

GIS APPLICATIONS AND HERITAGE AWARENESS IN URBAN  
ARCHAEOLOGY:  
A CASE STUDY ON ULUS, ANKARA

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ECEM AYŞE ÇELİK

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submitted by **ECEM AYŞE ÇELİK** in partial fulfillment of the requirements for  
the degree of **Master of Science in Settlement Archeology, the Graduate  
School of Social Sciences of Middle East Technical University** by,

Prof. Dr. Sadettin KIRAZCI  
Dean  
Graduate School of Social Sciences

---

Prof. Dr. Deniz Burcu ERCİYAS  
Head of Department  
Department of Settlement Archaeology

---

Prof. Dr. Lale ÖZGENEL  
Supervisor  
Department of Settlement Archaeology

---

**Examining Committee Members:**

Prof. Dr. Deniz Burcu ERCİYAS (Head of the Examining Committee)  
Middle East Technical University  
Department of Settlement Archaeology

---

Prof. Dr. Lale ÖZGENEL (Supervisor)  
Middle East Technical University  
Department of Settlement Archaeology

---

Prof. Dr. Musa KADIOĞLU  
Ankara University  
Department of Archaeology

---



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**Name, Last Name:** Ecem Ayşe ÇELİK

**Signature:**

## ABSTRACT

### GIS APPLICATIONS AND HERITAGE AWARENESS IN URBAN ARCHAEOLOGY: A CASE STUDY ON ULUS, ANKARA

ÇELİK, Ecem Ayşe

The Graduate School of Social Sciences, The Department of Settlement Archaeology

Supervisor: Prof. Dr. Lale ÖZGENEL

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The intensive urban construction and urban planning that does not prioritize cultural heritage in Turkey, pose a significant threat to the preservation of archaeological heritage in urban environments, which indeed requires a comprehensive, interdisciplinary and participatory conservation approach. This thesis aims to address heritage conservation in the context of urban archaeology and digital public archaeology. It discusses the potential of Geographic Information Systems (GIS) in establishing a digital inventory, conservation of cultural heritage and public outreach and concretizes the argument by a pilot study on Ulus, Ankara. By exposing the multi-layered character of the city through mapping the archaeological heritage of the Phrygian and Roman periods it foremost aims to bring together a digital content of both cultural layers, which is articulated to serve as a platform for public engagement. Representing an initial working attempt, this digital inventory is open for further elaboration and revision.

**Keywords:** Geographic Information Systems (GIS), Cultural Heritage, Urban Archaeology, Digital Archaeology, Ulus, Ankara

## ÖZ

### KENT ARKEOLOJİSİNDE CBS UYGULAMALARI VE KÜLTÜREL MİRAS FARKINDALIĞI: ULUS, ANKARA ÖRNEĞİ

ÇELİK, Ecem Ayşe

Sosyal Bilimler Enstitüsü, Yerleşim Arkeolojisi Ana Bilim Dalı

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Türkiye'deki yoğun kentsel yapılaşma ve kültürel mirası öncelemeyen kent planlamaları, kentsel bağlamlardaki arkeolojik mirasın korunmasına yönelik önemli bir tehdit oluşturmaktadır, ve bu durum kapsamlı, disiplinler arası ve katılımcı bir koruma yaklaşımı gerektirmektedir. Bu tez, mirasın korunmasını kentsel arkeoloji ve dijital toplum arkeolojisi bağlamında ele almayı amaçlamaktadır. Coğrafi Bilgi Sistemlerinin (CBS) dijital envanter oluşturma, kültürel mirasın korunması ve kamusal erişimi konularındaki potansiyelini tartışmakta ve Ankara Ulus'ta yapılan bir pilot çalışma ile argümanı somutlaştırmaktadır. Frig ve Roma dönemlerine ait arkeolojik mirasın haritalanması yoluyla kentin çok katmanlı karakterini ortaya koyarak, her iki kültürel katmana ait dijital bir içeriği bir araya getirmeyi ve bu içeriğin kamusal katılım için bir platform olarak hizmet etmesini amaçlamaktadır. Bir öncü, ilk çalışmayı temsil eden bu dijital envanter, daha fazla detaylandırılmaya ve revizyona açıktır.

**Anahtar Kelimeler:** Coğrafi Bilgi Sistemleri (CBS), Kültürel Miras, Kent Arkeolojisi, Dijital Arkeoloji, Ulus, Ankara

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## CHAPTER 1

### INTRODUCTION

#### 1.1. Aim

The aggressive construction activities and urban sprawl, as witnessed in Turkey's cities for a long time, threaten the existence and protection of archaeological heritage in urban environments. Urban renewal, gentrification, and transformation projects make it challenging to preserve the city's historical layers and implement sustainable conservation practices in urban archaeological sites. This heritage is mainly located in a living urban entity, so it is more vulnerable to destruction and deterioration caused by poor renovation or conservation policies. Guzman *et al.* (2014) state two major threats to World Heritage cultural properties: management deficiencies and aggressive growth. Thus, integrating cultural heritage into urban development projects, especially in stratified cities, has become fundamental to urban heritage protection. Doing urban archaeology in stratified cities with various cultural layers, in addition, is difficult for two main reasons. First, many urban centers have been inhabited continuously since very early stages, and as such, a considerable amount of information belonging to early layers had already disappeared or destroyed beneath the more recent ones; second, today's urban centers are built over earlier settlements, which makes research more challenging. Efficient conservation practices in urban contexts, then, require disseminating information on a public scale and hence integrating public and archaeology. Informing the public about the cultural heritage of the context in which they live, thereby developing awareness and interest, stands out as a crucial step in urban heritage conservation. Digital tools help in many ways to achieve this goal by narrating the heritage in different ways. Digitalization of heritage information facilitates the integration of a larger public and enables the development of other strategies, like providing navigation to further information

through web-based platforms. This is by no means a process to pursue within archaeology only; doing digital archaeology in an urban settlement, aiming for public integration and outreach requires the integration of various disciplines.

Understanding the historicity of the urban settlement through urban archaeology and designing integrative and comprehensive urban decisions is crucial. Urban archaeology is a multidisciplinary field and brings together not only archaeologists, architects, urban planners, and urban and architectural historians but also decision-makers, and hence can provide multi-dimensional information about the historical development of urban patterns (Çağlayan, 1999), and serve to approach urban planning and heritage protection strategies in an inclusive and integrated way (Belge, 2005). By exploring the relationship between a city's past and future, urban archaeology can reconcile with urban development policies and projects. It must indeed be taken as a crucial aspect of heritage conservation decisions.

Urban history studies must be designed with methods that support a multi-dimensional and interdisciplinary approach in stratified cities with a multicultural heritage. An efficient tool for this kind of work is GIS (Geographic Information System). Its ability for the collection, processing and production of a vast amount and variety of information and data makes it a strong tool for many uses. GIS is an efficient data-collecting and processing system for cities that continuously grow and change. Its data processing capacity and competence have made GIS an integral part of heritage management in the urban planning processes. It is now effectively used to support and plan urban services and efficient cultural heritage management (Spiridon *et al.*, 2016).

GIS is a software that compiles geographic information by providing kinetic, spatial, and sensory elements of space, integrates diverse data from different sources, facilitates collecting and comparing spatial and archaeological data, and makes it possible to visualize, integrate, and analyze historical and geographical data, and to merge them in a coherent way (Lilley and Porter, 2016; Nicoletti, 2018). It allows to work with big data to visualize spatial relationships. It thus helps to assess better the historical events, settlements, connective roads, and more complex relationships by

giving a holistic view. Furthermore, it enables the upgrade and/or revision of digitalized data without facing the risk of data loss, and as such, it facilitates planning, decision-making, and public outreach processes. Such processes, in addition, could also be done without harming the tangible heritage. GIS gives references spatially and shares geospatial information using coordinates, enabling the overlay of geographic and topographic maps and archaeological data, thus displaying the heritage assets as an inventory.

Additionally, the visualized maps can be imported for use in digital cartography. As GIS software combines these tools to create and use extensive spatial data, its usage eases to see the historical processes and urban changes in cities. By applying GIS and digital mapping, the layers and previously unrecorded gaps of a historical city become visible and comprehensible. Therefore, GIS is a convenient method in urban archaeology, considering that representing the changes in time and comparing the data of different eras in archaeology is a challenging target to achieve (Virevialle, 2011). It is also a helpful method and medium to properly evaluate and manage the preservation of cultural heritage in urban development projects. Integrating digital tools, particularly GIS, into conservation and planning processes enables consideration of many types of information related to the subject (Lilley and Porter, 2016).

In an urban context, cultural assets often suffer from damage, connectivity loss, or historical continuity interruptions. Representing these assets in geographical data allows for better interpretation of finds and identifying connections between heritage assets. In addition, the created dataset can be utilized in future archaeological work and heritage conservation processes. In urban archaeological areas, therefore, it is crucial to work with a detailed digital inventory that includes all the archaeological heritage data organized systematically and standardized to ensure information and interpretation clarity. It is also essential to conduct spatial analysis to manage archaeological fieldwork, make informed decisions, and effectively coordinate them. By offering to work with precise locations and accurate information, GIS allows the integration of invisible layers into the current urban context without requiring lengthy and pricey studies and excavations.

In Turkey, GIS-based spatialization of urban archaeological heritage protection is limited. The preparation of spatial digital inventories to provide a systematic and organized database to be taken into account in the formulation of conservation projects and urban plans that prioritize urban archaeological sites, and urban projects that consider the integration of heritage with the local community are rather few. The illustrative case of this study, Ulus, the historical city center of Ankara; despite its historical significance, it lacks a proper heritage protection and conservation policy and management. The cultural assets in the area became exposed to damage, disintegration, coverage, and illicit excavations, especially following the rapid urban change and growth since the 1950s. Neglecting cultural heritage protection as an issue in urban policy-making processes resulted in the gradual loss of unrecalable heritage and public ignorance of the history of the area and the city. There is a lack of public awareness and appreciation of the importance of the cultural heritage in Ulus. Applying digital archaeology to urban archaeology in Ankara and similar cases, in this sense, becomes even more crucial as this will allow to "explore" the currently unseen past urban settlements and, respectively, provide the essential tools for public outreach and public integration. As Graham *et al.* (2020) state: "Digital archaeology in the 21st century is necessarily a public archaeology." Public archaeology offers the public opportunities to engage in archaeological practices and methodologies. Also, it brings valuable insights into the heritage of their surroundings. Public archaeology aims to develop research, projects, and methods for a better understanding of heritage conservation.<sup>1</sup> In recent years, the possibilities brought by digital technologies for public engagement with archaeology have significantly advanced. Alongside these advancements, there has also been a growing emphasis on more reproducible archaeological practices and more open, participatory approaches to data creation (Kansa *et al.* 2011; Bevan *et al.*, 2014).

