yearly basis, the length of time, available for both the field studies and visits, is quite long.

Just like the climatic features, pistachio trees that make up the dominant vegetation in the area and can grow in a very limited area in the world are among the geographic potentials of the settlement.

4.3.4. Tourism Potentials

The Zeugma archaeological site has gained worldwide fame with its being an important settlement and the social consciousness it created during the inundation. This situation has created an attraction to the ancient city of Zeugma already. Moreover, Zeugma archaeological site has a new synthesis that combines both east and west cultures and lifestyles. This synthesis was left under the ground, maintaining its original state due to a sudden abandonment of the settlement, consequently, it is an area that carries a lot of information about that period and all of these made Zeugma archaeological site interesting and evocatory.

Besides the aforementioned historical and archaeological importance, the ancient city of Zeugma is an attractive area with the Euphrates (Fırat) River and other geographical values. When this area is evaluated with all its geographic values, it is like a photo frame with sepia filter, where the water element, the soil yellow, the dramatic topography and the history stand together.

Besides neighboring archaeological sites that are it's contemporary, it also has a contextual relationship with many other historical sites. These areas, which are both physically and historically connected, multiply their existing attractiveness by their coexistence.

All of the above-mentioned factors indicate that the settlement has a high potential for tourism. In other words, Zeugma as a settlement that can draw the interest of people from different social strata of all ages with different interests has a very high potential in terms of tourism.

4.3.5. Presentational Potentials

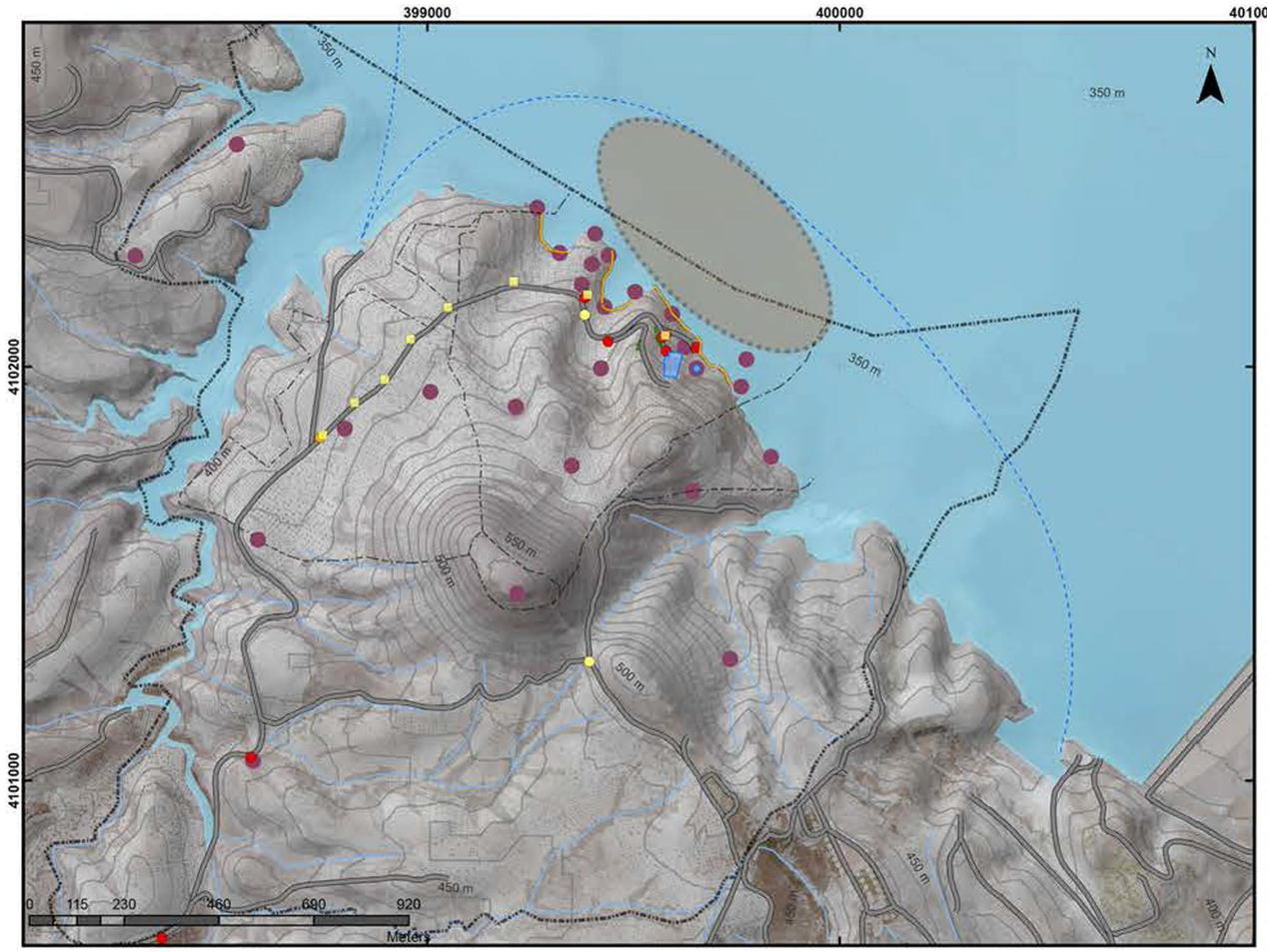
As mentioned several times, Zeugma and its twin city Apamea are both concealed due to the fact that they remain under the dam water and the material they are built on is mostly unstable. These ruins, which are left to be concealed by earth or water, have been unable to provide visual data to explain themselves. However, this

situation is seen as a problem, but it creates an important potential at the point reached today. In addition to the various virtual presentation techniques we have encountered in a few examples, it is open to all kinds of experimental presentation techniques that do not harm the remains and can be recycled. At this point, while, even the site could not provide sufficient visual data, by the help of contemporary and diversified presentation techniques, the site can be interpreted with other senses. With the developing technology, new presentation methods will be developed and current presentation techniques, which are quite costly, will become more reasonable. The Zeugma archaeological site is an experimentally significant area that does not restrict the visitor or the designer working on the presentation of this area. The evaluation of this potential will positively support other potentials and values by highlighting the meaning of the settlement and will turn its being concealed into an advantage from a disadvantage for settlement.

In addition to all of the abovementioned, this virgin area, which has not been studied sufficiently but preserves its originality, provides a potential for education in areas such as archeology, history, and archaeometry.

The potentials of the settlement and their geographical locations were shown by Figure 4. 17.

The evaluation of Zeugma archaeological site in terms of values, problems and potentials as a site to be presented according to previously identified inputs was given in this chapter. The evaluations made in this section made to constitute the basis for the general arrangement to be established on the presentation of the site.



PRESENTATION OF A CONCEALED ARCHAEOLOGICAL SITE: THE CASE OF ZEUGMA

PROBLEMS

Archeological Problems

Archeological Remains

- A part of the city Zeugma and fulles extend of the city Apamea were inundated.
- There has been illegal excavations before rescue excavations.
- Existing remains and traces were unrelated from each other due to the excavation policies.
- The borders and the extentions of the city could not be percieved.
- The most of the remains are indurable against weathering cycles and outdoor conditions
- Some of the remains are under protection shelter because of their fragile structure and this situation causes isolation from context and setting.

Presentational Problems

Land Access - Roads

River Access

- Access by the land roads is quite difficult, guidance sign-boards are insufficient, visitors have difficulty in finding the area for individual trips.
- Access via the river is unknown to visitors.
- The entry to the site and the boundaries of the settlement are not defined.
- No car parking space.
- No pedestrian paths and pedestriar guidance sign-boards.
- There is no defined tour route or path in relation with the ruins.
- There are no disabled friendly solutions in the area.

The area is famous, this situation increases the expectation, the presentational inadequacy of the field leads to dissatisfaction in the visitors.

Protection Shelter

The structural features of the archaeological remains necessitate the exhibition under the protective shelter, which in turn detaches the remains from the whole of the city and the site becomes difficult to perceive.

Flooded Area of the City

-Inundation of some section of the site makes site partially hidden and complicates the presentation of the site.

Warning Signboard

Direction Signboard

Information Signboard

-There are not enough grapic panels, sign-boards or guides to describe the Zeugma.
- There is no tour route designed for holistic understanding of the area.
- The Zeugma museum is located in the city center of Gaziantep, 50km away from the site.
- The viewing platform is detached from the settlement in terms of both transportation and visual connection.

Infrastructure & Facility Problems

- There is no facilities serving to need of food&beverage and resting.

Utility Pole

Container (WC, Storage, Watchman, etc)

- Container toilets and other container structures are located in the middle of the ruins and visually damage the site.
- There are no elements such as trash bins, moving or stationary seats in the site.
- There are not enough number of guiding and warning signs. Some of the signs found in the site are uncomfortable and lacking in fineness.

First degree archeological site borders

Estimated Roman & Hellenistic City Borders

Figure 4. 16 Problems (Gündüz Çetinkaya, 2015)

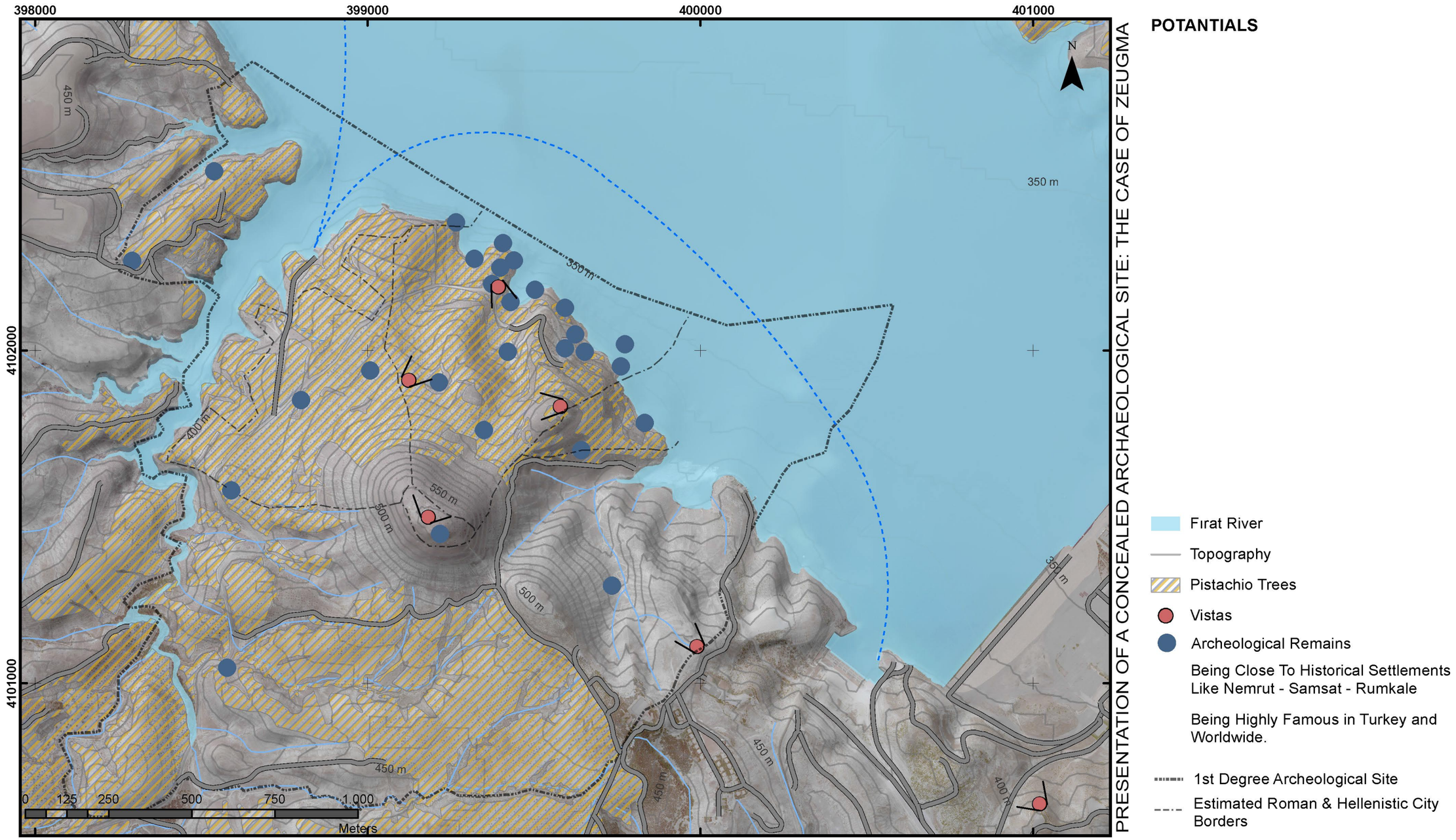


Figure 4. 17 Potentials (Gündüz Çetinkaya, 2015)

CHAPTER 5

THE PRESENTATION PROJECT

In this study, which focuses on the presentation of concealed archaeological sites, it is aimed that all researches and investigations carried out until this section will serve to the decisions to be made in this chapter.

The aim of the initial chapter was to determine the principles and objectives by investigation of the presentation and interpretation concepts and evaluate the present presentation techniques to constitute help, determine how the case has chosen will be handled and the decisions to be made in this chapter. Later on, the information obtained from the literature research and the observations made in the site survey about the archaeological site of Zeugma was compiled and the site was tried to be understood so that evaluations can be made. All assessments of the values, problems, and potentials of the site will serve this stage of the study.

5.1. Outline of the Presentation Project

After the literature and site surveys related to the site to be presented, the values, problems, and potentials of the site are determined. It is necessary to determine the outline of the presentation project by combining all the data obtained at the stage following this process (Figure 5. 1). In this respect, first of all, presentation principles, presentation tools, and methods that are needed and appropriate for the case should be determined. At the same time, it is necessary to create tour scenarios for the visitors to understand the meaning of the site and to make an efficient tour. Determining the needs of the archaeological site prepared for the presentation and the visitors who will visit the area, should be determined in order to state the architectural program and the opportunities to be offered in the site. All the processes mentioned above will provide the data that will constitute the outline of the presentation project and provide the result that can be transferred to the plan with the help of this data. After the site plan

is prepared according to the above limiters, the architectural project and production details will be prepared, and the project will be finalized.

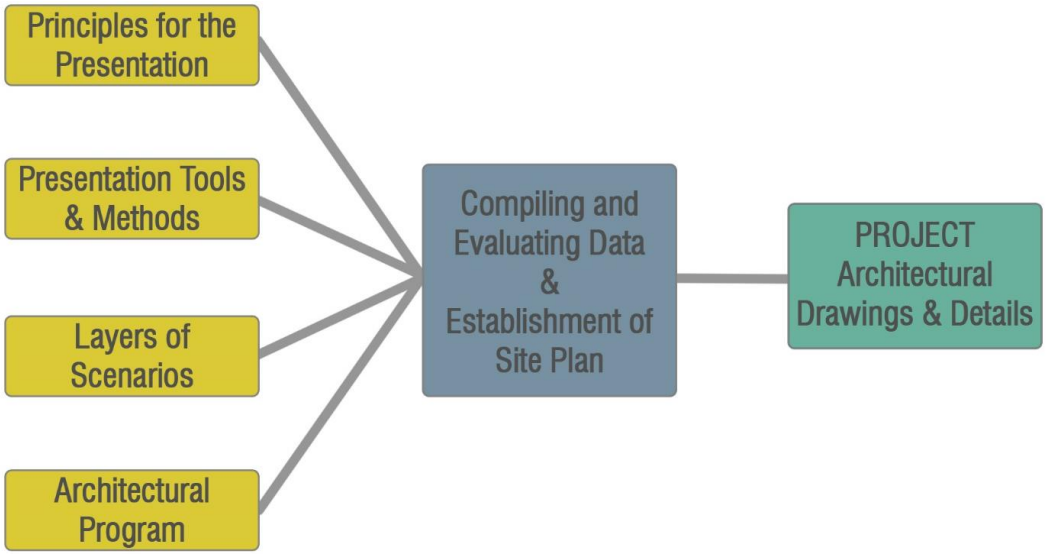


Figure 5. 1 Outline Scheme of the Presentation Project (Gündüz Çetinkaya, 2018)

5.2. Principles for the Presentation

The presentation and the actions to be taken in order to enable visitors to understand and interpret the concealed archaeological site Zeugma should be shaped within the framework of certain principles. In accordance with this requirement and as a result of the researches and observations made in the literature and in the field itself, the principles to be prepared for Zeugma are as follows:

> **Holistic approach;** In the process of presenting any area, structure or object, the item to be presented should be evaluated with all its components, all tools and process should be planned accordingly. Any part of the whole, what the visitor addresses in the world of his/her imagination, and what it will serve in the process of understanding the site, is not a subject to be determined by an expert opinion. By these words, "Presentation should aim to present a whole, rather than a part." Tilden pointing out this precisely (Tilden, 2007, p. 33).

Inclusiveness - to be intelligible to everyone; the presentation tools, the narrative style and the content of the narration should be able to appeal to people of all types and ages. In other words, both a child and an adult should be able to find points of interest in the narrative, and this should be understood by everyone. It should not be forgotten when designing the presentation of a site; no matter how valuable the content is, there will not be any interpretation as long as it is not understandable.

Addressing multiple senses; Presentation tools and methods should not focus on a single sensus. People's perceptions have different powers in different senses. Therefore, presentation tools and methods should give references to each of the senses of seeing, hearing and touch, and sensory diversity should be ensured. Thus, both the presentation will be enriched, the intelligibility of the meaning of the place to the visitors will be increased, and people with various disabilities will have access to understanding the area.

Coalesce with context and setting; as stated in Ename Charter (ICOMOS, 2008) clearly "The interpretation and presentation of cultural heritage sites should relate to their wider social, cultural, historical and natural contexts and settings." When determining the tools, methods, and content to be chosen for the presentation, it is very important to spend the maximum effort to evaluate and understand the environment and context. This effort should be combined with the current techniques to be transferred to the visitors, and it should be ensured that all the components of the area can be understood to allow visitors access to adequate interpretation.

Maintaining the authenticity; Starting from Venice Charter (1964), many international documents pointed to the importance and value of authenticity. In this respect, it can be concluded that this value bearing the traces of the significance of the place must be preserved. Conservation or presentation of ancient historical sites could be intermingled with restoration; fully restoring

can enhance the exterior appearance and stability but is costly and arguably diminishes the authenticity. Therefore, every step in the process of presenting a cultural area should be shaped in a way that respects the authenticity of the site.

Reliable and up-to-date information sources[25]**;** Ename Charter underlines carefully by telling that "Interpretation and presentation should be based on evidence gathered through accepted scientific and scholarly methods as well as living cultural traditions." In addition, considering the ongoing research on the area to be presented, new information may be created which is added to the previous one or destroyed the previous one and forming a new reality. For this reason, it is necessary to keep the information and documents up-to-date chosen for the presentation of the cultural heritage site.

Easily changeable and updateable tools and methods; as stated in the previous policy, there is the possibility that more accurate and up to date information will appear. In addition to this, healthier and more useful methods for cultural heritage site presentation practices can be introduced with changing and developing technology. It is therefore essential that the instruments and methods chosen for the presentation are easily replaceable and updateable.

Diversification of presentation layers; the interest of the visitor who wants to visit a cultural heritage and the time he devotes to visit are verifies. For visitors who want to get general information about the area or who want to understand the area deeply, different paths should be designed. Furthermore, each path must start and end in itself and provide the necessary information for the presentation of the site.

[25] Information resources is defined as "all material, written, oral and figurative sources which make it possible to know the nature, specifications, meaning and history of the cultural heritage." at the Nara Document on Authenticity (1994).

In addition to the principles listed above, any intervention to any cultural heritage site should be sustainable, easily manageable, legal, economic and, most importantly, reversible.

Accordingly, the projection of the future project, namely its vision, is to ensure the perceptibility of an archaeological city, which is primarily concealed, by different senses. In line with the principles explained above in terms of rough, choosing the most appropriate presentation methods and presentation tools in order to enable the visitors from all ages and any social group of visitors to understand the significance of the site are the main objectives. In line with the aforementioned vision, in the present state of immaturity of in situ presentation, to give the value it deserves, and most importantly, to convey the importance of this settlement in history and archaeology, both conventional and virtual presentation techniques have to be used.

5.3. Proposed Presentation Techniques and Tools for the Concealed City – Zeugma

This concealed site, Zeugma, the glorious city of ancient times is covered up by soil and water for now furthermore it is unknown that when the environmental and technological conditions will allow the remains to be resurfaced. In other words, this site is not able to express itself with its concealed character and this situation makes the site hard to present or understand with its all components. Yet, with a solution-oriented approach, some presentational elements and tools provided by today's technology and facilities could overcome the problem and enable the presentation and understanding of the site. From this perspective, presentational elements and tools, which are listed and described below, have been found eligible for a presentation of the settlement remain concealed.

5.3.1. Conventional Techniques, Elements and Tools

Sign boards

Within the scope of the project, sign – boards (panels) with different contents are designed.

First one of these aims to show the archaeological remain or exhibition area reached. This signboard designed to be made of black cor – ten steel material and will be fixed with earth screw anchor to the ground in order not to damage any remain and to be reversible or easily changeable (Figure 5. 2).

Another kind of sign boards can be named as rope trace defining sign boards. Some of the remains will be visualized by the use of ropes, contouring the bounds and main lines of remain (Figure 5. 3). In order to define and hold the rope, these “rope trace defining sign boards” were designed. This signboard designed to be made of black cor – ten steel material and will be fixed with earth screw anchor to the ground in order not to damage any remain and to be reversible or easily changeable.

The third type of sign boards are defining the directions of pre-prepared tour routes by colored acrylic sheet arrows (Figure 5. 4). This signboard designed to be made of black cor – ten steel and colored acrylic sheet material and will be fixed with earth screw anchor to the ground in order not to damage any remain and to be reversible or easily changeable.

Information sign boards are the final type of sign boards which aims to inform visitors by the help of UV printed visuals and texts on a transparent acrylic sheet (Figure 5. 5). Sign boards are designed to be made of black cor – ten steel and acrylic sheet material and will be fixed with earth screw anchor to the ground in order not to damage any remain and to be reversible.

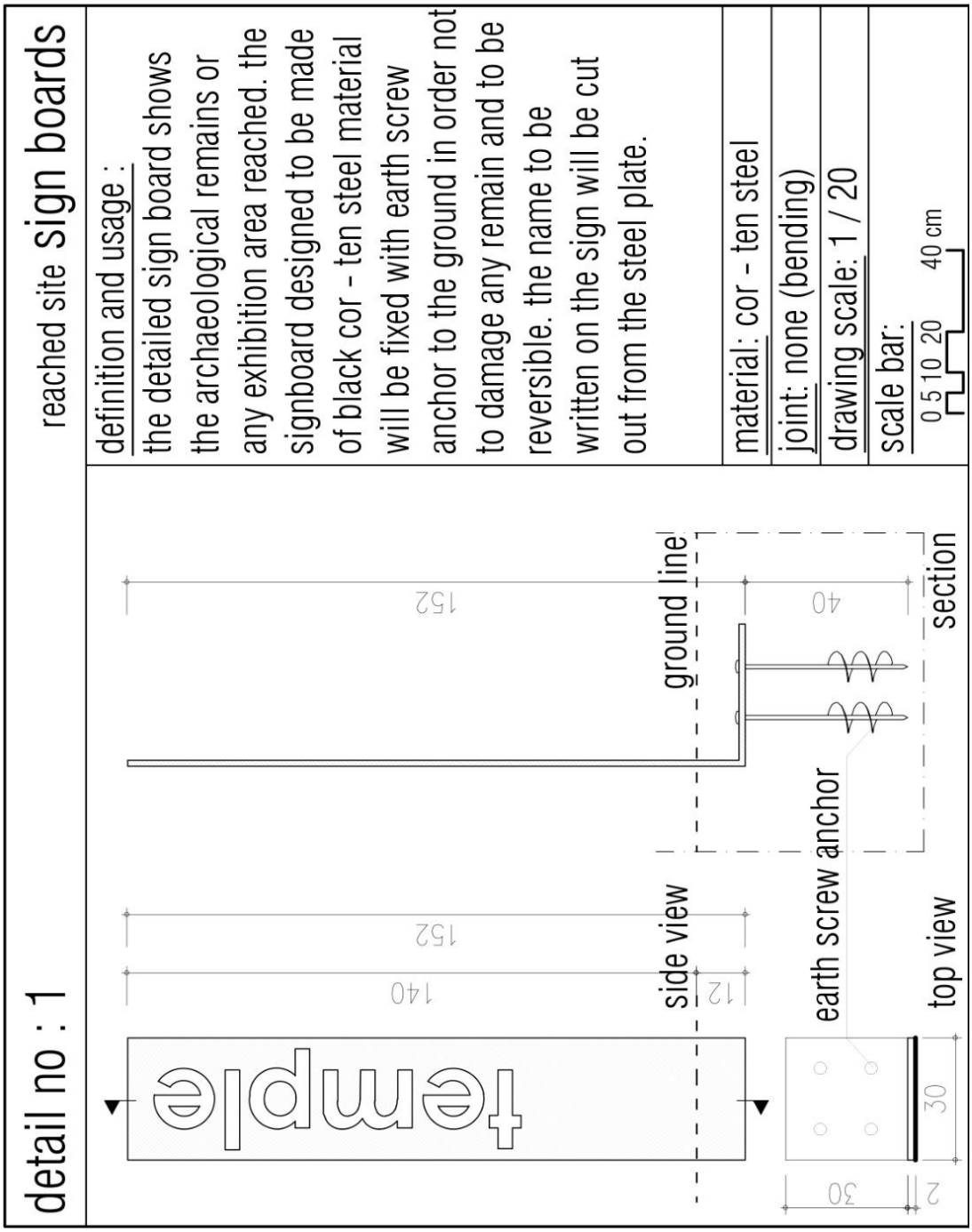


Figure 5. 2 Detail Drawing of Reached Site Sign-boards (Gündüz Çetinkaya, 2018)

Figure 5. 3 Detail Drawing of Rope Trace Defining Sign-boards (Gündüz Çetinkaya, 2018)

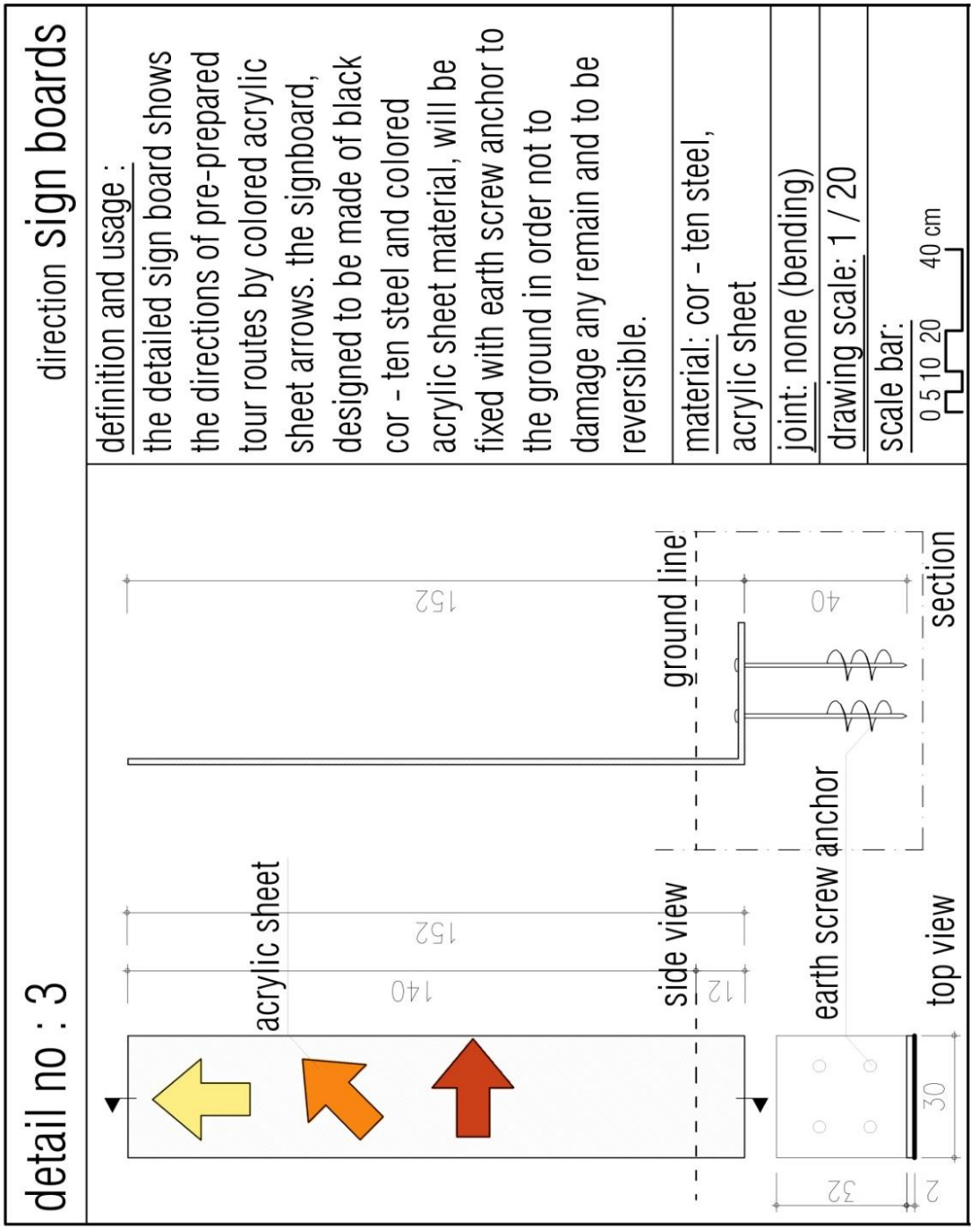


Figure 5. 4 Detail Drawing of Direction Sign-boards (Gündüz Çetinkaya, 2018)