This thesis aims to discuss the role, potential, and contribution of digital archaeology and digital mapping in multi-layered urban contexts by problematizing ways of integration between urban archaeology, cultural heritage management, heritage conservation, and public outreach. The research is designed from the perspective of

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<sup>1</sup> For public archaeology see: McGimsey, 1972; Merriman, 2004; Smith and Waterton, 2009; McDavid and McGhee, 2010; Matsuda and Okamura, 2011; Bollwerk, 2015; Richardson and Almansa-Sánchez, 2015; Moshenska, 2017; Gürsu, 2021.

digital public archaeology and in the scope of urban settlement. The emerging research questions, respectively, are: How can digital mapping help to facilitate collaborative models in understanding historical cities? In which ways does digital mapping show/represent multi-layeredness of urban settlements? Can digital mapping help the integration and conservation of cultural heritage in urban planning? and Does digital mapping help increase public awareness and public outreach for embracing cultural heritage?

To concretize the discussion, the study offers a pilot GIS-based mapping study on urban archaeological heritage in the historic city center of Ankara, Ulus; considering the limitations of a master's thesis research, only Phrygian and Roman periods are included in the analysis. The insights of a web-based GIS platform are contextualized to propose a web-based GIS platform idea to achieve a complementary and comprehensive platform for heritage protection, conservation, and public outreach.

## **1.2. Scope**

Ankara has been facing a significant challenge in preserving its historic urban fabric due to the lack of a comprehensive and sustainable urban heritage conservation plan. The piecemeal interventions in Ankara's urban fabric often led to debates and disagreements rather than consensus. This situation had a negative impact not only on regional development and cultural tourism but also on defining and protecting the city's cultural heritage, identity, and image, as well as establishing a strong sense of citizenship and belonging.

Many urban development projects have been processed in Ankara since the early 1920s, following its declaration as the capital of the Turkish Republic. However, Ulus' urbanization turned into an unprecedented and destructive process, mainly after the Second World War, that witnessed mass migration from the rural to urban centers, which led to housing shortage and uncontrolled urbanism. Several urban renewal projects and new buildings were implemented without concern for preserving the historical and archaeological assets and identity of Ulus. The area and its archaeological properties had become the target of unsuitable conservation

policies and urban planning because of the failure to integrate the archaeological, historical, cultural, geographical, and social characteristics of the place into urban development projects. Thus, with every implementation, the cultural heritage of Ulus became more exposed to getting harmed.<sup>2</sup>

The area has also suffered from uncertainties and undefined procedures and processes related to the legal context of cultural heritage, which creates problems in terms of defining site boundaries, historical layers, periods, types and characteristics, especially in multi-layered cities (Bilgin Altınöz, 2002). Many layers are already destroyed until protection regulations reach the site. That is why it becomes inevitable to establish a regulated inventory of the invisible and visible cultural heritage by producing a spatial heritage map, which can be used in processing the future implications of heritage conservation and planning.

Adopting a sustainable and holistic urban planning approach that considers Ankara's unique multi-layered historic fabric to address these issues, is vital. A comprehensive conservation plan requires effective communication and collaboration among various stakeholders, as heritage preservation is a shared responsibility that extends beyond decision-makers and requires the involvement of several specialists next to archaeologists. Active citizen participation, furthermore, is also essential in the planning process, as citizens play a decisive role in shaping the city's character.

Ankara and its surroundings have been home to various cultures, with its early history dating back to the Paleolithic Age (Erzen, 1946; Aydın *et al.*, 2005). The development of Ankara's old center Ulus into an urban area is generally dated back to the 8<sup>th</sup> century BC (Kadıoğlu *et al.*, 2011: 13). Thus, many visible and invisible cultural remains are concentrated in this area. Ankara, became a substantial urban city from the Roman period onwards. However, neither the Phrygian remains nor the Roman heritage received efficient conservation. In this context, the study, focuses on the first urban settlement period, the 8<sup>th</sup> century BC, and the Roman period that lasted until the 5<sup>th</sup> century AD. Two recent projects, are essential and served

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<sup>2</sup> For more information see: Şahin Güçhan, 1992; Tunçer, 2001; Karababa, 2002; Erkal *et al.*, 2005; Işık, 2012; Batuman, 2013; Tunçer, 2013; Kutlu, 2022.

exemplary for the scope of the thesis. The first is the research coordinated by Ela Alanyalı Aral, from the Department of Architecture at Middle East Technical University, studied the Phrygian tumuli in Ankara and the unknown northern Phrygian tumuli through aerial and topographic photographs and maps. The Phrygian period section of the thesis benefitted from this project.

The second study is the archaeological and epigraphic investigation of Roman Ancyra done by Musa Kadioğlu and Kutalmış Gökay, both from the Department of Archaeology in Ankara University that explored the available primary (first-hand scientific information) and secondary (ancient sources) data concerning the archaeological finds. This study, done between 2002 and 2007, located published and unpublished archaeological structures and created a digital map showing the ancient city plan. The Roman period section of the thesis is based on this comprehensive research. This study gathered the maps prepared and published in both works to propose a GIS platform to illustrate multi-layeredness and its presentation for public awareness.

The first chapter sets the stage by delving into the foundational literature on cultural heritage preservation, urban archaeology, and application of Geographic Information Systems (GIS). Chapter 2 presents a focused approach and explores urban and public archaeology within the context of digital archaeology. It employs case studies and examples to concretely illustrate the intersection between safeguarding urban heritage and using GIS applications, thereby establishing the crucial contextual framework for the study. The third chapter is dedicated to revealing urban archaeology's implications in the context of Turkey, spotlighting digitalization initiatives in the realm of cultural heritage. The assessment extends to the current state of the Ulus district, critically examining urban plans and their impacts for the Ulus historic city center. Chapter 4 is the core section of the discussion, in which there is a narrative on the case study's locale within the context of digital public archaeology. Furthermore, this chapter serves as a platform to showcase digital mapping projects that have been undertaken. Moreover, it develops and proposes a preliminary and possible heritage platform on the heritage of the historic city center using GIS.

### 1.3. Method

The first part of the study relies on the literature survey about urban archaeology, public archaeology, and digital archaeology with a focus on Geographic Information Systems (GIS); the legal framework of heritage management in Turkey and urban plans and their effects on the cultural heritage in Ankara is also discussed in this context. Data on Ankara's Phrygian and Roman layers are collected from the literature survey and the finds are arranged in table format to illustrate the totality of the found remains and studied data. Two GIS platforms are used to articulate the tabled data and to create a pilot study: *QGIS* to locate the finds and the heritage structures and understand the spatial information, and *ArcGIS StoryMaps* to further investigate GIS and its public engagement potential. The heritage route of visible Phrygian and Roman remains and the case study for Hacı Bayram Hill to explore the presentation of invisible heritage are designed and prepared by using *StoryMaps*.

The Phrygian and Roman heritage map in Ulus is created using *QGIS* software. *QGIS* is an open and accessible platform that allows the application of various data and analyses over geospatial information. It offers multiple plugins for different analyses, such as visibility analysis, least-cost path analysis, network analysis, and terrain analysis, among others. However, its interface is commonly perceived as more intricate compared to other GIS platforms used within this study.

*ArcGIS* and its *StoryMaps* feature are used to analyze and propose a web-based GIS heritage platform structure. *ArcGIS* is a paid platform for mapping that serves various features for spatial analysis, data collection and management, and 3D geographic information, among others. *StoryMaps*, which is a feature of *ArcGIS*, enables the combination of interactive maps with multimedia content and texts to tell a story. Application of *StoryMaps* started in 2011, as an idea to merge maps and multimedia content to create rich and interactive experiences in today's digital age.<sup>3</sup> Currently, there are 2.2 million maps hosted on the platform. Many international companies and organizations are current users of *StoryMaps*. As it is also integrated with *Google Analytics*, the user's statistics is easily available from this

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<sup>3</sup> <https://www.esri.com/en-us/arcgis/products/arcgis-storymaps/classic>

feature to understand the accessibility and use of the platform. It can also be used on computers, tablets, and phones. Its design and service are user-friendly, and its structure allows the creation and follow-up of spatial data easily. Moreover, its compatibility with any website enhances its capacity to reach a broader audience. On the other hand, *StoryMaps* has three pre-embedded design styles, limiting the potential for additional creative design elements. Furthermore, the restriction to upload only up to five photos per concept hinders the presentation of comprehensive information. Information, maps, photographic data, and other visuals used in the thesis are collected from publications and archives. The study has benefited extensively from the works of Ela Alanyalı Aral (2017), and Musa Kadiođlu and Kutalmıř Gorkay (2011). On-site investigation, observation and photographic documentation supplemented the gathered material. Some of the multimedia information is collected from The Museum of Anatolian Civilizations, VEKAM (Koç University Ankara Studies Research Center), and Atılım University Ankara Digital City Archive.

## CHAPTER 2

### CONTEXTUALIZING HERITAGE PROTECTION, URBAN ARCHAEOLOGY AND DIGITAL ARCHAEOLOGY

#### 2.1. Heritage Protection in the Urban Context

According to the World Heritage List, cultural heritage is often found in urban centers. The challenge that cultural heritage faces in an urban context comes from issues of continuity and compatibility as there is an unbroken change in the function and forms of urban settlements. The World Heritage City properties, in this regard, may become threatened by rapid and aggressive urbanization and lack of sustainable preservation and planning management (Guzman *et al.*, 2014: 1). The constant pressure for implementing new constructions, gentrification, and urban transformation often prioritizes economic growth and development over heritage protection, leading to unsustainable conservation practices and destruction of historical layers of the city. Uncontrolled urbanization often causes social and spatial fragmentation and a decrease in the quality of the urban environment. In particular, an excessively dense, stereotypical, and monotonous building fabric, loss of public spaces, inadequate infrastructure, poverty, and social segregation are increasing to reach the stage of risk for the preservation of heritage properties (Dinçer, 2013: 24). As stated by international conservation organizations, such as ICOMOS, and respective local organizations historical urban landscapes are likely to lose their structural or visual authenticity and integrity (Dinçer, 2013: 23). Thus, sustainable protection of cultural heritage as a non-renewable resource in urban contexts became a necessity (Guzman *et al.*, 2014: 1). Because historical centers comprising architecturally and historically significant structures and monuments are integral to a city's identity, sustainability and conservation should adhere to the same principle of safeguarding the existing and preserving the heritage for future generations. Any structural destruction means getting closer to losing a piece of history forever.

Besides, as the intertwining of time-space and values of the past are no longer present in the modern urban fabric, it is necessary to embrace an approach that considers urban planning, cultural heritage preservation, and integration of cultural heritage into urban life as a unified process.

Integrating cultural heritage into urban life should be considered in various aspects. Tankut (1991) asserts that the first integration stage is integrating archeological sites into urban planning via conserving and preventing damage (Tankut, 1991). The second stage of integration is the integration of heritage and citizens. Awareness has to be given to citizens, so that archaeological heritage will have an impact on citizens. Especially in countries like Turkey, where citizens do not show interest in archaeological heritage primarily due to a lack of information and awareness, enhancing public consciousness emerges as a crucial target for heritage protection projects. The society's concern in Turkey is more centralized on economic conditions, and thus, most urban archaeological resources are not perceived as cultural assets with economic potential. Therefore, citizens and archaeological sites stand as two distanced domains; it is often the case that people visit archaeological sites without having a real interest or see them as areas that complicate and limit urban projects that would generate economic revenues, as observed in the processes of construction projects in urban or rural areas and agricultural lands possessing cultural heritage. Such situations lead to public ignorance and open cultural heritage to illicit and illegal excavations and/or destruction (Tankut, 1991).