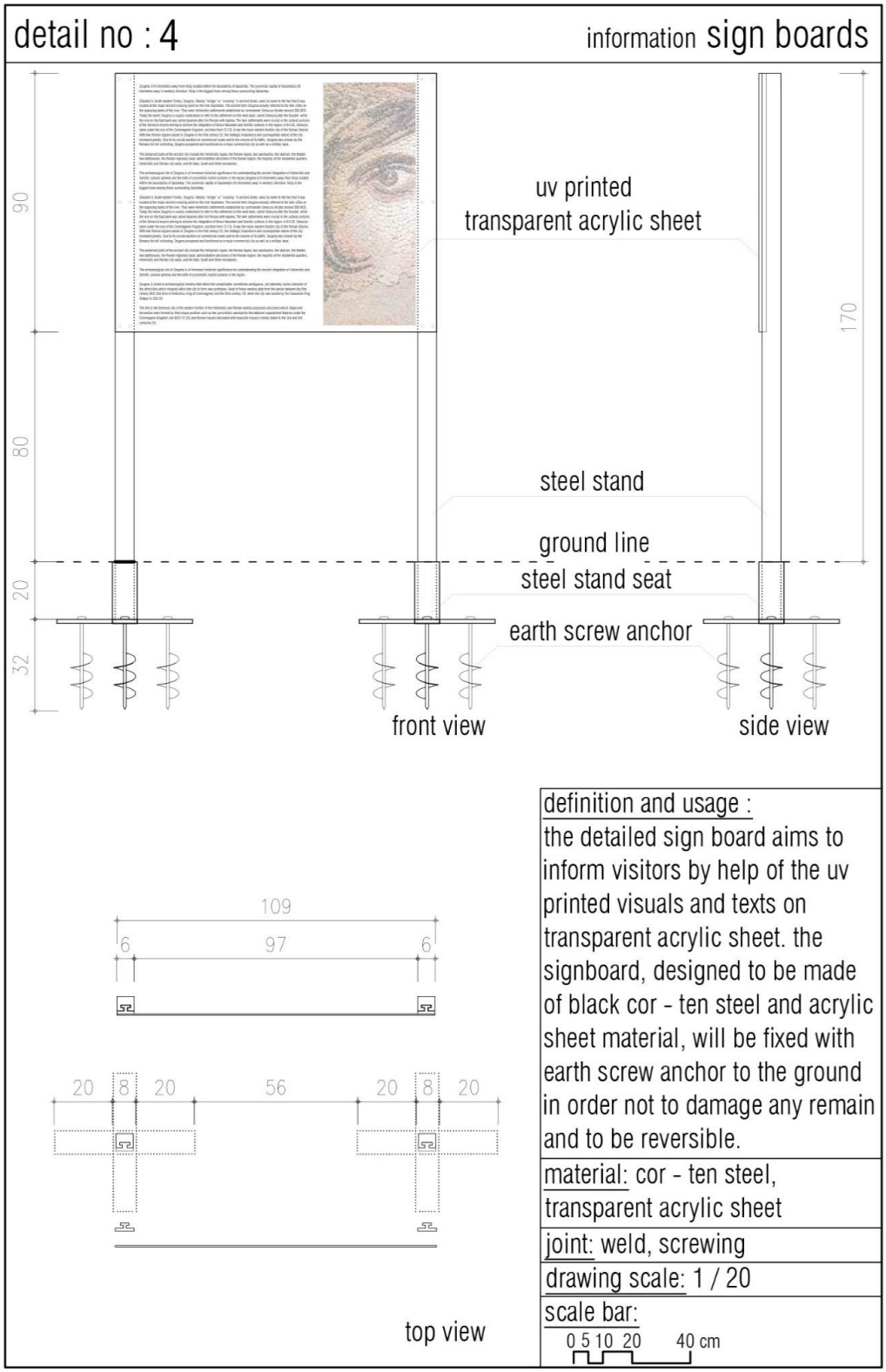


Figure 5. 5 Detail Drawing of Information Sign-boards (Gündüz Çetinkaya, 2018)

Audio Devices

In sites such as Zeugma, which are mostly under soil or water, presentation tools are of great importance. Accordingly, audio devices are critical tools especially for visually impaired or illiterate people (children) and visitors who cannot understand Turkish or English texts on information boards. By use of audio devices, it is aimed that the visitors will understand the area by verbal expression in all necessary languages.

5.3.2. Augmented and Virtual Reality Tools

The presentation tool which is a combination of a conventional method, boards, and augmented reality technology is named as augmented reality sign boards. These boards will be located on pre-defined vista points and these vista points are locations where you can see whole settlement, certain sections or important axes of them. Sign boards aim to help visitors to visualize concealed artifact or restitution of the related section of the settlement on its own context by the help of perspective drawing on a transparent acrylic sheet (Figure 5. 6). In order to observe the augmented reality concept with this sign board, visitors are meant to stand at a certain point and look at the transparent board from a certain height. Augmented reality sign boards are designed to be made of black cor – ten steel and acrylic sheet material and will be fixed with earth screw anchor to the ground in order not to damage any remain and to be reversible.

Moreover, within the scope of the project of presentation of the ancient city of Zeugma, augmented reality techniques considered to be used through the applications that visitors can download to their own mobile devices. Owing to this application, the visitor is expected to be able to monitor the boundaries and restitution of the remains that have been left under the water or the soil, as well as to reach written and auditory information about the area they have observed by clicking on the related zone of the display.

In addition to the methods described above, the virtual reality technology is one of the recommended methods for the presentation project. As mentioned before, virtual reality basically means “near reality” referring to a specific type of reality emulation. In other words, virtual reality presents a computer-generated virtual environment that visitors can explore around by the help of human senses. For this particular project, the fictional design of this technique is designed to allow visitors to watch pre-made animations for high recognition areas by their VR glasses. This computer-based virtual medium has the opportunity to present the original form of the visited archaeological site, or to present the animated human behavior or lifestyle in the period in which the settlement in its own time. However, this method, which has a number of advantages to those listed above, is quite expensive and its difficulty with its establishment, sustainability and safety is the disadvantage. Accordingly, it has been prescribed that only really interested visitors would experience the environment by virtual reality. For this reason, the organization of other presentation techniques and tools, constituted as they can work alone.

5.3.3. Rope – use Tracing of Concealed Remains

Remains at Zeugma has a very problematic structure that cannot stand weathering conditions and cannot be displayed without a shelter. In addition to that, sheltering remains, to leave aboveground, is interrupting the connection between remains and their context. This situation, which is described in detail in the previous chapters, leads the search of techniques allowing to present the remains by leaving them concealed. Accordingly, “rope–use tracing of remains” method is one of the conclusions of the search in question, such as virtual and augmented reality techniques. In addition to all these, this method’s being easily changeable and removable is allowing to present the areas, whose presence, form or location are questionable, according to the available information. Ropes can easily layout to the ground by chasing the traces of the remains or restitution scheme. Additionally, fixing ropes to the ground is quite easy, harmless to the artifacts, reversible and changeable (Figure 5. 7).

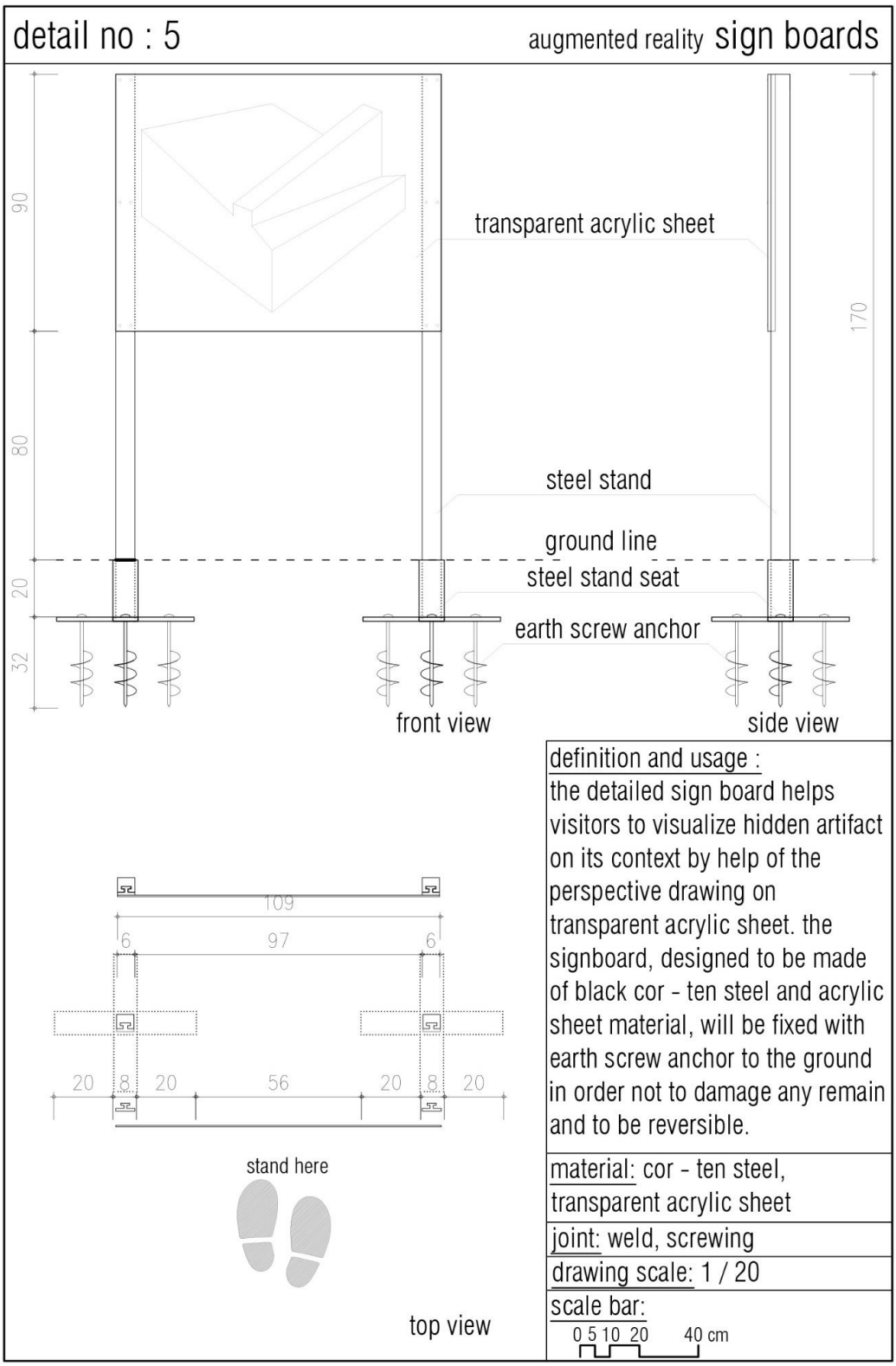


Figure 5. 6 Detail Drawing of Augmented Reality Sign-boards (Gündüz Çetinkaya, 2018)

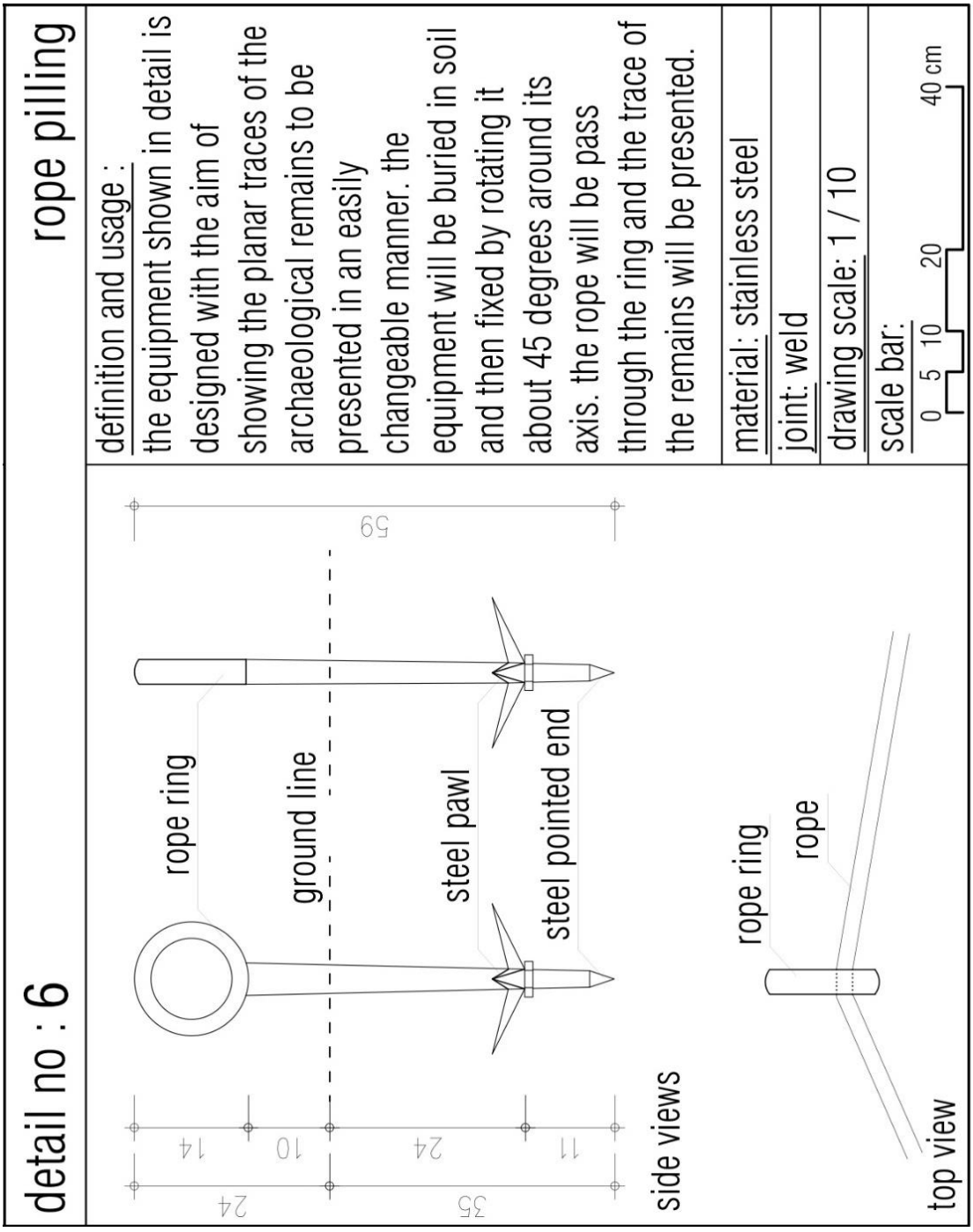


Figure 5. 7 Detail Drawing of Rope Pilling Equipment (Gündüz Çetinkaya, 2018)

5.4. Layers of Scenarios and Proposed Architectural Program

5.4.1. Layers of Scenarios

As stated in the principles that constitute the basis of the presentation project, three travel scenarios were determined considering the level of interest of the visitors and the time they can allocate. In the 1st level scenario, it is aimed to spend 60-80 minutes from the moment the visitor reaches the area, 120-150 minutes in the second level scenario and 180 minutes or more at the 3rd level scenario.