Historical places and their sustainability are essential to recall the lost relationship between place and humans in modern urban life and space identity (Anlı and Somuncu, 2013). Heritage, as a concept, does not just encapsulate structures from their origin; a heritage spot is a place that has evolved and been shaped by countless experiences and the people who lived there. A monument in the urban context stimulates the mind and establishes a connection between the past and future (Ioannides *et al.*, 2016). It may excite imagination and memories and change the mindset, while it can also stimulate intellectual development by exposing individuals to new ideas, perspectives, and knowledge. It can foster critical thinking and analysis by challenging individuals to think deeply about the meaning and significance of

cultural heritage in their own lives and in the broader context of society; studying the cultural heritage of other societies can broaden one's understanding of history, literature, art, and many other intellectual spheres. Thus, cultural heritage is not only an issue for scientists working in the field but an inheritance, the encounter of which provides cultural dialogue, knowledge, and imagination in everyday life.

Heritage conservation should be considered in urban planning and renewal projects by respecting the site's natural, social, and cultural aspects to protect the integral unity in stratified cities. On the other hand, working with stratified cities in urban contexts is challenging due to the layers of history that accumulated over time. Besides, every living activity accumulates new layers, further complicating navigating and preserving the intricate historical fabric. The issue is further exacerbated by new constructions taking place without proper conservation processes being implemented beforehand. The previous layers, in this respect, face inappropriate protection. In today's urban planning and heritage conservation projects, the stratum needs to be considered to develop a unified plan for protecting the whole historical and contemporary heritage that respects all the layers of the city and enables it to work within an integral context. Through digital explorative platforms promoted by local and city governments on the site, heritage places can turn into shared living spaces and hence, will no longer remain as invisible plots or disconnected from urban life. The development of a comprehensive heritage substructure not only integrates archaeological data in an organized manner but, with the inclusion of cultural, natural, and societal data, can reach a broader audience more effectively.

Alpan (2016) argues that in stratified cities, the integrity of the city has to be the main focus, which would bring an "integral unity" (Alpan, 2016). For this reason, she suggests working with an inter-integrity plan that works through the interaction and intersection of urban layers to identify interaction points clearly before taking action and developing conservation plans holistically by considering the integral unity of the historic center by taking into account the contemporary urbanization threats (Alpan, 2016: 670) This strategy can be achieved through collaborative efforts among stakeholders, including local authorities, urban planners, heritage

conservation experts, and the public. Thus, protecting cultural heritage in an urban context becomes an essential common responsibility and domain of archaeologists, urban planners, architects, historians, and other history- and culture-related professionals and citizens. Yet, on the other hand, there is insufficient professional collaboration, for example, between archaeologists and urban planners in Turkey, even though urban development is under significant pressure, posing risks to archaeological and urban archaeological heritage (Tuna, 1999: 217-228; *ICOMOS*, 2001; Belge, 2012: 88).

Traditional understanding and representation of an 'archaeological site' or 'archaeological monument' in Turkey often manifest in the form of fencing off the expropriated land and putting a brief, didactic, and descriptive information board containing basic details like the name, date, nature, and purpose of the monument. This standard site presentation falls short of effectively engaging or adequately informing the public about the archaeological context. It is imperative to ensure that heritage sites and associated information are readily accessible to the public and in ways beyond such simplistic on-site applications. Employing methods that encompass both on-site experiences and scientific knowledge translated into packages of accessible and comprehensible information for the reach of a broader audience by digital technologies, in this sense, is a more solid way of enhancing the connection and interaction between the public and urban heritage. This is indeed a timely approach for two reasons: the realm of public archaeology is increasingly harnessing the power of information technologies, and the fusion of practical and theoretical methodologies, coupled with an openness to multi-disciplinary approaches, amplifies the contributions of digital technologies to the field of archaeology; and archaeology aligning more closely with related disciplines and evolving into a more inclusive and communicative practice, with a core objective of fostering an increased appreciation for cultural heritage.

Digital technologies and the use of digital spatial information hold great potential for protecting archaeological heritage. Digital spatial information is increasingly used to guide heritage conservation and management projects all over Europe (McKeague *et al.*, 2019: 89). Moreover, it shows excellent possibility to involve the general public

both as a visitor and as a supporter of projects. As such, Geographic Information Systems (GIS) is a pioneering software for spatializing archaeological data and its analysis.

## **2.2. Digital Archaeology, GIS and Urban Heritage Conservation**

Documentation in archaeology, that is, recording in-situ finding remnants with attention to contextual and find-specific details, is a critical task in heritage conservation due to the irreproducibility of its working environments. Today, heritage documentation is done using digital methods that ease data storage and processing. Digital technologies have influenced the way archaeological work is pursued, from documentation, record-keeping, and working with maps and images to analysis and presentation. The increasing interest and experience in the application of digital technologies, as such, make archaeology a continuously progressing discipline in terms of fieldwork, scientific methods, and academic production.

Digital methods led to the development of digital archaeology as a separate field in archaeology. In recent years, cultural mapping has gained popularity as a methodology (Turner and Singer, 2015: 306). “UNESCO Recommendation on the Historic Urban Landscape Report” mentions space documentation and mapping of cultural and natural features as essential tools for recognizing cultural significance.

<sup>4</sup> Geographic Information Systems (GIS), a widely practiced digital mapping method, started to be a feasible tool using computers for information recording and processing in the 1980s (Graham, 2020). Geographic Information Systems (GIS) is a computer-based information system that organizes and analyzes spatial information for data processing, statistical analysis, mapping, and management.

GIS was developed in the 1960s in Canada (Canada Land Inventory) and the United States (Harvard Laboratory for Computer Graphics) simultaneously and was mainly used first in developing facility administration and land information systems to manage public utilities in urban centers (Box *et al.*, 1999; Ferreira-Lopes, 2018:

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<sup>4</sup><https://whc.unesco.org/en/hul/#:~:text=The%20HUL%20Recommendation%20is%20a%20key%20to%20to%20help%20cities,heritage%20conservation%20and%20management%20strategies.>

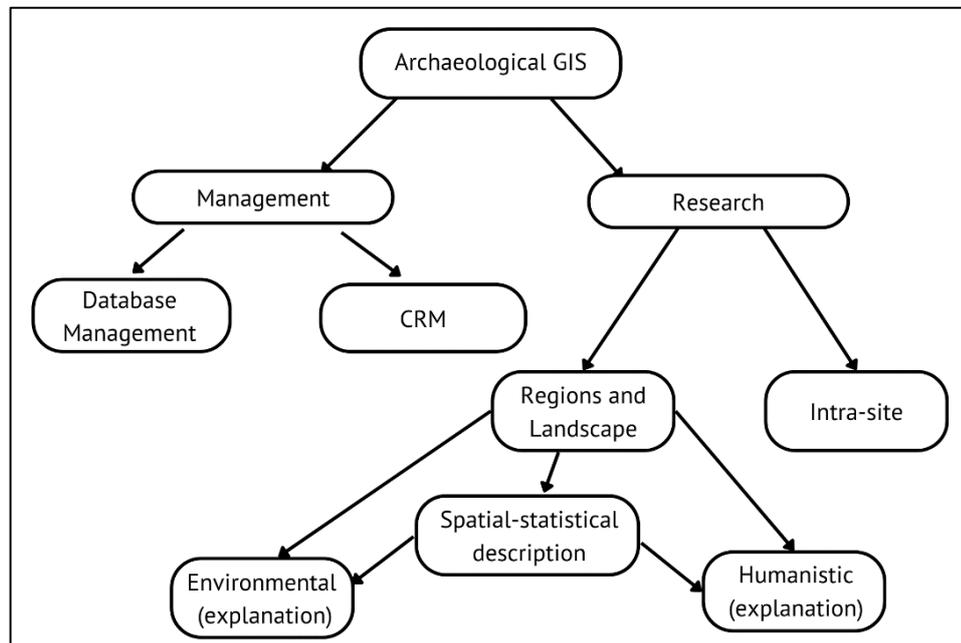
169). Since then, and with geography, it has been increasingly used to analyze, visualize, and manage mass data in other sciences and disciplines, such as archaeology, architecture, economics, social sciences, and history. It is a pioneering platform for creating digital maps and making complex map operations and digital inventories. The operation in GIS works as data entrance, data processing, management, data visualization and output, and interpretation and data analysis. The benefit of GIS is that it allows working in big datasets spatially faster and more efficiently. GIS is also considered a non-destructive and cost-effective method for various projects (Agapiou and Lysandrou, 2015: 230-239; Vladimirovna Bushmakina *et al.*, 2017: 265). Besides, the data used in GIS is retrievable, manipulative, and changeable to produce alternative solutions. Later developments in digital archaeology introduced three-dimensional constructions, graphical-based information, and gaming. With the establishment of the web platform and the spread of the Internet, the effectiveness of all these tools has doubled, which paved the way for further ways to collect online data, develop open-source software, and make remote collaborations and sharing (Graham, 2020). Costopoulos (2016) sees data collection, visualization, analysis, public outreach, and participation as the main resources of digital archaeology. Digital archaeology, in particular, remodels archaeological data collection by enabling it to work with geographical maps, photos, satellite images, remote sensing, and the creation and management of databases. Thus, it digitalizes archaeological studies, making field research less time-consuming and context-damaging (Costopoulos, 2016). Maps are essential mediators in conveying information in archaeology, as they can reflect the landscape's character the area's development, and show the location of historical events. Digital maps indeed increase the context and capacity of maps as repositories of information; they can create visually integrated maps by comparing various landscape variables in attractive map formats. Knoerl (1991) states that: "Maps can provide a basis for successfully integrating historic preservation information with other kinds of information to yield solutions that were previously difficult to achieve" (Knoerl, 1991: 107). Digital maps can likely guide decision-makers in making better and more holistic assessments and devising urban plans according to the current position, location, and situation of historic and non-historic assets. An integrated heritage conservation plan of this type facilitates heritage registration under protection laws

(González-Tennant, 2016: 26). Likewise, Knoerl (1991) suggests that the more GIS becomes routinely used in preservation, the more problems, such as survey planning, registration, evaluation, and protection, will be solved.

GIS became more intensively adapted to archaeology in the 1990s (Ferreira-Lopes, 2018: 170) (Figure 1). The manual “GIS and Cultural Resource Management” written by Paul Box and published in 1999 by UNESCO initiated an impulse to use GIS in cultural heritage studies. González-Tennant (2016) considers GIS the most effective tool for archaeological data management. According to Ferreira-Lopes *et al.* (2018), GIS is used to support cultural heritage studies mainly in four ways: to create a heritage inventory, to discover forms of spatial and physical characteristics to shape future actions in heritage management; to develop control and prediction for heritage conservation; to develop strategic plans for natural and cultural heritage management. González-Tennant (2016) interprets the use of GIS in historical archaeology in three types of tasks: making an inventory and doing geospatial database management, doing geospatial analysis forms, and mapmaking and data visualization (González-Tennant, 2016: 25).