The points to be visited by the visitors during the process of determining the scenarios were evaluated based on certain criteria and thus it was determined which stops were found in each scenario. Each criterion has been scored from the most positive to the most negative, so the resulting scores have been enabled the visitor to distinguish between the area that the visitor would have to see and what the curious visitor would want to see.

First one of the criteria affecting the scenario is the accessibility status. This criterion is evaluated by considering the distances of navigable areas to the center where the scenarios will start and the conditions affecting the difficulty of access such as inclination. In this direction, the difficulty of access to the center where the scenario begins scored as from 5 for easiest to 1 for most difficult.

Another criterion is the value of the evaluated point, namely, its importance in the whole. This criterion has been scored from 1 to 10 points from the least important to the most important one.

The significance of the area is also one of the evaluation criteria and is rated between 1 and 10 as the value of the point.

Another criterion is the level of recognition. This criterion has been established by assessing the level of research about the point and how well the characteristics of this point are known. This criterion was scored between 1 and 5. While the highest

score goes to excavated, documented and studied points, the lowest score included only the remains or areas whose existence was known or predicted.

The condition of the artifacts in the area is another important criterion. This criterion also determines whether the artifacts can be presented on the surface. The areas with the good condition take 3 points while the artifacts with the very bad structural condition get 0 points.

The security and maintenance needs of the points that will be subject to the scenario are other important criteria. Since these criteria were related to each other, they were evaluated in one item and scored as 0 points to problematic sites and 3 points to problem-free sites.

The relationship with the vista points, which enables the perception of the whole city, is also included in the criteria. While the fields located directly at the vista point were received 3 points, the areas with no relation to vista points have been evaluated with 0 points. In addition, areas close to vista points have been evaluated with 2 points in order not to ignore their potentials.

Visibility is considered as one of the most important criteria for this concealed settlement. As the areas under the soil or Birecik dam reservoir were invisible, they were evaluated with 0 points and the visible areas were evaluated with 3 points.

When all these coefficients are applied to the archaeological remains in the area with an expert eye, the result in the following table has emerged. (Figure 5. 8) The evaluation of the criteria in this table was made according to the literature research, site surveys and thematic maps describing the current situation.

The coefficients of the totals have been examined and the breakpoints of the totals formed the boundary line between the three different scenarios. In this respect, the residues with a total of 30 and over 30 are included in the first, second and third scenarios, the coefficients being between 21 and 30 are included in the second and third scenarios, and those with the coefficient total 21 and under 21 are only included

REMAINS																										
	Excavated, Intervened, Visible Remains							Excavated, Intervened, Visible, Sheltered Remains		Excavated, Documented, Hidden (under soil) Remains		Excavated, Documented, Hidden (under water) Remains		The Remains Identified According to Researches												
	TEMPLE & VISTA I	MARKET BUILDING	SOUTH NECROPOLIS	POSEIDON MOSAIC	ROMAN CITY WALLS	TRENCHES (17, 18)	TUMULUS	HOUSES OF DANAE & DIONYSOS	HOUSE OF THE MOSES	THEATRE	CIRCULAR BUILDING	HOUSES OF POSEIDON & EUPHRATES HOUSE OF SYNARISTOSAI (Visible from Vista II)	TRENCHES (19, 20, 21, 23) (Visible from Vista VI)	AGORA	STADIUM	PUBLIC BATH	HELENISTIC AGORA	ROMAN CITY GATE	BATH HOUSE	WEST NECROPOIS	EAST NECROPOLIS
CRITERION 1 **Accessibility Status** (1 to 5)	2	4	1	4	2	3	0	5	5	3	4	3	3	3	2	2	4	1	4	0	1
CRITERION 2 **Value** (1 to 10)	10	7	5	4	6	1	4	6	6	8	3	5	1	7	7	6	6	7	6	5	5
CRITERION 3 **Significance** (1 to 10)	10	7	4	6	4	1	4	6	6	7	3	6	1	7	7	6	7	5	6	4	4
CRITERION 4 **Level of Recognition** (1 to 5)	4	4	4	3	3	3	3	5	4	3	2	3	3	1	1	1	1	1	1	1	1
CRITERION 5 **Structural Condition** (0 or 3)	0	3	3	3	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
CRITERION 6 **Security and Maintenace** (0 or 3)	3	3	0	3	3	3	0	3	3	3	3	3	3	3	3	3	3	0	3	0	0
CRITERION 7 **Relation with Vistas** (0, 2 or 3)	3	2	0	2	1	0	0	0	0	2	2	0	0	1	0	2	2	0	1	0	0
CRITERION 8 **Visibility** (0 or 3)	3	3	3	3	3	3	3	3	3	2	2	2	2	0	0	0	0	0	0	0	0
	35	33	20	28	22	14	17	31	30	28	19	20	13	22	20	20	23	14	21	10	11

Figure 5. 8 Table of Scenario Criteria Applied to Archaeological Remains (Gündüz Çetinkaya, 2018)

in the third scenario. After determining the scope of the scenarios, the routes of all scenarios were formed by taking into account the walkways, presentation tools, and methods.

5.4.2. Architectural Program – Facilities in Permanent Building

The process of determining the facilities in permanent structures or the architectural program, the facilities offered in similar areas were examined and visitor surveys conducted during the field study were evaluated. In the light of all this information architectural program specified and grouped in two separate sections. The first of these sections consists of presentation, field control, and visitor informational facilities, while the second includes social facilities. The functions grouped as above are solved in two different buildings due to their different qualities such as usage times and maintenance.

In Building 1 are the functions of the foyer, ticket office, office, info desk, exhibition area, video room, and passageway to tour route. In Building II, respectively, there are entrance hall, lobby, souvenir shop, cafe, kitchenette, and service volumes. In addition to permanent structures, parking spaces and shuttle stops were also covered. In the process of determining tour scenarios and architectural programs, the circulation schemes of the visitors were determined (Figure 5. 9).

5.5. Decisions: The Presentation Project of Zeugma

Within the scope of the project of the presentation of Zeugma, which is an archaeological site which has remained concealed and has problems within itself, after determining the principles, presentation elements and methods that are thought to be suitable for the site, general setup, namely, the scenarios and the architectural program, all other decisions were made in order to complete the project.

In the project prepared within the scope of the study, the approach to the field was defined using two different methods. The first of these methods is transportation

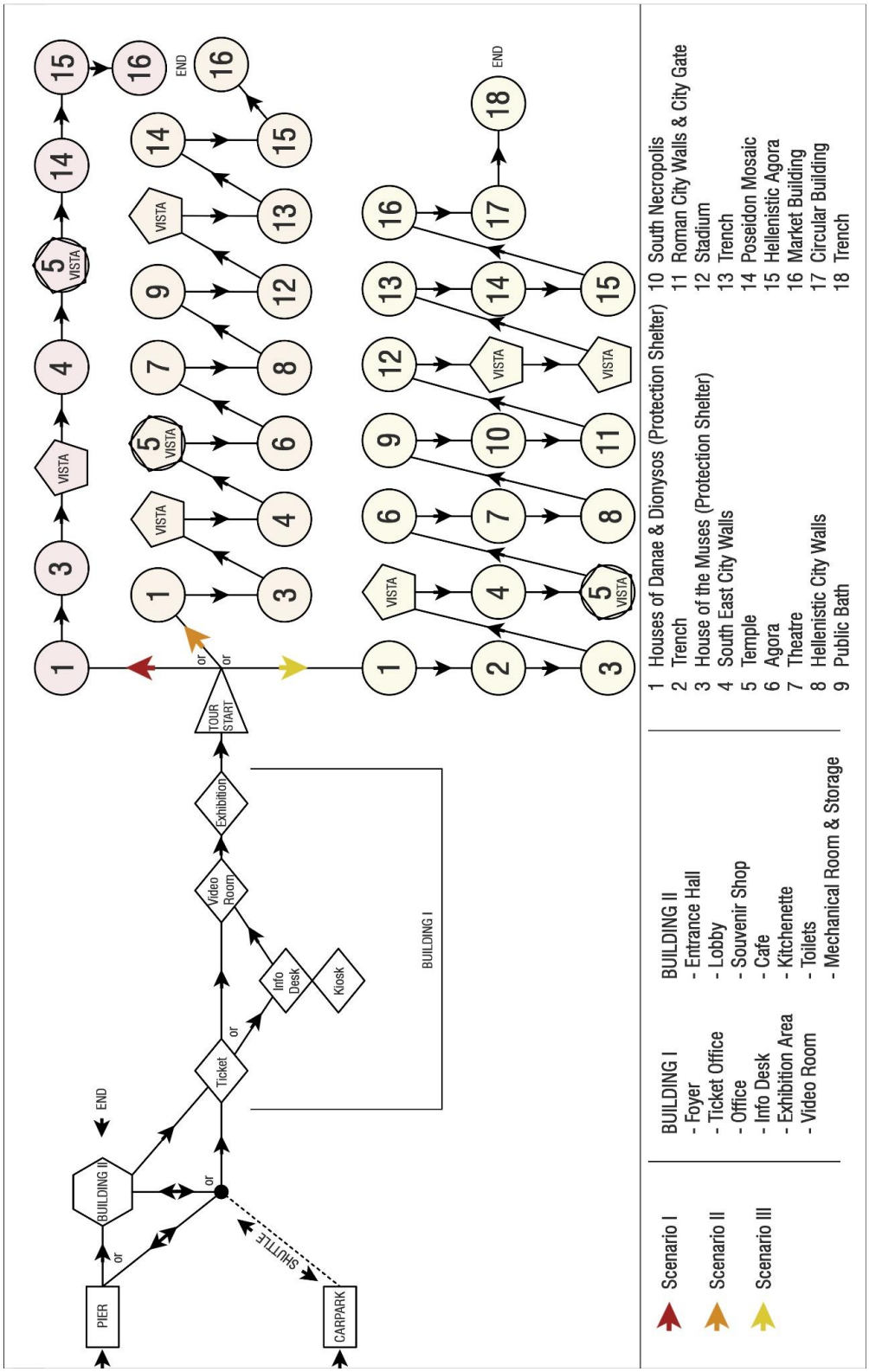


Figure 5. 9 Visitors' Circulation Scheme (Gündüz Çetinkaya, 2018)

by road. In this method, visitors get to the car park, which is positioned in an area outside the Zeugma city walls, with their own cars or tour buses, afterward they can reach the point where the tour starts by using the shuttle. Another method proposed for access to the area is to be reached by the river via the tour boats traveling on the Euphrates (Fırat) River.

It has been studied on the integration of the principles of presentation, approach to the field, travel routes, scenarios, methods of presentation and tools, and the necessary data obtained after the identification of the architectural program with the Zeugma archaeological site. As a result of this study, the general structure of the project in the super scale is determined for each scenario separately. During the process of putting down the general fiction of the project on the site plan, visitors' paths were designed taking into consideration the slopes and distances and the resting points that would be needed during the tour process were determined (Figure 5. 10, Figure 5. 11, Figure 5. 12).

It has also been studied on determining the position of the permanent structures proposed within the scope of the project. As a result of this study, it was decided by considering that the locations seen in the following visuals were in compliance with the starting point of the trip scenarios and general approach to the area, and the fact that there was no crucial data about the significance of the city in the chosen area according to researches up to now.

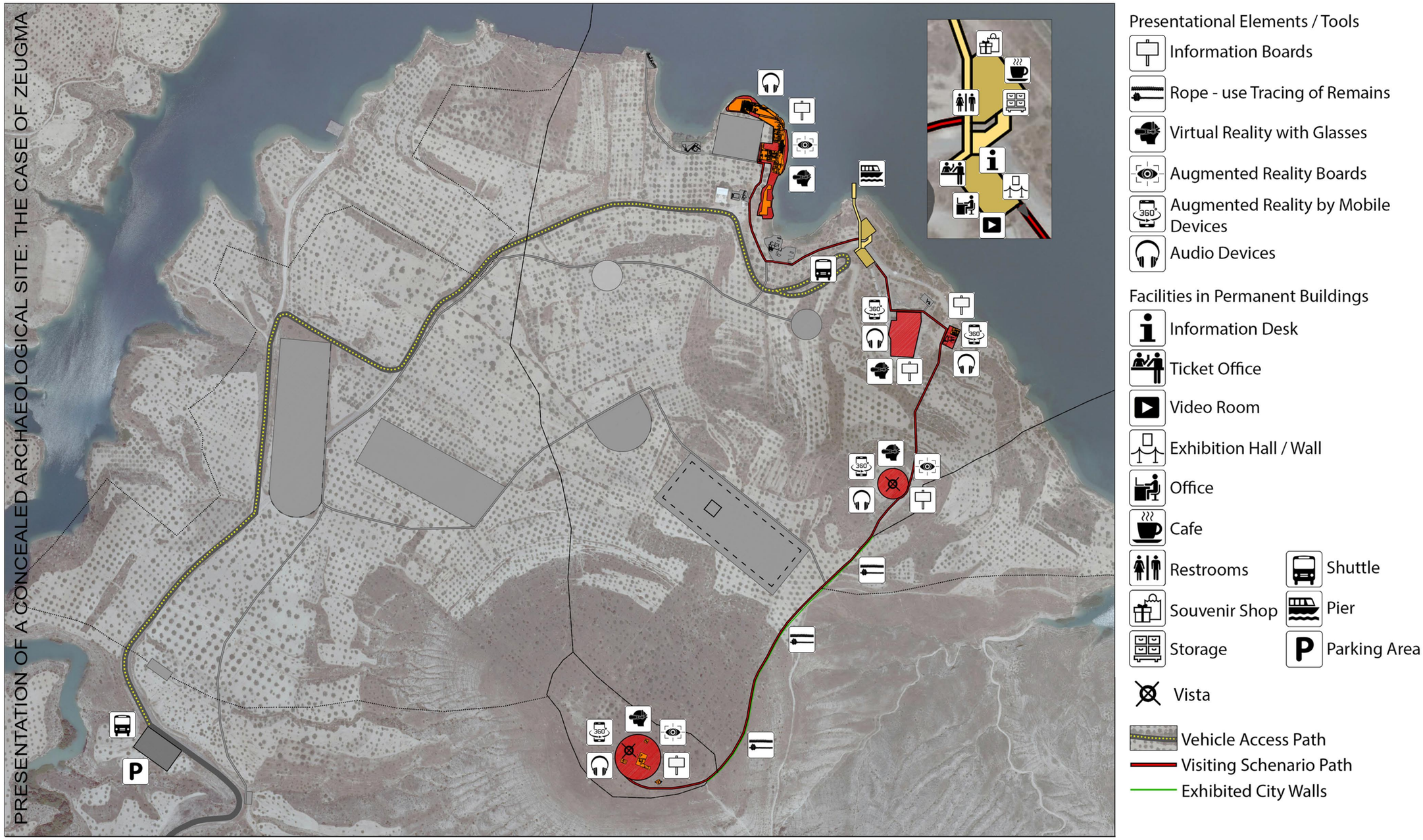


Figure 5. 10 Scenario I - Site Plan (Gündüz Çetinkaya, 2018)