In GIS, each attribute to data is supported with graphic values and can be integrated with another map. The values can be supported with images, texts, and information and can be compared, analyzed, and spatially exposed, thereby creating a digital heritage inventory (González-Tennant, 2016). The possible data gaps caused by the information gaps in the computation system can be easily identified with a digital inventory (Knoerl, 1991: 108). GIS offers analysis that can be displayed in high-resolution graphics or pictures in different documents and allows the end product to become available for various uses and users. It also helps monitor and evaluate the management policies and dissemination of information (Santos *et al.*, 2021: 5). Through GIS, historic places and heritage can be defined concerning their historical importance by sharing their values and patterning their characteristics, and can be incorporated into site management about spatial boundaries of the site. Thus, the resulting visibility of a place within its historical and geographical context allows the user understand better its importance and status in a real context. This kind of descriptive and extensive data is also beneficial for decision-makers to consider and

evaluate the presence of historic places in conservation projects and to understand their current status in a locational manner.



**Figure 1.** Application of GIS in archaeology (adapted from Wheatley and Gillings, 2002: 234).

The origins of establishing national archaeological databases began during the Second World War, by systematizing and standardizing the archaeological data (McKeague *et al.*, 2019). However, the use of spatial databases started only after GIS software was introduced, and thus the national, large-scale digital information systems started to emerge in the late 1980s (McKeague *et al.*, 2019). In recent years, GIS has been used extensively to support the national agendas of many countries for the collection, excavation analysis, verification, and processing of data to preserve and manage immovable and movable cultural heritage and to make archaeological information more accessible to the public. *Alexandra Archive* from the United States,<sup>5</sup> *Archaeology Data Service* from England,<sup>6</sup> *Archaeological Archive* from Scotland,<sup>7</sup> and *Dutch Data Archiving and Networked Services*<sup>8</sup> are some examples

<sup>5</sup> <https://alexandriarchive.org>

<sup>6</sup> <https://archaeologydataservice.ac.uk>

<sup>7</sup> <https://www.historicenvironment.scot>

<sup>8</sup> <https://dans.knaw.nl/en/data-stations/archaeology/>

of this kind of database systems supported by ministries and other state organizations.

A recent development of the GIS platform, which is used in this study is *ArcGIS StoryMaps*. Released in 1999, *ArcGIS StoryMaps* is an online digital storytelling platform designed to present digital datasets in a narrative format. This platform empowers the content by integrating texts, photographs, videos, 3D models, and maps generated through an online mapping interface, *ArcGIS Online*, into a cohesive web page. Users can access additional content by scrolling through distinct slides. Consequently, *StoryMaps* is a valuable tool to spread digital archaeological data, to provide a well-structured presentation with contextual information that users can explore according to their interests (Howland *et al.*, 2020: 353).

### **2.3. Digitalization Projects of Urban and Public Archaeology: Selected Case Studies**

Spatializing archaeological data offers various advantages in examining urban archaeological information. By establishing standardized and structured data, the elaborative web of documents is effectively managed, allowing for connections between historical, archaeological, topographic, and photographic data, thus enriching the overall research process. What makes an urban archaeological map valuable is its ability to show different layers of history while revealing hidden stories of the accumulated culture. This section presents examples of digital cartography, digital inventory, and GIS-based digital map projects. The emphasis is on digital mapping inventories rather than data inventories. While there are numerous global projects on making an archaeological digital inventory, the selection of the projects is based on their size and relevance to the thesis' focus on urban and public archaeology.

An early example of an urban archaeological spatial database in Europe is *The National Archaeological Map*, initiated in France in 1975 and supported by the Ministry of Culture.<sup>9</sup> The study recorded 500.000 archaeological features of the

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<sup>9</sup> <https://www.culture.gouv.fr/en/Thematic/Archeology/Archaeology-in-France/The-National-Archaeological-Map>

country in a spatial database through digital mapping. *Atlas des patrimoines* is the ultimate digital cartography platform of the project.<sup>10</sup> The developers explain the goals of the map as bringing knowledge for management and city planning and guiding archaeological prescription strategies. Moreover, The National Institute for Preventive Archaeological Research of France also offers an inventory of archaeological projects sites in France that can be filtered by period, theme, region, and excavation year.<sup>11</sup> The institute offers, furthermore, a digital map for all of the research and excavation carried in France and abroad by French teams (Figure 2).<sup>12</sup>



**Figure 2.** View of the digital map of archaeological projects, prepared by The National Institute for Preventive Archaeological Research of France (Accessed on 09/10/2023).

*ArcheoSitarProject: Il Sistema Informativo Territoriale Archaeologico di Roma (SITAR)* is another large-scale spatial inventory project established in 2007 (Figure 3).<sup>13</sup> This project is supported by the municipality, which defined the aim as making archaeological knowledge free and accessible for a larger public. In the scope of the project, a *WebGIS* platform for spatial data and a Digital Library for archives are created. Three types of usage are defined: basic, accredited, and professional, depending on the intended purposes. The *SITAR* project offers *WebGIS*, a GIS platform used in the World Wide Web system. Therefore, the database can be used

<sup>10</sup> <http://atlas.patrimoines.culture.fr/atlas/trunk/>

<sup>11</sup> <https://www.inrap.fr/chroniques-de-site/recherche>

<sup>12</sup> <https://www.inrap.fr/archeozoom>

<sup>13</sup> <https://www.archeositarproject.it/en/>

interactively. In *WebGIS*, the user can customize map layers, explore contents, create personal libraries, and request discussions and changes in the content. More than 10.000 records, 2000 scientific papers, and 12.000 drawings are entered into the database. Today, it has reached 1.4 million views. However, there is a difficulty in its use, particularly because of the language barrier. Although the website is offered in both English and Italian, the *WebGIS* platform is only accessible in Italian, which limits its use for those who do not know the language.



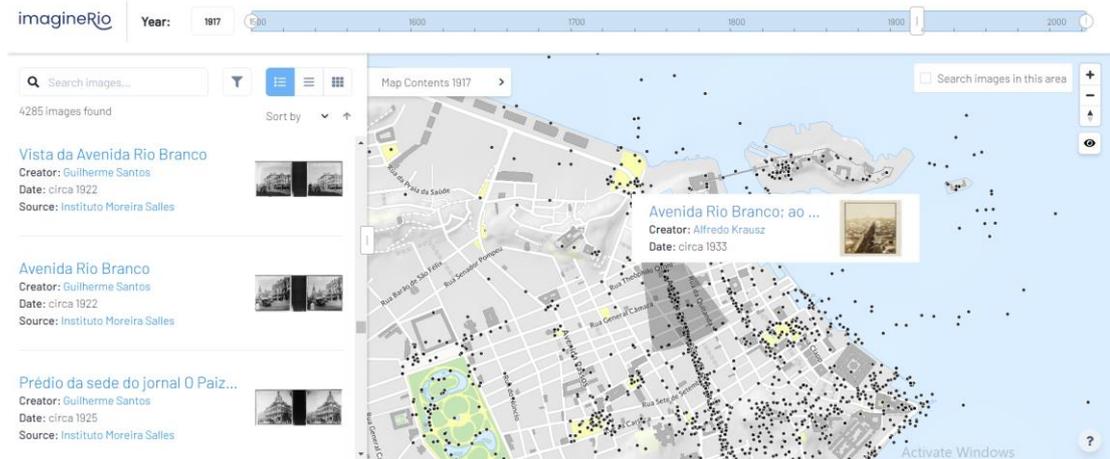
**Figure 3.** Web page from the *SITAR* project (Accessed on 02/07/2023).

Another project that utilizes the benefits of GIS effectively is *ImagineRio*, A Digital Atlas of Rio over Space and Time (Figure 4).<sup>14</sup> Developed as a university project and supported by some institutes - *ImagineRio* offers an interactive digital atlas that shows the social and urban evolution of Rio de Janeiro. By displaying together texts, maps, images, and geographical information, the project team created a digital atlas that shows Rio de Janeiro and its transformation from the 1500s to the present. The digital inventory also shows all the documents used in the digital map.

The team explain the function of the inventory on their website as: “Historians can visualize specific sites of inquiry, architects, and urbanists may locate proposed design projects in situ, literary scholars are able to map out novels, and residents can

<sup>14</sup> <https://www.imagnerio.org/map>

reconstruct the changes in their neighborhoods.”<sup>15</sup> As a comprehensive work, it displays a multidisciplinary work undertaken by architects, urban planners, artists, cartographers, and specialists from other related disciplines. Unlike the previous two examples, this project shows the city's transformation in a clearly visible way. Moreover, it combines the cultural aspect of Rio de Janeiro by including music collections, photojournalism, and publications.



**Figure 4.** Web page from the *ImagineRio* project, showing Avenida Rio Branco. (Accessed on 02/07/2023).

The *Edom Lowlands Regional Archaeology Project (ELRAP)*, a collaboration between the University of California San Diego and the Department of Antiquities in Jordan has been working on Faynan since 1997. Among other digital techniques used within the project, The *ELRAP* team created *StoryMaps* with a focus on the Iron Age in Faynan to demonstrate the efficiency of *ArcGIS StoryMaps* for archaeological story-telling and public engagement (Figure 5).

As the *StoryMaps* platform allows continuous changes in the project, they define the project as a work in progress, aiming to improve the platform's outreach continuously. The *StoryMaps* used in the project consists of various sections that create a holistic story of the history of the copper in Faynan, named "The Kingdom of Copper Story Map"<sup>16</sup> (Howland *et al.*, 2020).