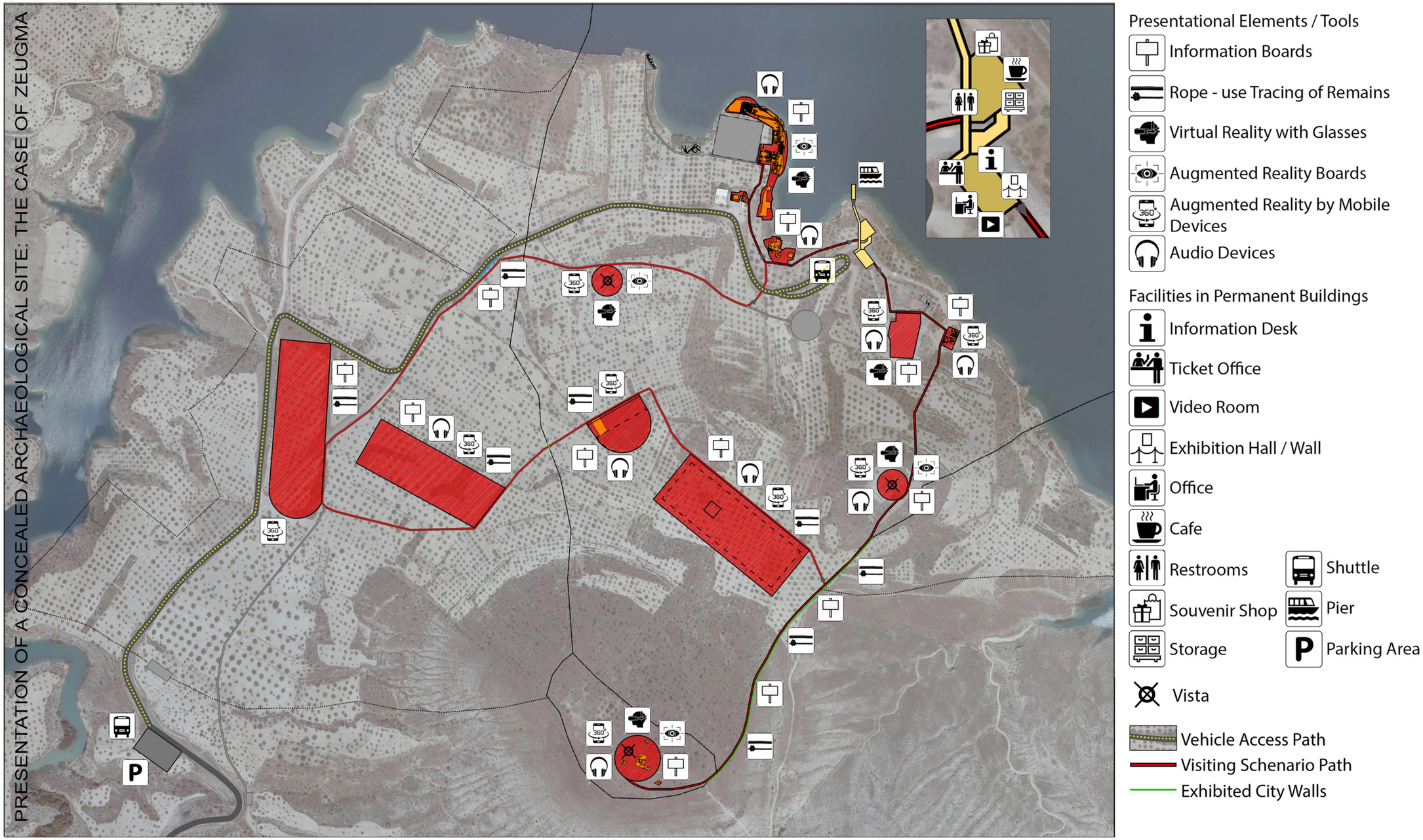


Figure 5. 11 Scenario II - Site Plan (Gündüz Çetinkaya, 2018)

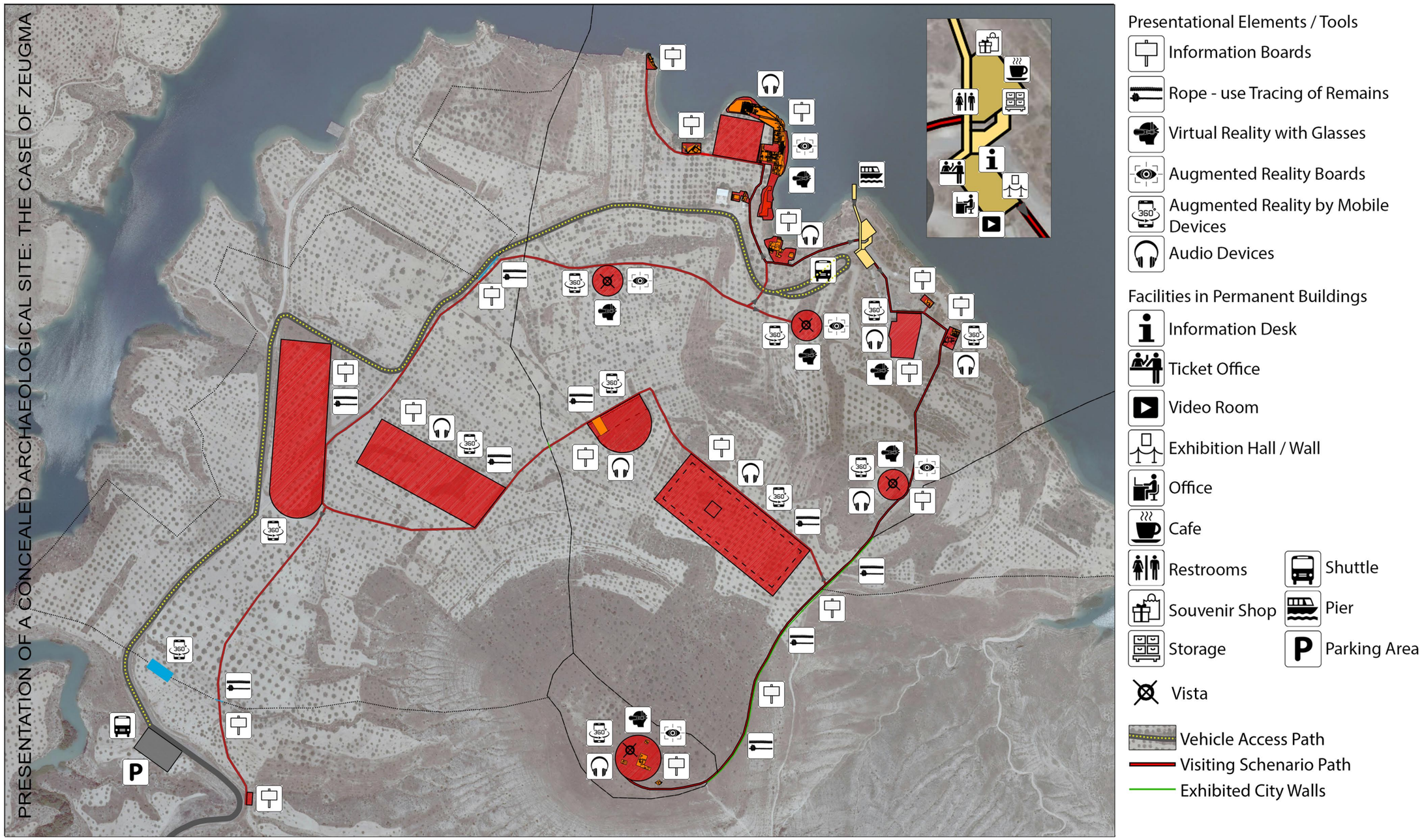


Figure 5. 12 Scenario III - Site Plan (Gündüz Çetinkaya, 2018)

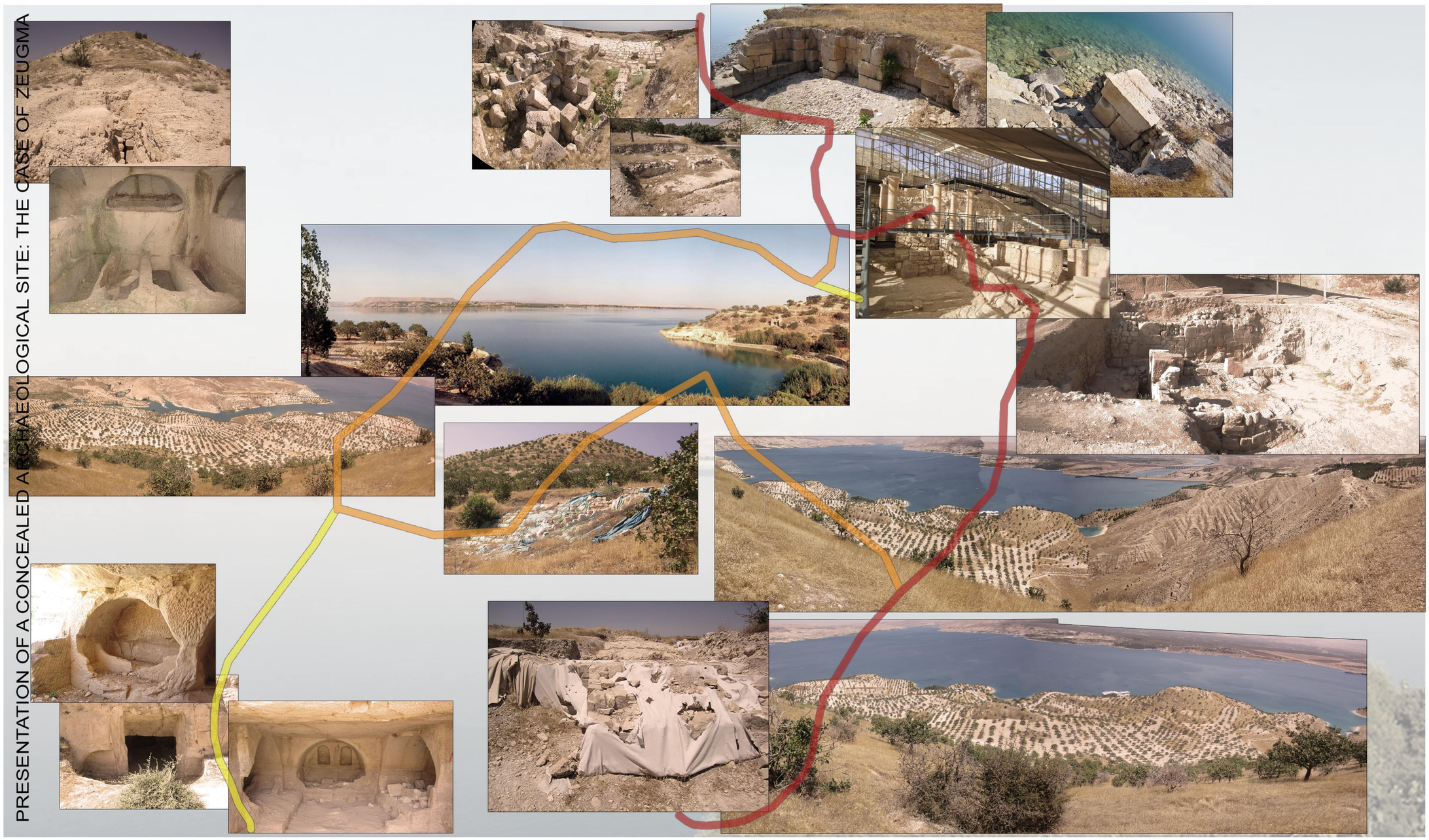


Figure 5. 13 Visual Reflections of Tour Routes (Gündüz Çetinkaya, 2018)

Newly proposed structures with predetermined locations are both single-story and placed in harmony with the topography so that they do **not adversely affect the existing silhouette**. Thus, the buildings have facades at bottom elevation by facing the landscape. In addition, since the buildings were intended to be **lost in the context**, the light grey mirrors with 80 percent reflectance were used as the main facade material. In addition, with the same purpose, the thin-sectioned dark gray (anthracite) cor-ten steel sun shades used in the facades horizontally, in order not to not cut the landscape, and most importantly in order to support the **horizontality** or **disappearance of the buildings**.

As a result, in order to avoid the structure from overbearing the context in which it is located, the building has been designed with the intention of ensuring that the mass and external perception of the structure are **unpretentious**.

In addition, since the characteristics of the area in which the structures are to be located is not fully known, it is recommended that the structure should be constructed on independent, spread foundations with steel soil anchorage on filling. Thus, it would be easy to remove the structure without damaging the soil strata (**easily reversible)**, if required.

In the process of preparation of the plan organizations of the buildings, first of all, function flow charts were prepared according to the anticipated circulation of the users (Figure 5. 14). With this method, it was aimed to reach a plan that both works smoothly and directs the user. Another point that is taken into consideration during the creation of the plan organization is to keep the building area to a minimum by minimizing the loss of area.

Ultimately, the designs of the buildings have been completed by taking into consideration the issues mentioned above about the mass of the building, the facade layout and plan organization (Figure 5. 17, Figure 5. 18). In addition to the design of permanent structures, the design of the walking paths and benches on the sightseeing routes were determined in addition to their location.

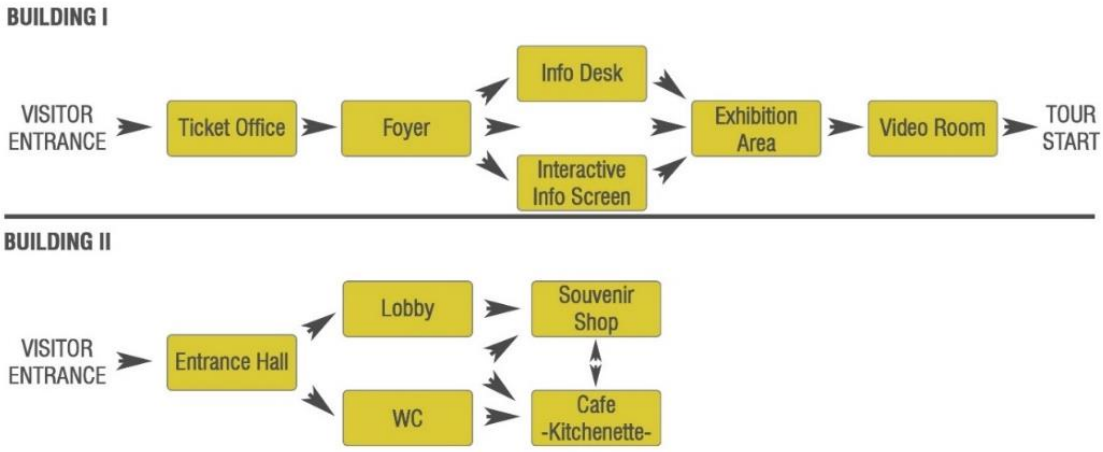


Figure 5. 14 Function Flow Charts of Permanent Structures (Gündüz Çetinkaya, 2018)

The walkway is designed to allow visitors to easily perceive tour route and to navigate on a smooth surface instead of an existing rough surface. The surface of the platform is made of beige steel wire mesh while supporting parts are made up of beige steel box profile. Steel joints which are concatenating box sections and earth screw anchors work as an elbow in order to compensate ground skewness. Steel mesh and box sections are combined by weld however whole platform unit will be fixed with earth screw anchor to the ground in order not to damage any remain and to be reversible (Figure 5. 15).

The bench with detail drawing is designed to allow visitors to rest during their tour at resting points which have vista or panorama. Benches have four legs with adjustable length. These legs let to create a flat seating area almost at 10% incline without any damage to current topography. Benches are made up of black painted steel box sections with solid wood seating area on top. Solid wood seating laths and box sections are combined by screwing while bench legs will be fixed with earth screw anchor to the ground in order not to damage any remain and to be reversible (Figure 5. 16).

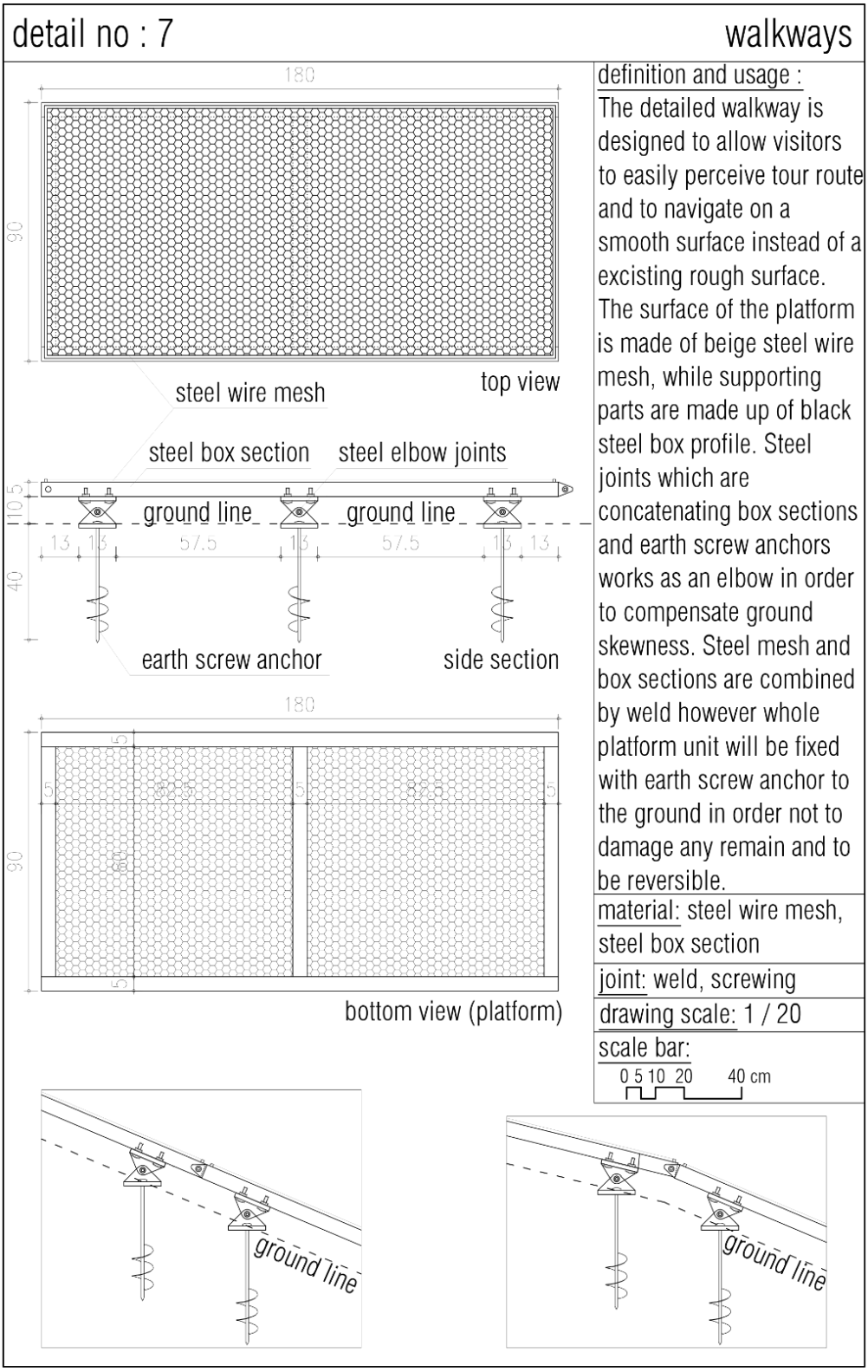


Figure 5. 15 Detail Drawing of Walkways (Gündüz Çetinkaya, 2018)

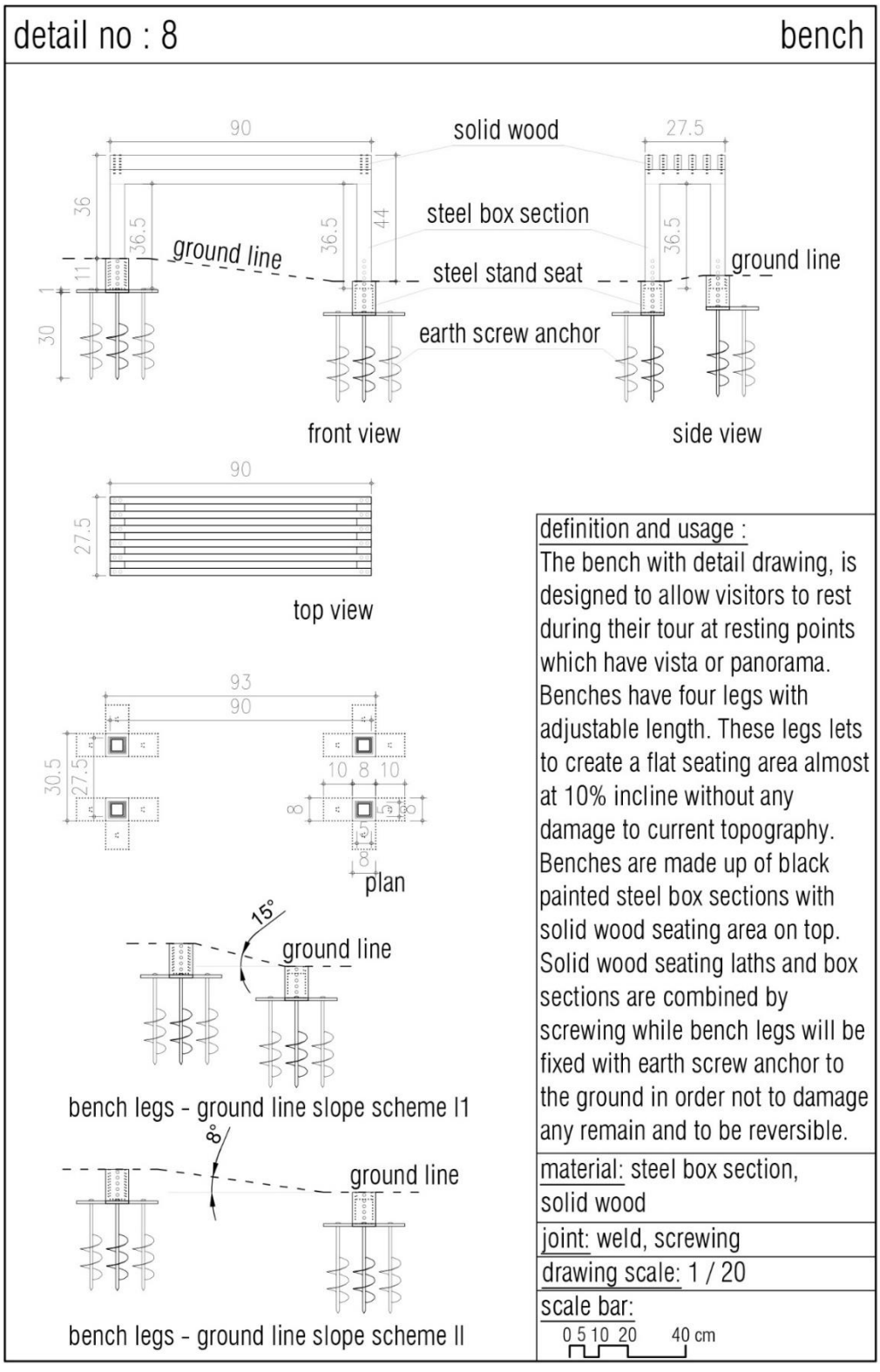


Figure 5. 16 Detail Drawing of Bench (Gündüz Çetinkaya, 2018)

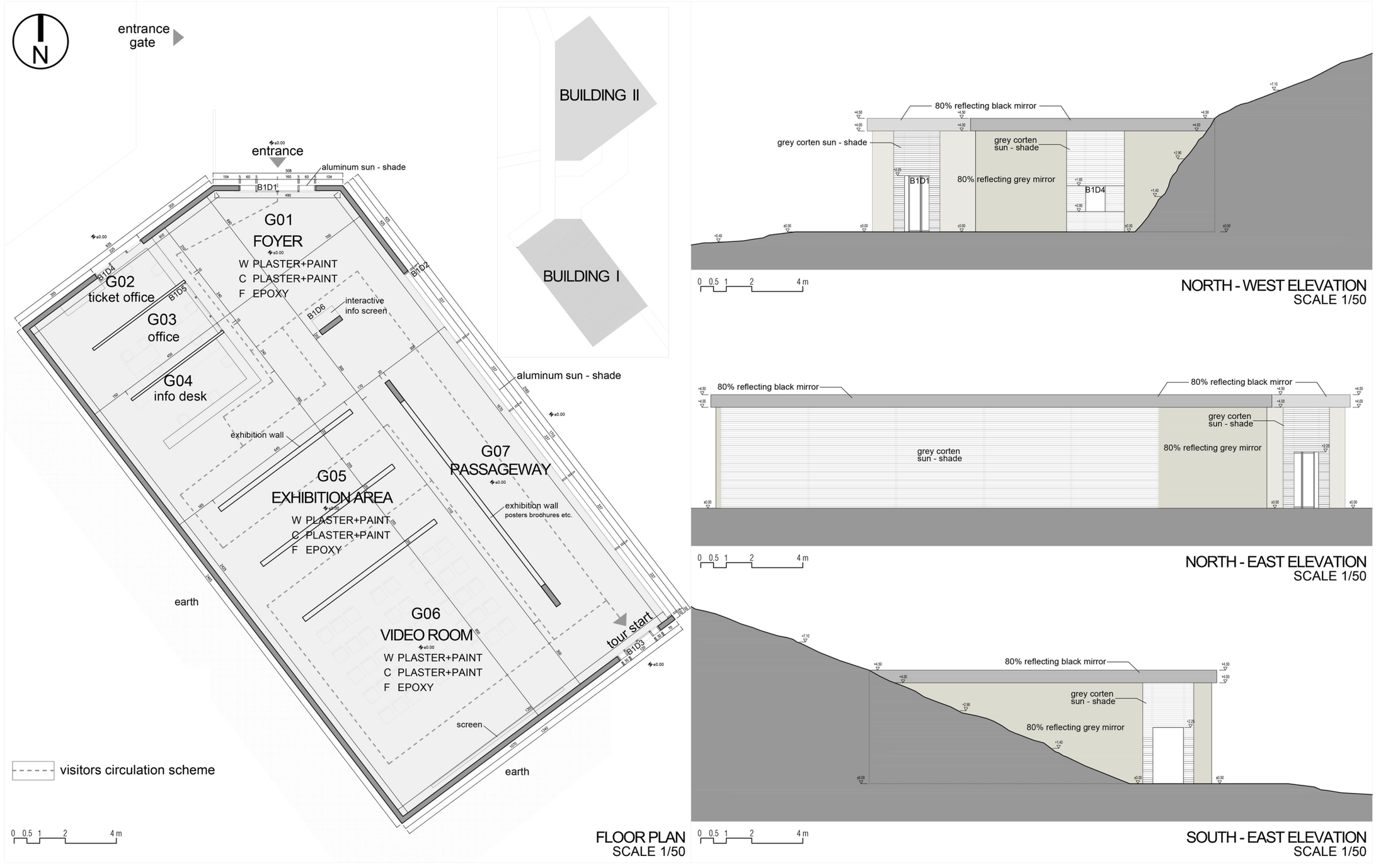
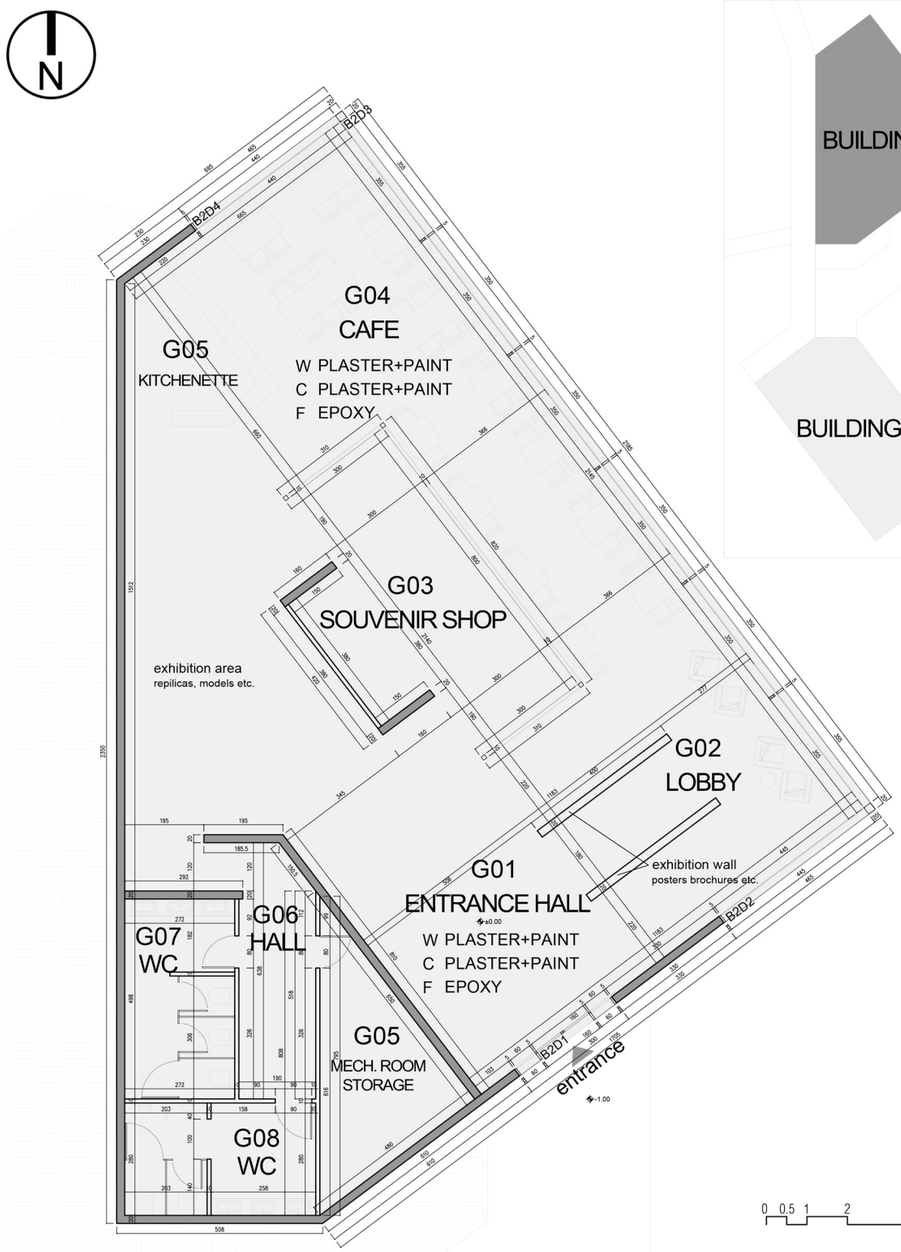
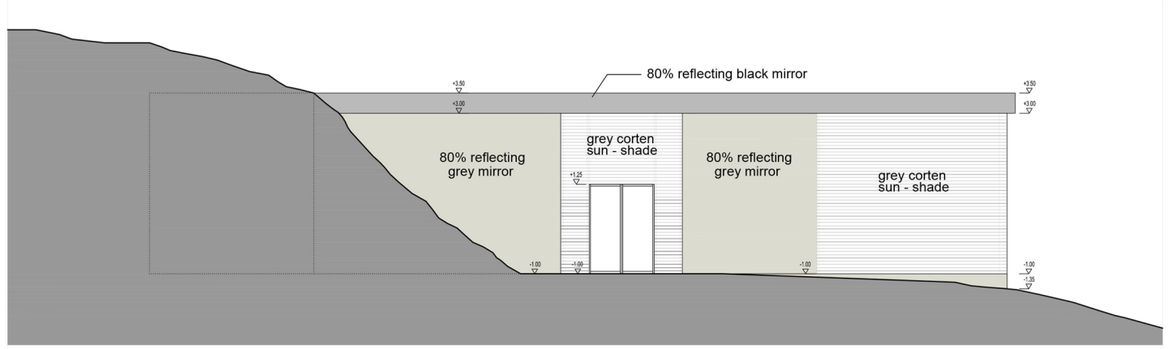
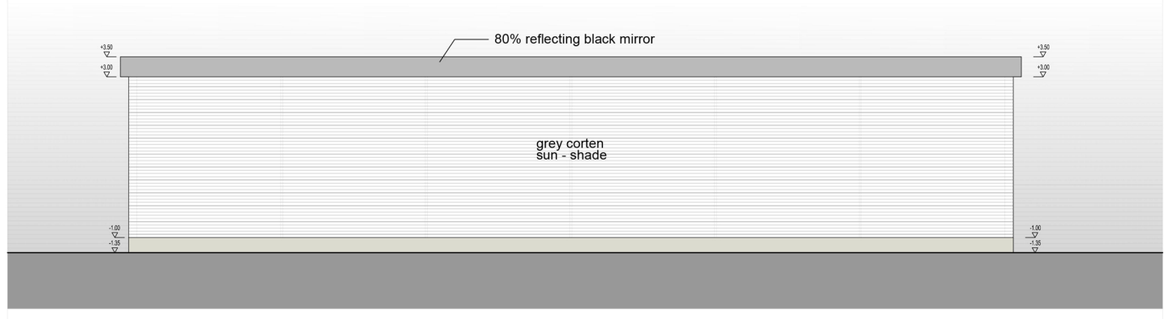