<sup>15</sup> <https://www.imagnerio.org/en/about>

<sup>16</sup> <https://storymaps.arcgis.com/stories/b441a28ea5844d7bafbd47d3471166c9>



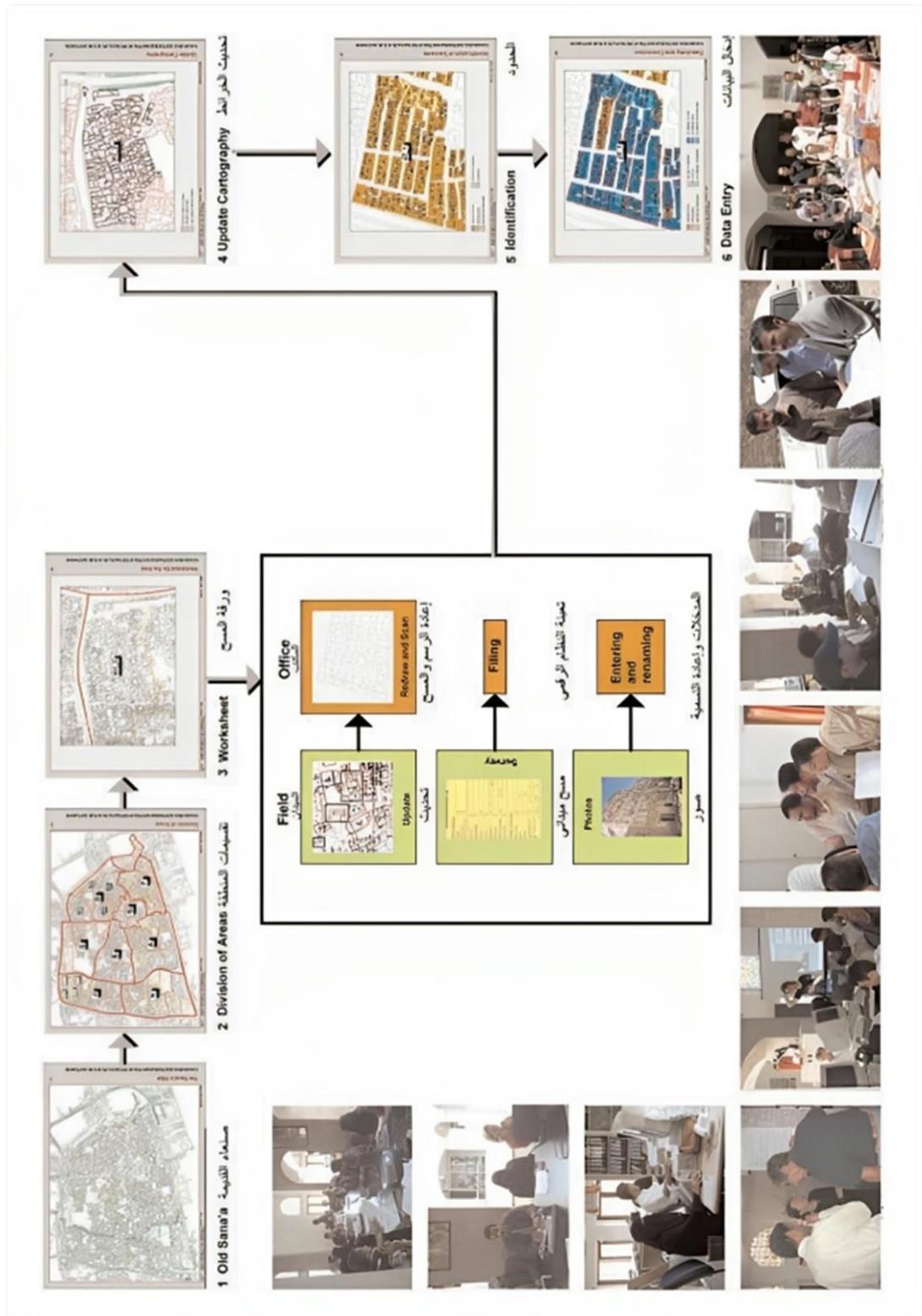
**Figure 5.** Web page from *The Kingdom of Copper StoryMap* project.

The conservation and rehabilitation plan for the historic fabric of the old Sana'a shows how to use GIS to conserve heritage effectively. Carried out by the UNESCO World Heritage Centre and the General Organization for the Preservation of the Historic Cities of Yemen (GOPHCY), the project was initiated in 2003.

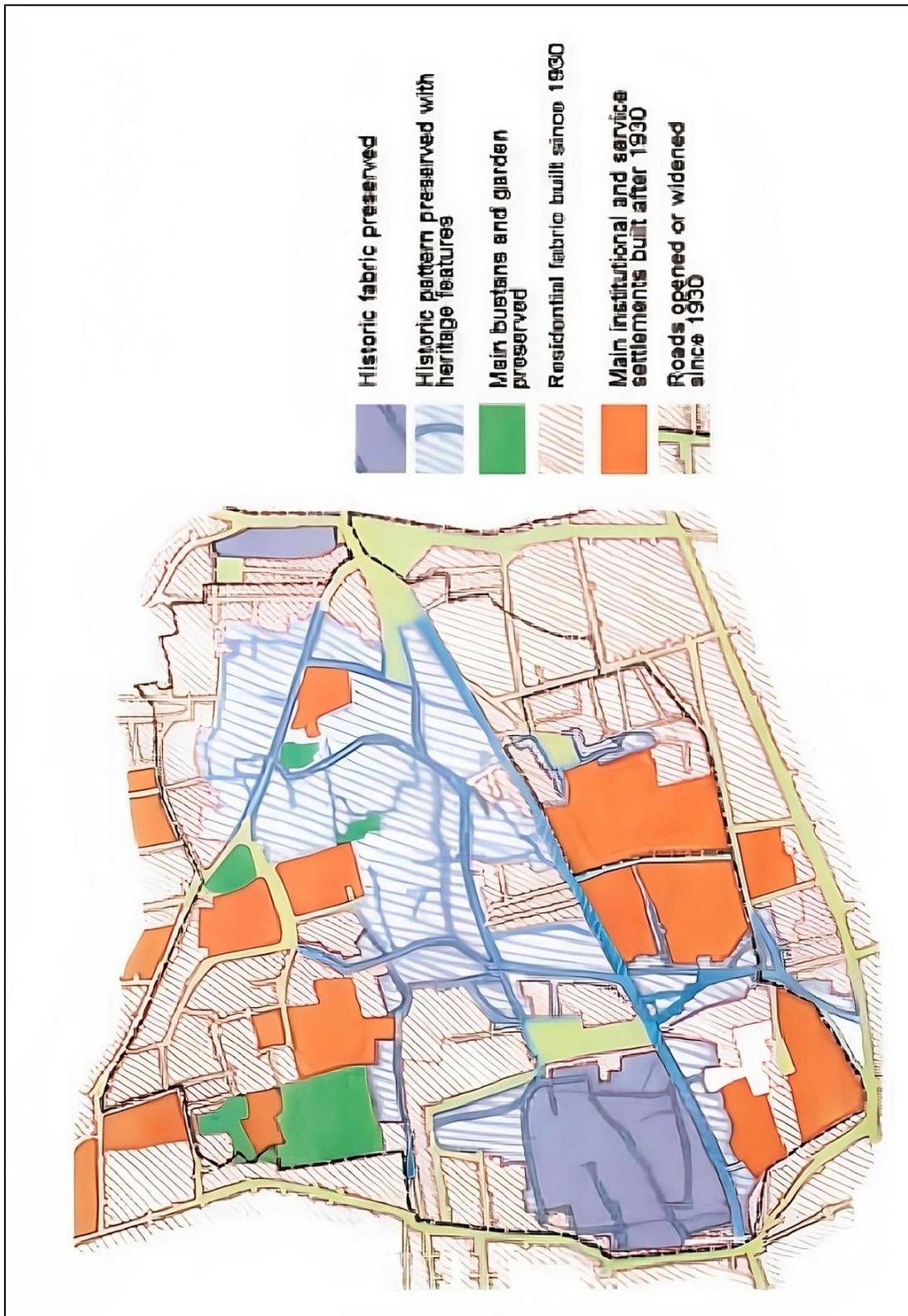
The “Conservation and Rehabilitation Plan” includes assessments of the old city of Sana'a, providing an extensive and detailed inventory of buildings, open spaces, transformations, architectural quality, and structure types; all of which are exposed in the GIS platform to create geospatial information and to process conservation decisions accordingly (Figure 6).

After the data processing in the GIS software to analyze, zoning, state of repair, habitation, functions of buildings, and other characteristics are considered in detail to propose a well-determined conservation and rehabilitation plan (Figure 7). Finally, decisions are made for each building regarding various factors already analyzed.

Therefore, building status is defined as restoration, renovation, rehabilitation, redevelopment, or demolition. The city layout and the character of the city can be understood spatially, based on the current state of the heritage assets, defined in terms of preserved or harmed. Thus, this project shows a great example of how GIS can be used for conservation of a historic city through data collection and spatial analysis.



**Figure 6.** Preservation of the Historic Cities of Yemen (GOPHCY) project, the structure of the study for GIS work process (Pini *et al.*, 2008: 34).



**Figure 7.** GIS analysis from the Sana'a city project, showing urban transformations since 1930s (Pini *et al.*, 2008: 12).

Particularly in the realm of urban archaeological research and heritage preservation, countless studies conducted on an international scale have efficiently employed GIS software. These studies predominantly focus on either establishing a digital archive for protection purposes<sup>17</sup> or revealing the multi-layered character of the city and safeguarding its potential archaeological zones.<sup>18</sup> Whether pursuing these objectives or other diverse purposes and applications, the efficiency of GIS in heritage-related studies is undeniable, encompassing both national contexts and broader regional investigations.

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<sup>17</sup> Ioannides *et al.*, 2016; Bushmakina *et al.*, 2017

<sup>18</sup> Nicoletti, 2018

## CHAPTER 3

### ISSUES OF CULTURAL HERITAGE PRESERVATION IN THE CONTEXT OF TURKEY

#### 3.1. Legal Framework of Heritage Preservation

Before making critical assessments on the state of heritage preservation and conservation in Turkey, it is helpful to introduce the relevant national legal framework on heritage conservation. This section provides an informative background on the legal framework for the protection of archaeological heritage and also highlights areas where deficiencies and improper conservation practices may exist. Consequently, it underscores the importance of establishing the cartographic heritage inventory advocated in this thesis as a means to identify these limitations.

Turkey's cultural heritage and related laws are pervasive in terms of boundaries, as there are archaeological sites in both rural and urban environments. There are two primary institutions responsible for conserving archaeological sites in Turkey: Ministry of Culture and Tourism and High Council of Conservation of Cultural Assets (*Kültür Varlıklarını Koruma Yüksek Kurulu*). The Ministry has the responsibility of identifying and designating an archaeological remains as cultural heritage. The Regional Council of Conservation of Cultural Assets (*Kültür Varlıklarını Koruma Bölge Kurulu*) carries out the categorization and registration process of the discovery under the “Principle Decisions” outlined by the High Council. After an archaeological discovery is processed, categorized, and registered it becomes necessary to prepare a plan, which is called *Development Plans for Conservation (Koruma Amaçlı İmar Planı)*.

The first conservation act in Turkey, “Act No 1710, Law for Ancient Monuments” (*Eski Eserler Kanunu*), is introduced in 1973 with the concept of site conservation.

This act was replaced by “Act No 2863”, explaining the procedures related to the discovery of archaeological remains, the classification of registration categories, and the potential interventions for archaeological heritage in the “Law of Conservation of Cultural and Natural Heritage (2863/1983)” (*Kültür ve Tabiat Varlıklarını Koruma Kanunu*, 1983)<sup>19</sup>. Later, “The Principle Decisions on the Conservation and Utilization of Archaeological Sites” (*Kültür ve Tabiat Varlıklarını Koruma Yüksek Kurulu 658 Sayılı ve 05.11.1999 Tarihli İlke Kararı*, 1999)<sup>20</sup> defined by the Conservation Council, and the “Regulations on the Preparation of Conservation Master Plans and Environmental Design Projects” (*Koruma Amaçlı İmar Planları ve Çevre Düzenleme Projelerinin Hazırlanması, Gösterimi, Uygulaması, Denetimi, Müelliflerine İlişkin Usul ve Esaslara Ait Yönetmelik*, 2005)<sup>21</sup> for archaeological sites are legalized. Cultural assets (*Kültür Varlıkları*) are defined in the Law of Conservation of Cultural and Natural Heritage (2863/1983), in the 3<sup>rd</sup> article as such:

Cultural assets" refer to all movable and immovable properties, whether located on the surface, underground, or underwater, that are associated with science, culture, religion, and fine arts belonging to prehistoric and historical periods. These assets hold significant scientific and cultural value and have been relevant to social life during the prehistoric or historical era.