Figure 5. 17 Architectural Drawings of Building I (Gündüz Çetinkaya, 2018)

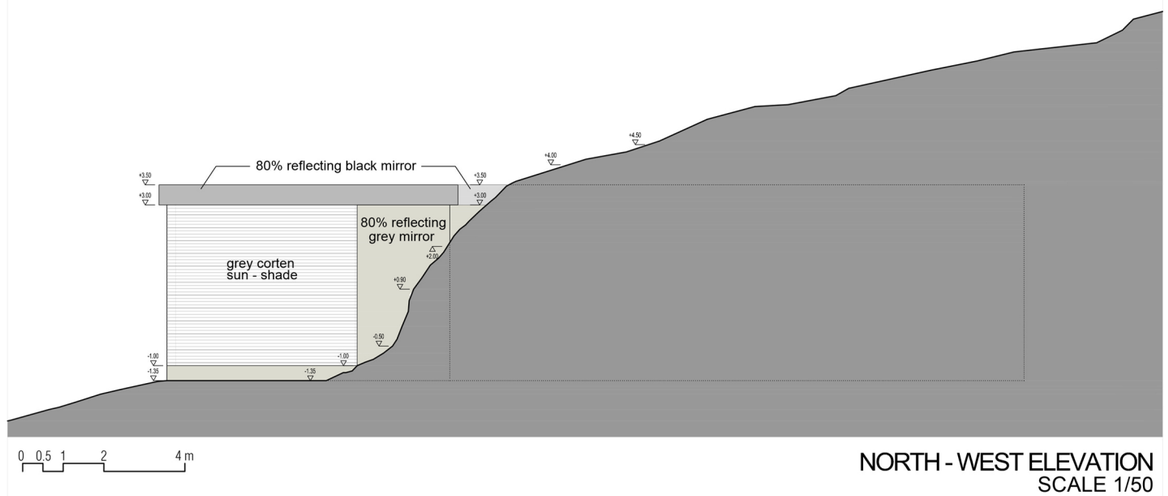




SOUTH ELEVATION
SCALE 1/50



NORTH - EAST ELEVATION
SCALE 1/50



NORTH - WEST ELEVATION
SCALE 1/50

Figure 5. 18 Architectural Drawing of Building II (Gündüz Çetinkaya, 2018)

It is realized that the visitor center was built within the scope of the environmental plan at the Zeugma archaeological site, during the process of this study (Figure 5. 19). This situation is ignored as the study is almost completed and it is preferred to evaluate the interventions according to the principles determined in the study.



Figure 5. 19 Newly Built Visitor Center, Source: http://gazianteproloveveanitlar.gov.tr/TR-183410/gaziantep-zeugma-orenyeri-cevre-duzenlemesi-isi.html, last accessed in 10 May 2019

It is found positive that the structure, which could not be examined on site, is built with a light and modular construction technique, inoffensive material, and color choices, and preferred to be built on the filler instead of excavated ground in line.



Figure 5. 20 Construction Technique of Newly Built Visitor Center, Source: http://gazianteproloveveanitlar.gov.tr/TR-183410/gaziantep-zeugma-orenyeri-cevre-duzenlemesi-isi.html, last accessed in 10 May 2019

Although it is difficult to make a meaningful interpretation of its position as it is not known what the general arrangement is foreseen in the area, it is disadvantageous that the building was built away from the existing trenches. In addition, multiple and separate masses in the design of the visitor center are found to be negative due to the fact that the base area of the building complex increased.

CHAPTER 6

CONCLUSION

The problem of how an archaeological site that has been concealed/invisible, can be presented to and can be interpreted by people is that this study has concentrated on. As known, seeing is not enough to perceive visual data, but it is essential to see visual data to be perceived. Accordingly, the direct relation between the sense of sight and perception, which is necessary for an effective presentation plan made the purpose of this study and it has focused on transforming the archaeological site, whose remains were left concealed, perceptible to the visitors by the help of the proper presentation techniques and tools.

In order to protect a heritage place, it is insufficient to have the values that are known only by professionals, it should be transferred to non-professionals who have the ability to manipulate and generating the public consciousness on place thanks to their numerical superiority. Moreover, the preservation of a heritage place is directly related to the existence of economic sources and academic or field knowledge to meet the needs of the site, while obtaining the economic sources of a heritage site is directly related to the public interest that this site has created in a whole or a significant part of society. At this point, it is the main obstacle against the rise of public interest is the lack of being able to comprehend the area, to make connections with it and to meet audiences' expectations in a certain scale.

In the thesis, Zeugma archaeological site is chosen as a case for examining the pre-mentioned problem and developing suggestions and guidelines serving to eliminate the problem to a large extent. The main feature of the Zeugma archaeological site, that makes it the case the thesis works on, is its being a concealed settlement because of two main reasons. The Zeugma archaeological site has been

flooded due to wrong state policies and has been constraint to the ground or protective shelters since most of the stones the settlement built with is not durable. This problematic character of the settlement, which is condemned itself to be concealed, directly overlaps the problem described above and constitutes a good case for the investigation of it.

In this context, investigating the purpose, principles, and methods of presentation concept, understanding the case, evaluating it as a site to be presented and, accordingly, determining the appropriate methods of presenting the concealed archaeological site were the main subjects handled in this study by aiming to eliminate the problem mentioned above.

A project, that based upon a study concentrates on nothing but a specific topic, it could be unconnected with the overall context of the site. Therefore, in this study, it has been accepted that the proposals regarding the presentation of an archaeological site as well as any cultural heritage place should be comprehensive.

All the researches, examinations and evaluations carried out within the scope of the study have been made as a basis for the proposals to be made about the presentation of a concealed archaeological site. The first of these aims to understand the priorities, requirements, and possibilities for the presentation of cultural heritage places. In this respect, it was the first step to understand the theoretic development, aims, and principles of the concept related to the subject. Following this phase, conventional and contemporary presentation techniques and tools used or have the possibility to be used in heritage places were examined with their examples, advantages, and disadvantages. Besides, to form a base for the determination process of the most appropriate one, these techniques and tools were evaluated according to criteria such as location, maintenance and update constraints, the dependency of a device or a professional, cost and possible contributions to visualization of a concealed site. All the examinations and evaluations mentioned above should be taken as a

method which is a contribution of this study and this is an adaptable method of determination of presentation techniques and tools.

By reason of it is being important and necessary to understand all the components of the site in the presentation of a cultural heritage site; Zeugma archaeological site has been studied in terms of its location, boundaries, natural characteristics, historical background, excavation, research and conservation history, natural and geographical aspects, access, and physical environment by help of site surveys and literature research. The researches and studies on the topics listed above were used to evaluate the values, problems, and potentials of the site to be presented. In other words, it has been ensured that the needs, strengths, problems of the site and threats on the site to be presented to and to be interpreted by non-professionals or visitors can be understood.

In this study, a preliminary project, which is focusing on the effective presentation of the Zeugma archaeological site, has been prepared based on the accumulation of the researches, examinations, and evaluations up to this point. In that vein, the general framework of the presentation project, principles and approach, appropriate presentation techniques and tools, layers of scenarios and architectural program were determined. These suggestions, which are focused on eliminating the problems of the field and meeting the needs of the area, were sharpened in preliminary project detail. Undoubtedly, every architect will want to deal with the needs put forward in his own original approach and form. It should not be ignored that the project prepared for the presentation of the subject area is not a prototype. The result and the decisions come with the data provided by the site itself, they are site specific. However, approach and the method defined in this study could be easily adopt for another cultural heritage site and can be updated with the developing technology and vision of the designer(s) who handles the project. The main issue of the study is to guide the designer(s) by simulating the problem-solving process is handled, not the form or detail that arises.

In general, generating a method of handling the presentation of a concealed archaeological site, defining and examining an approach to evaluation and determination of the presentation techniques & tools, introducing the method of determining different scenarios according to the layers of visitor demands, producing reversible and harmless details within the scope of the study should be considered as the results and contributions of this study. In addition to all these, this study will be able to form a basis for other researches and studies to be carried out as well as a conservation and presentation project to be prepared for the Zeugma archaeological site.

If it is necessary to point out some of the issues in which the study can serve as a base or which can be further elaborated in another study, the methodology stated for determination of scenario layers for cultural heritage places, implementation processes (data collection, evaluation, overall composition etc.) of emerging presentation techniques such as AR and VR are the most conspicuous ones. In addition to those, ensuring the correlation between the site and the museum can be another notable topic to get into.

In the study conducted, there are also objectives that cannot be reached because of the reasons beyond control. One of the mentioned reasons was the inability of arranging an interview with the stakeholders in the management levels from the municipality or the governorship. Accordingly, the information on the future of the site, and the upper-scale scenarios got missing and the study became disconnected from the general policies over the city of Gaziantep and the region. Another reason is that only one architect had handled the work that needs to be carried out in a multidisciplinary manner. Although this study aims to produce architectural solutions in line with the theories and principles of conservation, proposals made by a team consisting of professionals from different disciplines will be more successful in eliminating the existing problems.

REFERENCES

Abadie-Reynal, C., & Ergeç, R. (2012). Zeugma. Paris: De Boccard.

Akyol, A. (2009). Material Characterization of Ancient Mural Paintings and Related Base Materials: A Case Study of Zeugma Archaeological Area. Unpublished Master's Thesis, Middle East Technical University, Ankara, Turkey.

Akyol, A., Kadıoğlu, Y. K. and Demirci, Ş. (2011). Zeugma (Gaziantep) Antik Kenti Duvar Resimleri Arkeometrik Çalışmaları. In Anadolu Üniversitesi Bilim ve Teknoloji Dergisi. Vol.12. No.1. 37-56

Albustanlıoğlu, T. (2015). Zeugma (Arulis/Ehneş) taş ocaklarında ismi belirlenen bir başka lejyon: Legio IIII Flavia Felix. Anadolu (Anatolia), 0(41), 135-158.

Algaze, G. (1989). A New Frontier: First Results of the Tigris-Euphrates Archaeological Reconnaissance Project, 1988. Journal of Near Eastern Studies, 48(4), 241-281.

Algaze, G., Breuninger, R., Knudstad, J. (1994). The Tigris-Euphrates Archaeological Reconnaissance Project: Final report of the Birecik and Carchemish Dam Survey Areas, Anatolica,20, p.1-96.