These legislative frameworks established two fundamental designations concerning the legal status of archaeological sites: "Arkeolojik Sit" (Archaeological Conservation Site) and "Ören Yeri" (Site of Ruins). “Site” is explained in the 3<sup>rd</sup> article of Law of Conservation of Cultural and Natural Heritage (2863/1983) as such:

Sites are the products of various civilizations from prehistoric times to the present, reflecting the social, economic, architectural, and other characteristics of the eras in which they existed. These urban areas and their remnants, along with significant natural features and locations where important historical events occurred, constitute areas of cultural assets that are closely tied to social life and require preservation.

According to the Law of Conservation of Cultural and Natural Heritage, there are four main categories of sites identified as archaeological, urban, historical, and

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<sup>19</sup> <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=2863andMevzuatTur=1andMevzuatTertip=5>

<sup>20</sup> <https://teftis.ktb.gov.tr/TR-263742/658-nolu-ilke-karari-arkeolojik-sitler-koruma-ve-kullanma-kosullari.html>

<sup>21</sup> <https://teftis.ktb.gov.tr/TR-286532/koruma-amacli-imar-planlari-ve-cevre-duzenleme-projelerinin-hazirlanmasi-gosterimi-uygulamasi-denetimi-muelliflerine-iliskin-usul-ve-esaslara-ait-yonetmelik.html>

natural. In addition, there are further categories, like urban archaeological sites, rural sites, or complex sites. When Regional Conservation Council designates an area as a 'site,' the urban development plan regulations no longer apply within the boundaries of the conservation site. In such cases, accordingly, a “Conservation Development Plan” has to be prepared.

The “Archaeological Conservation Site” (*Arkeolojik Sit*) category covers settlements and areas that encompass the above-ground, underground, and underwater remnants of civilizations. This category is classified into three conservation degrees that dictate the range of possible interventions: 1<sup>st</sup> Degree Archaeological Sites, 2<sup>nd</sup> Degree Archaeological Sites, and 3<sup>rd</sup> Degree Archaeological Sites. The gradation of archaeological sites corresponds to the levels of possible intervention. For 1<sup>st</sup> Degree archaeological sites, the range of interventions is limited to scientific conservation measures, with strict restrictions on construction activities. However, some amenities can be implemented if the site is opened to the public (referred to as *ören yeri*). These interventions require permission from the Conservation Councils

Similarly, for 2<sup>nd</sup> Degree archaeological sites, the description aligns closely with that of 1<sup>st</sup> Degree sites, but with the mention that the conservation and utilization conditions will be determined and decided by the Conservation Councils. The Council's determination allows for some flexibility compared to 1<sup>st</sup> Degree sites. In the 3<sup>rd</sup> Degree archaeological sites, new arrangements and functions may be permitted within established conservation and utilization conditions. These sites have the potential for new building activities and can accommodate additional functions determined by the relevant authorities. The definition of archaeological site degrees, as such, depends on the practices that can or cannot be performed in the area instead of scientific qualities unique to the site (Savrum Kortanoğlu, 2013: 276). This understanding of a general classification can damage the archaeological remains as it may ignore the fact that every site is unique to itself and may exhibit precious information which can be achieved through excavations and research.

The 1<sup>st</sup> Degree Sites are those with dense evidence of cultural asset findings or supporting evidence of previous civilizations. Density, however, should not be taken as a major criterion as any archaeological finding, even in small quantity, can have a

significant role in lighting an aspect of cultural history. Therefore, the density criterion mentioned in this context can be relative in quantitative or qualitative understanding. Thus, within this context, an area that holds great qualitative significance may not meet the requirements for being designated as a 1<sup>st</sup> Degree Site because of not having dense evidence as well. A similar qualification is also applied for the 2<sup>nd</sup> Degree Site by adding the protection, the conditions which are determined by the Council. 3<sup>rd</sup> Degree Archaeological Sites are defined as areas with rare findings or areas where there is a possibility of cultural heritage or remains, determined according to scientific research or assumptions and environmental observations. They can also be areas that interact with 1<sup>st</sup> and 2<sup>nd</sup> Degree Archaeological Sites, implying that 3<sup>rd</sup> Degree Archaeological Sites may possess important artifacts and remains of history and culture. Yet, they can be subject to unsuitable construction as the Law allows potential building activities. The conservation regulations for this degree, thus, need to be revised, as its interpretation is open to different understandings.

In Turkey, in general, the lack of implementing scientific methods in all registration procedures results in oversight of potential archaeological sites, makes them vulnerable to political pressures that aim to decrease site grades and restrict site boundaries, thus resulting in opening many archaeological sites to construction and hence inevitable damage (Aydeniz, 2009: 2516).

The second category, “Site of Ruins” (*Ören Yeri*), encompasses sites where natural and cultural elements converge. These sites are distinguishable by their topographical features and possess significant historical and archaeological assets. In the case of this category, landscape design projects are permitted within the framework of and align with the directives outlined in the existing “Conservation Master Plan” (*Koruma Amaçlı İmar Planı*) for the specific area. These projects can be undertaken by the Ministry of Culture and Tourism or assigned to appropriate institutes or private sector companies. Specific regulations, such as the “Regulations on the Preparation of Conservation Master Plans and Environmental Design Projects” (*26/07/2005 Tarihli Koruma Amaçlı İmar Planları ve Çevre Düzenleme Projelerinin Hazırlanması, Gösterimi, Uygulanması, Denetimi, Müelliflerine İlişkin Usul ve*

*Esaslara Ait Yönetmelik*)<sup>22</sup> and the “General Technical Specifications for Environmental Design Projects” (*Çevre Düzenleme Projesi Genel Teknik Şartnamesi*),<sup>23</sup> outline the definition and guidelines for these projects.

Since 2000, new laws are set and applied to overcome some aspects of the existing regulations (Özçakır *et al.*, 2017: 244). For example, the “Renewal Law”, the “Law No. 5366 “Renovating, Conserving and Actively Using Dilapidated Historical and Cultural Immovable Assets” (*Yıpranan Tarihi ve Kültürel Taşınmaz Varlıkların Yenilenerek Korunması ve Yaşatılarak Kullanılması Hakkında Kanun*)<sup>24</sup> is introduced in 2005. Özçakır *et al.* (2017) argue that this law, implemented as one of the most crucial legal instruments that eased the local governments to intervene on heritage sites according to their political and economic interests, accelerated the physical transformation of conserved sites and expropriation.

Cultural heritage protection in Turkey is also monitored by national and international commissions and related conventions, like the *Venice Charter*<sup>25</sup> (1964), *Convention Concerning the Protection of the World Cultural and Natural Heritage* (1972),<sup>26</sup> *ICOMOS*<sup>27</sup> (*International Council on Monuments and Sites*), *ICOM*<sup>28</sup> (*International Council of Museums*), and *ECC* (*European Culture Convention*, 1954).<sup>29</sup>

Geyre, in Denizli, is an illustrative example of how the life of a local site and community had changed after the ancient city of Aphrodisias began to be excavated and exhibited. The ancient city, one of the most important archaeological sites in Turkey, was found buried under the Geyre village; prior to becoming a site of ruin (*ören yeri*), the remains from the ancient city were used around the village (Figure

<sup>22</sup> <https://www.resmigazete.gov.tr/eskiler/2017/01/20170105-5.htm>

<sup>23</sup> <https://teftis.ktb.gov.tr/Eklenti/62852,cevre-duzenleme-projesi-genel-teknik-sartnamesipdf.pdf?0>

<sup>24</sup> <https://teftis.ktb.gov.tr/TR-263601/5366-sayili-yipranan-tarihi-ve-kulturel-tasinmaz-varliklarin-yenilenerek-korunmasi-ve-yasatilarak-kullanilmasi-hakkinda-kanun.html>

<sup>25</sup> <https://www.icomos.org/en/participer/179-articles-en-francais/ressources/charters-and-standards/157-thevenice-charter>

<sup>26</sup> <https://whc.unesco.org/en/conventiontext/>

<sup>27</sup> <https://www.icomos.org/en>

<sup>28</sup> <https://icom.museum/en/>

<sup>29</sup> <https://www.coe.int/en/web/culture-and-heritage/european-cultural-convention>

8). The villagers were using archeological remnants in the village houses and related structures. In 1979, the village was moved outside the boundaries of the main area of the archaeological site, which allowed systematic research, survival, and exhibition of Aphrodisias archaeological site (Doruk, 1989).



**Figure 8.** Villagers in Geyre (Ara Güler, 1958, retrieved from <https://erimtanmuseum.org/en/aphrodisias>).

An example of cultural heritage destruction due to its location on private property is the Selimpaşa Mound in Silivri, which dates to Chalcolithic Age (Aygındün *et al.*, 2014). Although the mound area is a protected site the owner had made a helipad on it (Ahunbay, 2010: 107; Aygındün *et al.*, 2014) (Figure 9).<sup>30</sup>



**Figure 9.** Selimpaşa Mound (TAY, *Archaeological Settlements of Turkey*, (n.d) (Retrieved from [http://tayproject.org/TAYages.fm\\$Retrieve?CagNo=2596&html=ages\\_detail\\_t.html&layout=web](http://tayproject.org/TAYages.fm$Retrieve?CagNo=2596&html=ages_detail_t.html&layout=web))

<sup>30</sup> Also see in TAY (*Türkiye Arkeolojik Yerleşmeleri*), *The Archaeological Settlements of Turkey Project*, <http://tayproject.org>

Thus, while the law protects cultural heritage, changes in the implementation of the law and lack of awareness of cultural heritage result in the destruction of a large number of cultural assets, regardless of their specified categories.

### **3.2. Legal Framework of Urban Archaeology in Turkey**

In the context of Turkey, although archaeological excavations and research have been conducted in urban contexts since the Early Republican Period, the term "urban archaeology" gained legal ground only in 1993, with the publication of "Decision No. 338 by the High Council for the Protection of Cultural and Natural Assets". In this decision, the areas where immovable cultural assets requiring protection, as defined within the scope of "Article 6 of the Law No. 2863 on Protection of Cultural and Natural Assets" (*Kültür ve Tabiat Varlıklarını Koruma Kanunu*), and the "urban archaeological structures requiring preservation" specified in the same law article, are collectively designated as urban archaeological sites. With this decision, 3<sup>rd</sup> degree archaeological sites are redefined, altering their protection and usage conditions.

However, this foundational decision could not effectively integrate historical continuity and the preservation of diverse urban layers across different eras with urban life, ultimately resulting in its annulment. Subsequently, the execution of the decision that eliminated the definition of 'urban archaeological site' is suspended due to the argument that this decision could not achieve protection. The principle decision reinstates it numbered 594, dated 14th July 1998, titled "Archaeological Sites, Protection, and Usage Conditions" (*Arkeolojik Sitler, Koruma ve Kullanma Koşulları*). However, this principle decision has also been annulled due to challenges arising in its application and conflicts with regulations (Aydeniz, 2009: 2517).

In 1999, the principles regarding urban archaeological sites were updated along with archaeological sites (Decision No. 658). In 2005, a special decision (Decision No. 702 – "Conditions for the Protection and Utilization of Urban Archaeological Sites")<sup>31</sup> specific to urban archaeological sites was published by the High Council for

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<sup>31</sup> <https://kvmgm.ktb.gov.tr/TR-44325/ilke-karari--karar-no-702--karar-tarihi-15042005.html>

the Protection of Cultural and Natural Assets (Belge, 2012: 87). The 702<sup>nd</sup> principle defined the general principles regarding the subsoil and considering the historical environment in its integrity. Particular emphasis is placed on scientific excavation, restoration, and exhibition of archaeological values, planning based on a comprehensive archaeological inventory, and designing projects that ensure the preservation of cultural layers while providing necessary public services in line with current conditions (Belge, 2012: 88). However, in the time passed since, urban archaeology is not yet acknowledged as a separate field of study requiring detailed research and study in laws and practice.

In the regulation number 702 of the revised version of “Higher Council Principle Decision” in 2005, Urban Archaeological Sites are defined as:<sup>32</sup>

Urban archaeological sites are areas that contain and exhibit urban structures that require special planning for their preservation due to their significant and cohesive characteristics. These areas require specific planning to ensure their protection and integrity.

Although description is given and protection is highlighted in the legal framework, the uncertainty period until having an established law, as well as the period of discussions related to site degrees had already caused improper protection of urban archaeological sites in Turkey. Especially in the historic city centers that face intense pressure from urban development, the integrity of the archaeological sites is rarely compromised. Instead of designating them as urban archaeological sites, such areas are frequently declared 3<sup>rd</sup> Degree Archaeological Sites; thus, this allowed construction permits in such areas. As a result, urban archaeological values are primarily spotted by drilling instead of excavating, which is conducted by archaeology museum experts during the construction permit processes (Belge, 2012: 88). Constructions that start as such and are made with little control and improper planning cause the damage or loss of the found heritage. Furthermore, many urban archaeological excavations are conducted as rescue operations in response to upcoming construction projects. Consequently, the pressure to complete the rescue

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<sup>32</sup><https://teftis.ktb.gov.tr/yazdir?83B035D31E9DFE34F410727E62447ECB#:~:text=3386%20ve%205226%20say%C4%B1%C4%B1%20Kanunlarla,alanlar%20kentsel%20arkeolojik%20sit%20alanlar%C4%B1d%C4%B1r>

excavations promptly often leads to insufficient and limited site exploration and, mostly, does not allow in-situ protection.

The interpretative nature of the regulations also endangers the importance of heritage areas and complicates the protection process. For example, Belge (2012) shows that an area found to have immovable cultural heritage after drilling in Antakya, was designated as 1<sup>st</sup> Degree Archaeological Site in 2008. However, although some finds have been protected with a fence, the rest of the area has been left open without information and protection, which illustrates that degree designation only is not an adequate criterion for protection (Belge, 2012) (Figure 10).



**Figure 10.** The state of the area which is designated as 1<sup>st</sup> Archaeological Degree after the drilling in Hatay, picture was taken in 2011. (Belge, 2012: 93).

Moreover, although the related law states the need for planning based on scientific excavations and studies and mentions that the new functions and related projects should be in harmony with the site, project-based interventions cannot be carried out efficiently in Turkey as necessary surveys are often not completed or even done. In the framework of the general protection rules and adaptation procedures, the permitted specific interventions are also not defined extensively, which may cause gaps in the intervention processes. Many such projects inevitably face extended processes (Alpan, 2005: 68). Delays in identification and registration become a major problem in urban archaeological areas because of continuous construction threats.

Moreover, not having a regulated system for updates of inventories and conservation causes a lack of information in managing the cultural assets as well.

Classification of archaeological degrees is also one of the main challenging issues in maintaining preservation in the context of urban archaeological sites. For example, delineating boundaries for urban archaeological sites can be problematic because of insufficient information about the invisible remains. Consequently, areas designated as 3<sup>rd</sup> Archaeological Degree may be subject to new construction proposals although they contain valuable archaeological remains. Regarding private properties, conducting research and excavation without the owner's permission, and/or the acquisition process can be challenging. In the case of rural areas, there are other issues to be considered. In these localities, archaeological sites are often part of the agricultural and livestock activities and thus, prohibiting or removing local communities from their livelihood sources can negatively impact their perception and cooperation regarding the safeguarding of archeological areas and their excavation.

In this respect, the government must conduct thorough and timely research and acquisition processes while maintaining effective communication with local communities. The same problems also occur in the urban context, even becoming more challenging due to crowded and overlapping buildings, and routines of daily life. The conservation projects realized in urban centers are, thus, mostly done without caring about the historicity of the heritage and represent poor renovations that prioritize economic relations or disintegrate the site without acquiring a comprehensive assessment of its social, cultural, and natural effects.

On the other hand, many leading projects might get canceled or no longer continue due to changing local or national administrations or are not approved by the related authorities (Alpan, 2005: 69). The restricted use of geographic information systems, lack of comprehensive database systems and inefficiency of urban archaeological inventories in many cases lead to inadequate information exchange between institutions, and weak professional relationships between urban planners and archaeologists. This creates numerous challenges, including difficulties in protecting

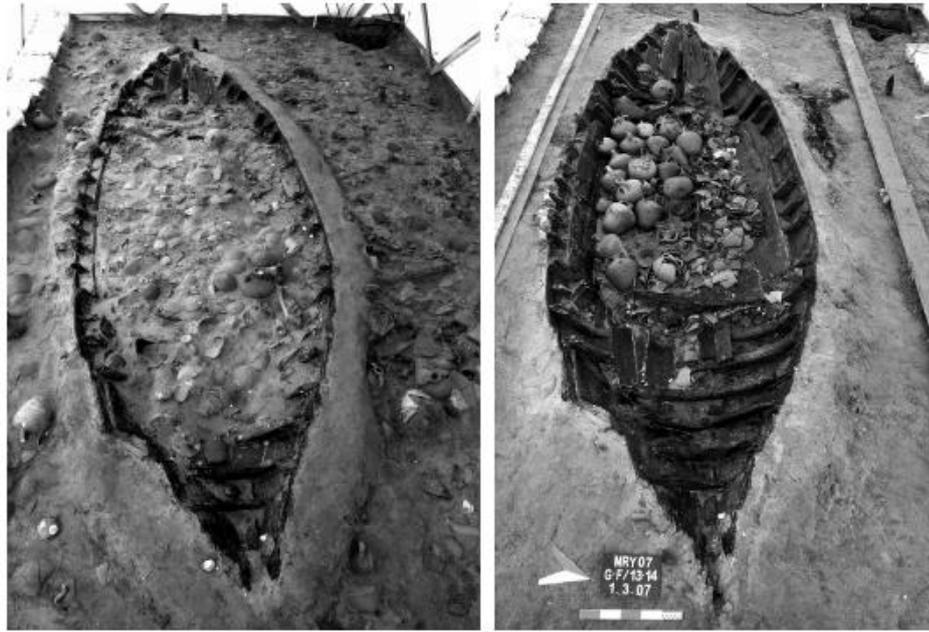
urban archaeological values and an inability to fully integrate these values into multi-layered urban environments. As a result, there is a risk that the invaluable historical sites in Turkey may not be adequately preserved and that the cultural richness they offer may not be fully realized by those living in or visiting these cities (Belge, 2012: 94).

In many cases, one of the main reasons for not being able to make in-situ protection possible is the lack of a detailed inventory of urban archaeological assets (Aydeniz, 2009). This deficiency causes site decisions to be determined randomly. Therefore, the real archaeological accumulation cannot be evaluated before the planning and project design works carried out by the public or private sector. For this reason, archaeological assets are encountered during the implementation phases of various investments, and investments often continue without making a change in the projects. As a result, archaeological assets are destroyed, and their integrity is disrupted; thus, heritage planning policies fail.

A rare example of the systematic recording of an urban archaeological context in Turkey, which is often not the case (Erincik, 2021: 25), is the Istanbul Yenikapı Marmaray Excavations, which represents the most extensive and systematic urban archaeological rescue excavation done so far in Turkey. The rescue excavations done during the construction of *Metro-Marmaray* project started in 2004. The excavations yielded an extremely rich archaeological context ranging from the Ottoman period to the Neolithic Age (Kızıltan, 2014). The highlight of the excavations was the discovery of the Byzantine period Theodosius Port.<sup>33</sup> The rich archaeological finds ranged from pottery and shipwrecks to skeletons and church remains (Kızıltan, 2014) (Figure 11). The area is assigned to be protected and designed as an archaeology park. An architectural competition was held in 2020 (*Theodosius Harbor Archaeological Site, Architectural Project Competition*), to obtain the concept project of the archaeopark. At present, the archaeopark project is under construction. Yenikapı Marmaray Excavations are a good example of how urban archaeology can provide a rich context and that there is rich potential for sites if they can be identified and appropriately excavated, albeit fast, prior to contemporary construction activities.

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<sup>33</sup> <http://yenikapibatiklari.com>



**Figure 11.** Shipwreck finds from Istanbul, Yenikapı Marmaray Excavations (Kızıltan, 2014, Fig. 4)

In the context of Turkey, since the protection of cultural heritage has not yet gained the status of being a priority area of action in the state institutions and local administrative authorities, there is a lack of responsive attitudes and sustainable financial support to preserve the multi-layered heritage, and hence to promote such areas for public awareness. Despite many efforts, the encounter of people living in cities with cultural heritage and archaeological remains is limited.

It is evident that there is a need for stronger regulations, and oversight, participatory and multi-disciplinary collaboration in the conservation of urban archaeological heritage in Turkey. The current situation implies the necessity of developing comprehensive projects and strategies that safeguard cultural assets. A fundamental prerequisite for effective planning starts from a comprehensive inventory of urban archaeological heritage encompassing all diverse historical layers. Within such a holistic approach, conservation projects can indeed illuminate the rich urban history by integrating cultural assets into collective heritage. Many discussions on the strategies and processes of preserving historical urban fabrics have often turned into long legal processes, diminishing the possibility of societal consensus on preservation; cultural heritage preservation has become limited to the visions of the municipality authorities in Turkey (Şahin *et al.*, 2011).