Aylward, W. (2013). The Rescue Excavations at Zeugma in 2000. in: W. Aylward (ed.), Excavations at Zeugma, Conducted by Oxford Archaeology (California 2013) 1-54

Bağcı, S. (2010). A Proposal for the Preservation and Integrated Presentation of Archaeological and Natural Resources in the Case of METU Campus Area. Unpublished Master's Thesis, Middle East Technical University, Ankara, Turkey.

Başağaç, Ö. (2005) Presentation of Classical Archaeological Sites in Virtual Environment Case Study: Sagalassos. Unpublished Master's Thesis, Middle East Technical University, Ankara, Turkey.

Beck, L., & Cable, T. T. (2002). Interpretation for the 21st century: Fifteen guiding principles for interpreting nature and culture. Champaign, IL: Sagamore.

Brochu, L., & Merriman, T. (2002). Personal interpretation: Connecting Your Audience to Heritage Resources. Fort Collins, CO: National Association for Interpretation.

Bruno, F., Bruno, S., Sensi, G. D., Luchi, M., Mancuso, S., & Muzzupappa, M. (2010). From 3D reconstruction to virtual reality: A Complete Methodology for Digital Archaeological Exhibition. Journal of Cultural Heritage, 11(1), 42-49.

Burdea, G., & Coiffet, P. (2012). Virtual Reality Technology. Hoboken, NJ: J. Wiley-Interscience.

Callebaut, D., Killebrew, A. E., & Silberman, N. A. (2004). Interpreting the past: Presenting archaeological sites to the public. Brussels: Vlaams Instituut voor het Onroerend Erfgoed.

Chitty, G. (2005). Managing Historic Sites and Buildings Reconciling Presentation and Preservation. London: Routledge.

Early, R. (2003). Zeugma: Interim Reports: Rescue Excavations (Packard Humanities Institute), Inscription of Antiochus I, Bronze Statue of Mars, House and Mosaic of the Synaristôsai, and Recent Work on the Roman Army at Zeugma. Portsmouth, RI: Journal of Roman Archaeology.

Ergeç, R. (1994). Belkıs/Zeugma Mozaik Kurtarma Kazısı 1992. In IV. Müze Kurtarma Kazıları Semineri. 321-337. Ankara: Ankara Üniversitesi Basımevi.

Ergeç, R. (1996). 1993-1994 Belkıs/Zeugma Kurtarma Kazıları. In VI. Müze Kurtarma Kazıları Sempozyumu. 357-369. Ankara: T.C. Kültür Bakanlığı Milli Kütüphane Basımevi.

Ergeç, R. (1998). Belkıs/Zeugma Roma Hamamı ve Kompleksi Kurtarma Kazısı. In VIII. Müze Kurtarma Kazıları Semineri. 419-443. Ankara: Kültür Bakanlığı Milli Kütüphane Basımevi.

Ergeç, R. (2005). Zeugma'nın Kronolojik Tarihi. Ayıntap, 4, 3.

Ergeç, R. (2006). Uluslararası Geçmişten Geleceğe Zeugma Sempozyumu 20-22 Mayıs 2004, Gaziantep = International Symposium on Zeugma: From Past to Future. Gaziantep: Gaziantep Büyükşehir Belediyesi.

Ergeç, R. (2000). 1992-1999/2000 Belkıs/Zeugma Çalışmalar, Araştırmalar ve Kazılar. In Arkeoloji ve Sanat Dergisi. No.98. 20-29

Ertan, Ş., & Ertan A. (2000). Aşağı Fırat Boylarında Yaban Hayatı II, Arkeoloji Sanat, no:99.

Frieman, C., & Gillings, M. (2007). Seeing Is Perceiving? World Archaeology, 39(1), 4-16.

Geçmişten Geleceğe Bir Koprüdür Zeugma. (2001). Ankara: Başbakanlık Güneydoğu Anadolu Projesi Bölge Kalkınma İdaresi Başkanlığı.

Görkay, K. (2017). Mosaic Programmes in Domestic Contexts at Zeugma. Journal of Mosaic Research, 10, 183-211.

Görkay, K. (2017). Zeugma Lejyon Yerleşkesi: Yeni Araştırmalar, Sonuçlar ve Ön Değerlendirmeler. Anadolu (Anatolia), 0(41), 147-178

Görkay, K. (2012). Zeugma in Light of New Research, Stephanèphoros De L'économie Antique À L'asie Mineure, 275-300.

Görkay, K. (2015). Belkis-Zeugma ve mozaikleri. Gaziantep: Gaziantep Valiliği, İl Kültür ve Turizm Müdürlüğü.

Görkay, K. (2015). Geçmişten günümüze bir geçit Zeugma. Beyoğlu, İstanbul: Türkiye İş Bankası Kültür Yayınları.

Görkay, K., & Akkaya, O. (2015). Tarihin hazinesi Zeugma. İstanbul: National Geographic Türkiye.

Hartmann, M., & Speidel, M. A. (2013). "Military Installations at Zeugma: An Overview of the Swiss Archaeological Investigations 2001–2003", in W. Aylward, Excavations at Zeugma, Conducted by Oxford Archaeology 3 (California) 381-392.

ICOMOS Charter for Places of Cultural Significance (Burra Charter), 1999.

ICOMOS Charter for the Conservation of Historic towns and Urban Areas, 1987.

ICOMOS Charter for Protection and Management of the Archaeological Heritage, 1990.

ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites, 2008.

ICOMOS Charleston Declaration on Heritage Interpretation, 2005.

ICOMOS Ename Charter for the Interpretation of Cultural Heritage Sites (Proposed Final Draft), 2007.

ICOMOS International Cultural Tourism Charter, 2002.

ICOMOS Report on a One-Day Roundtable Discussion," Interpretation Standards at World Heritage Sites: Is There a Need for Assessment Criteria for On-Site Interpretation Programmes and Emerging Interpretive Technologies?", 2006.

Kennedy, D. L & Braund, D. (1996). The Roman Army in the East. Journal of Roman Archaeology, Ann Arbor, MI.

Kennedy, D. (1995). Zeugma Archaeological Project Preliminary Season 1993. In XVI. Kazı Sonuçları Toplantısı. 207-215. Ankara: T.C. Kültür Bakanlığı Milli Kütüphane Basımevi.

Kennedy, D. (1998). The Twin Towns and The Region. In D. L. Kennedy (Ed.), The Twin Towns of Zeugma on the Euphrates. Rescue Work and Historical Studies (Vol. Supplementary Series, No.27, pp. 30-60). (Journal of Roman Archaeology, Supplementary Series). Portsmouth, Rhode Island, USA: Journal of Roman Archaeology.

Kennedy, D. (1998). Drowned Cities of the Upper Euphrates. Aramco World, 49 (5 Sept/Oct), 20-27.

Kennedy, D., & Freeman, P. (1998). Rescue excavations (1993). In D. L. Kennedy (Ed.), The Twin Towns of Zeugma on the Euphrates. Rescue Work and Historical Studies (Vol. Supplementary Series, No. 27, pp. 60-79). (Journal of Roman Archaeology, Supplementary Series). Portsmouth, Rhode Island, USA: Journal of Roman Archaeology.

Karaca, C. (2008). Geoarchaeological Investigations in Zeugma. Unpublished Master's Thesis, Middle East Technical University, Ankara, Turkey.

Knudson, D. M., Beck, L., & Cable, T. T. (2003). Interpretation of Cultural and Natural Resources. State College, Pa.: Venture Pub.

"Kommagene Nemrut Koruma Gelistirme Programi." Kommagene Nemrut Koruma Gelistirme Programi. N.p., n.d. Web. 3 Sept. 2012. <http://www.nemrut.org.tr>. 21.

Mohammed-Amin, R. K. (2010). Augmented reality: A Narrative Layer for Historic Sites (Unpublished master's thesis). University of Calgary, Alberta.

Oldfather, C. H., Sherman, C. L., Welles, C. B., Geer, R. M., Walton, F. R (1963). Diodorus Siculus in twelve volumes. London: W. Heinemann.

Olşen, K., Bayram, F., Özme, A., Ataş, K., Kepenek, Y., Dönmez, H., & Süvari, C. (Eds.). (1996). Kazı Sonuçları Toplantısı (Vol. 1, Rep.). Ankara: T. C. Kültür Bakanlığı Yayınları.

Önal, M., & Ergenç, R. (2006). Belkıs / Zeugma ve Mozaikleri. İstanbul: Promat Basım Yayın.

Önal, M. (2006). Zeugma Mühür Baskılarında Krallar, Imparatorlar, Imparatoriçeler, Filozoflar ve Semboller. Unpublished Doctoral Dissertation, Selçuk University, Konya, Turkey.

Önal, M. (2009). Danae Evi'nin Mozaikleri, Journal of Mosaic Research, 3. 53-69.

Özçakır, Ö. (2012). Interpretation and Presentation of Natural and Cultural Heritage Sites: Environmental Design Project for Göreme Open Air Museum. Unpublished Master's Thesis, Middle East Technical University, Ankara, Turkey.

Özden, E. F. (2000). Zeugma Yalnız Değil: Türkiyede Barajlar ve Kültürel Miras. İstanbul: Türkiye Ekonomik ve Toplumsal Tarih Vakfı.

Özükan, B. (2017). Osmanlı ve Türkiye coğrafyasındaki izleriyle Tabula Peutingeriana: Roma Imparatorluğunun 2000 Yıllık Yol Haritası: Romadan Sonra Imparatorluğun En Önemli Kentleri Konstantinopolis İstanbul - Antiochia Antakya - Nicomedia İzmit - Nicea İznik. İstanbul: Boyut Yayıncılık.

Parker, B. J., Creekmore, A., Cavallo, C., Maliepaard, R., & Paine, R. (2002). The Upper Tigris Archaeological Research Project: A Final Report from the 1999 Field Season. Anatolian Studies, 52, 19-74.

Pedersen, A. (2002). Managing tourism at World Heritage Sites: A Practical Manual for World Heritage Site Managers. Paris: UNESCO World Heritage Centre.

Percival, A. (1979). Understanding Our Surroundings: A Manual of Urban Interpretation. London: Civic Trust.

Pletinckx, D., Callebaut, D., Killebrew, A., & Silberman, N. (2000). Virtual-reality Heritage Presentation at Ename. IEEE Multimedia, 7(2), 45-48.

Shalaginova I. (2007). Ethical Principles of Heritage Presentation for World Heritage Sites. Cottbus, Brandenburdische Technische Universitat.

Speidel, M. P. (1998). Legio IIII Scythica, its Movements and Men. JRA Supp. No. 27, Portsmouth.

Tanaka, E. (2013). Cultural Heritage Issues in Turkey and the Category of 'Europe': Roman Mosaic Collections Discovered in Zeugma, Southeast Turkey, Senri Ethnological Studies, 81, 149-168.

Tanaka, E. (2014). Heritage destruction in context: The case of the Roman mosaics from Zeugma, Turkey. International Journal of Heritage Studies, 21(4), 336-353.

Tilden, F. (1977). Interpreting our heritage. Chapel Hill: University of North Carolina Press.

Töre, T. (2010). Sanal Gerçeklik ve Mimari Koruma (Anlatım ve Sunum Bağlamında Bir Değerlendirme). Unpublished Master's Thesis, Mimar Sinan University, İstanbul, Turkey.

Wagner, J. (1976). Seleukeia am Euphrat, Zeugma. Wiesbaden: Reichert.

Winther-Jacobsen, K. (2015). ZEUGMA - (W.) Aylward (ed.) Excavations at Zeugma. Conducted by Oxford Archaeology. Los Altos, CA: The Packard Humanities Institute, 2013.

Zeugma: A Bridge from Past to Present. (2001). Ankara: GAP, Republic of Turkey Prime Ministry, Southeastern Anatolia Project, Regional Development Administration.

Augmented Reality. (n.d.). Retrieved March 12, 2019, from http://www.noreal.it/site2011/

Augmented Works. (2010, May 04). Augmented GeoTravel - Best Augmented Reality iPhone Travel Guide App. Retrieved March 12, 2019, from https://www.youtube.com/watch?v=DpmAyen4sv0,

Exhibitions pam Ename. (n.d.). Retrieved March 12, 2019, from http://visualdimension.be/heritage/exhibitions/pages/pam_ename.html

Explore the Acropolıs. (n.d.). Retrieved March 10, 2019, from http://www.acropolisvirtualtour.gr/

Kaman, Kale Höyük Archaeological Museum, Virtual Tour. (n.d.). Retrieved 17 April, 2019, from http://www.kalehoyukarkeolojimuzesi.gov.tr/kamanWeb/kaman_web.html

Kurt. (2017, June 05). Heathen's Gate: Ingenious Overlay Reveals History of Ancient Roman Ruin. Retrieved January 18, 2019, from https://weburbanist.com/2017/06/01/heathens-gate-ingenious-overlay-shows-history-of-roman-ruin/

Kurt. (2018, April 03). Reconstructing Ruins: Gifs Reanimate 7 Ancient Architectural Wonders. Retrieved December 12, 2018, from https://weburbanist.com/2018/04/03/reconstructing-ruins-gifs-reanimate-7-ancient-architectural-wonders/

Lıfeclıpper At the St. Alban Valley in Basel, Switzerland. (n.d.). Retrieved March 14, 2019, from http://torpus.com/lifeclipper/

Methodology of VR Tech. (n.d.). Retrieved March 14, 2019, from http://visualdimension.be/heritage/methodology.html

Metropolitan Museum of Art #metkids. (n.d.). Retrieved March 12, 2019, from https://www.metmuseum.org/art/online-features/metkids/explore/

Müze Kat Planı Müze'de Neler Var? (n.d.). Retrieved December 20, 2018, from http://www.zeugma.org.tr/mkp.aspx

ŞAHİN, M. H. (n.d.). Retrieved April 18, 2019, from http://www.zeugma.org.tr/eserler.aspx?eser=16

The Museum of the World, British Museum & Google Cultural Institution. (n.d.). Retrieved April 10, 2019, from https://britishmuseum.withgoogle.com/

To Be a Roman Citizen in Ancient Caesarea. (n.d.). Retrieved March 10, 2019, from http://www.arch-tour.com/index-he.html

Tongguan Kiln Ancient Town. (2018). Retrieved March 12, 2019, from http://en.changsha.gov.cn/travel/Attractions/

Unimersiv - Learn Through Virtual Reality. (2016, September 26). Explore the Acropolis of Athens in Virtual Reality - Unimersiv. Retrieved March 10, 2019, from https://www.youtube.com/watch?v=y9zWmURQcyc

Zeugma Archaeological Project. (n.d.). Retrieved December 20, 2018, from http://www.zeugmaarchproject.com/index.php?option=com_content&view

Zeugma Sanal Tur. (n.d.). Retrieved December 24, 2018, from https://www.360tr.com/gap/iller/gaziantep-zeugma-kazi/index.html