Bennett argues that Turkey generally overlooks urban archaeology, leaving information about classical settlements in a state of uncertainty (Bennett, 2006: 189-190). In the same vein, rescue excavations often work on tight schedules and limited budgets, hampering the quality of outcomes for urban archaeological sites. Thus, Turkey, striving to safeguard its urban archaeological heritage, faces major challenges. These challenges also arise because various projects and actions related to heritage are heavily impacted by the current political situation, frequently resulting in discussions and disputes.

Although most archaeological remains are situated within designated zones for protection, the current regulations often require revision to ensure sustained preservation. Many structures still face the threat of destruction even within these safeguarded areas. Many examples illustrate the persistent vulnerability of archaeological heritage due to urban transformation projects. This issue is particularly increased in urban regions where the demand for residential, commercial, and office spaces continues to rise. Consequently, the urgency to safeguard heritage is clear, and achieving this goal demands a comprehensive documentation strategy that captures the multi-layered nature of the city's history. Thus, given the evolving legal landscape, preservation efforts, and the ever-changing status of heritage, it is imperative to account for and document this data to ensure it remains traceable.

### **3.3. Urban Archaeological Digitalization Projects in Turkey**

In Turkey, using GIS for conserving cultural heritage is more recent and mainly concentrated on heritage recording. Archives of excavations and the museum's digitized collections represent some digital heritage inventories. Although its use is highly favorable for creating a spatial archaeological database at a national scale, special projects for urban archaeological areas and protection of the multi-layeredness of the cities still need to be systematically developed. They are not much discussed in the context of the national agenda at present.

Projects that aim to digitalize cultural heritage are initiated mainly by institutions, universities, or private organizations in Turkey and offer databases relevant to the

scope of a specific project.<sup>34</sup> Currently, the data is spread among various inventories in the form of separate entities. To ensure a holistic inventory of all heritage sites in Turkey, a digital inventory system needs to be prepared and regulated by governmental institutions. For example, the Museum of Anatolian Civilizations had made all the excavation reports in its archive accessible through its website before the Ministry of Culture and Tourism centralized national museums' websites to establish a generic website for all museums. Consequently, this consolidation has made the museum's digital content inventory unavailable on its dedicated website. For urban archaeology, however, it is essential to consider reports and all the findings in a proper inventory to answer better the complexity of layers and their features.

A good example of a systematical and comprehensive digital inventory of cultural heritage in Turkey is TAY, *The Archaeological Settlements of Turkey (Türkiye Arkeolojik Yerleşmeleri)* (Figure 12)<sup>35</sup> Although it is a personal initiative, it has been in use for 30 years and is regularly updated by the developer team.

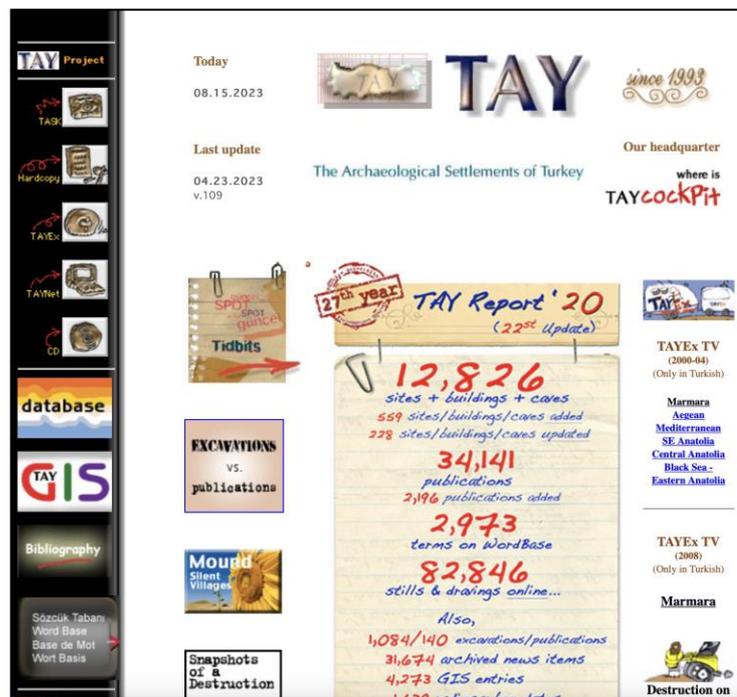


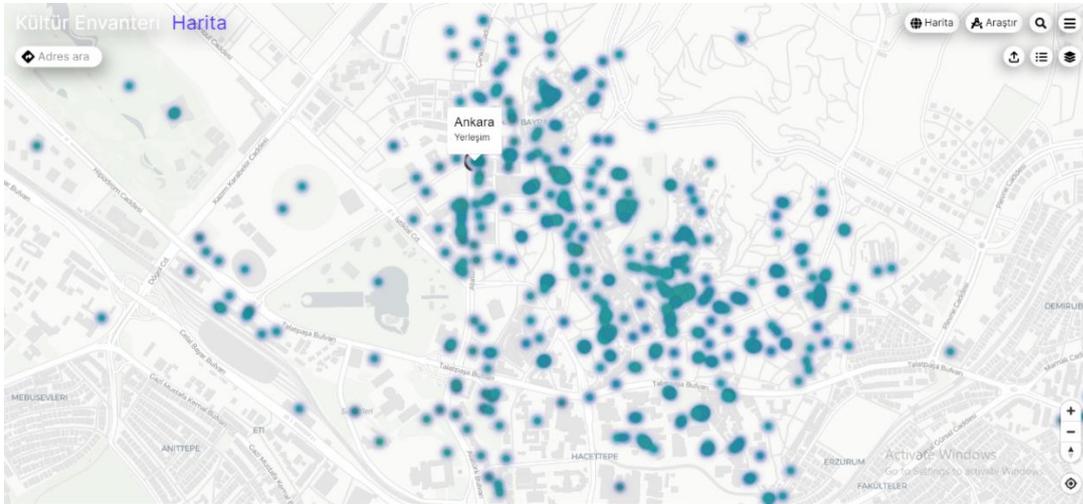
Figure 12. Main page of TAY website (Accessed on 15/08/2023)

<sup>34</sup> For an overview of archaeological digital archiving in Turkey see Atalan Çayirezmez *et al.*, 2021.

<sup>35</sup> <http://tayproject.org/enghome.html>

The inventory includes 12.826 variables so far, for which a Keyword search is available on the website. The inventory also allows reporting destructions on the site, serving as an excellent information system about cultural heritage. Furthermore, it is open to making personal upgrade suggestions. On the other hand, although it provides a geographic information system, access was not successful to the spatial inventory, thus, further information cannot be provided.

*Culture Inventory Atlas (Kültür Envanteri)* is another personal initiative that establishes an inventory for Turkey and Balkans (Figure 13).<sup>36</sup> It is a comprehensive project that combines a diverse range of cultural heritage spanning various periods, accompanied by detailed information. The project has the potential for expansion by incorporating additional archaeological heritage, such as invisible heritage, to explain the multi-layered nature of the city further. In the database, more than 30.000 cultural assets have been added and classified, and more than 35.000 visual documents have been published. It is available to search and filter by group, type, culture, century or city and view them on the map. It is a crowd-funding and participatory project which is open for editing and suggestions.



**Figure 13.** Registered cultural heritage in central Ankara, *Culture Inventory Atlas* (Accessed on 10/11/2023)

The *Digital Cultural Heritage Network* is another database established in 2021 by a volunteer community who aims to create a resource infrastructure for those who

<sup>36</sup> <https://kulturenvanteri.com/tr/>

want to research digital cultural heritage.<sup>37</sup> As mentioned in the website, they aim to create content in Turkish to identify standard and legislation and have a guideline for digital cultural heritage. The *Network* is developing projects that are very impactful on heritage studies and digital heritage conservation. One of the completed dataset produced by using GIS is about Izmir (Figure 14).<sup>38</sup> The historical Izmir maps are presented interactively via a web GIS infrastructure. In the infrastructure, three historical maps from 1836, 1876, and 1905 can be embedded onto existing maps. The team also plans to bring together studies and publications in the field of digital cultural heritage through Wikipedia. Accordingly, The *GLAM-WIKI Project* aims to make Wikipedia writers and project coordinators contribute to create content in the digital cultural heritage field. The created content will be monitored by the working groups of the *Digital Cultural Heritage Network* to ensure that it is up-to-date and accurate.



**Figure 14.** Izmir historical maps, web-GIS application, Digital Cultural Heritage Network (Accessed on 10/11/2023)

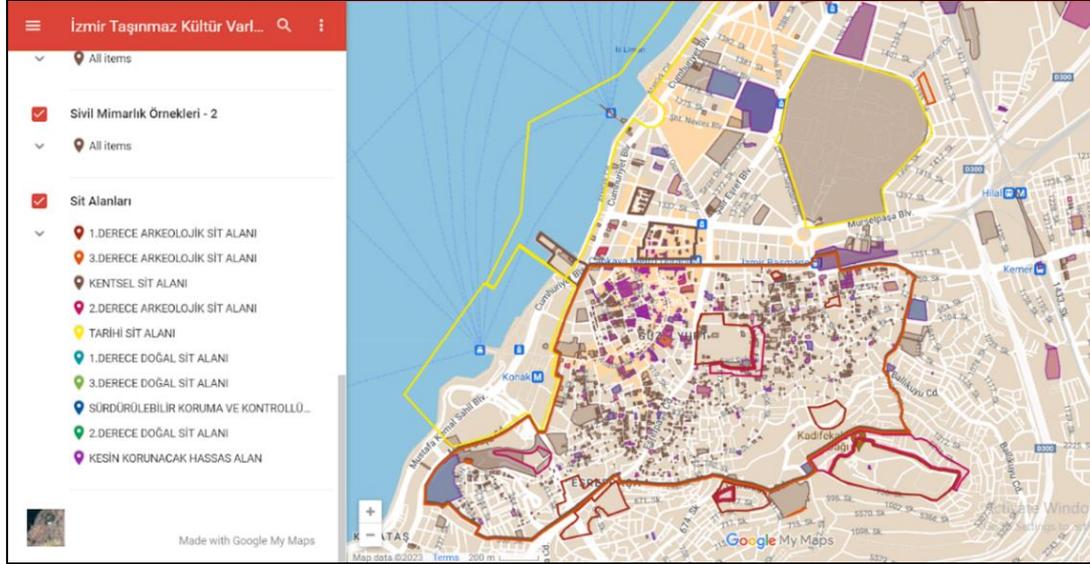
A digital mapping project is undertaken by the *Cultural Heritage Platform of Izmir*, which produced the *Izmir Immovable Heritage Map* (Figure 15).<sup>39</sup> The map mainly displays the location of cultural heritage to understand the historical character of İzmir. It shows the archaeological site categories, the decision numbers, the

<sup>37</sup> <https://dijitalkulturelmiras.com/>

<sup>38</sup> <https://www.kulturelmiras.org/izmir-tasinmaz-kultur-varliklari-haritasi/>

<sup>39</sup> <https://www.kulturelmiras.org/izmir-tasinmaz-kultur-varliklari-haritasi/>

registration date together with use details and architectural information. The map is, indeed, a detailed study that has the potential to turn into a complete inventory for further studies on the urban memory of İzmir.



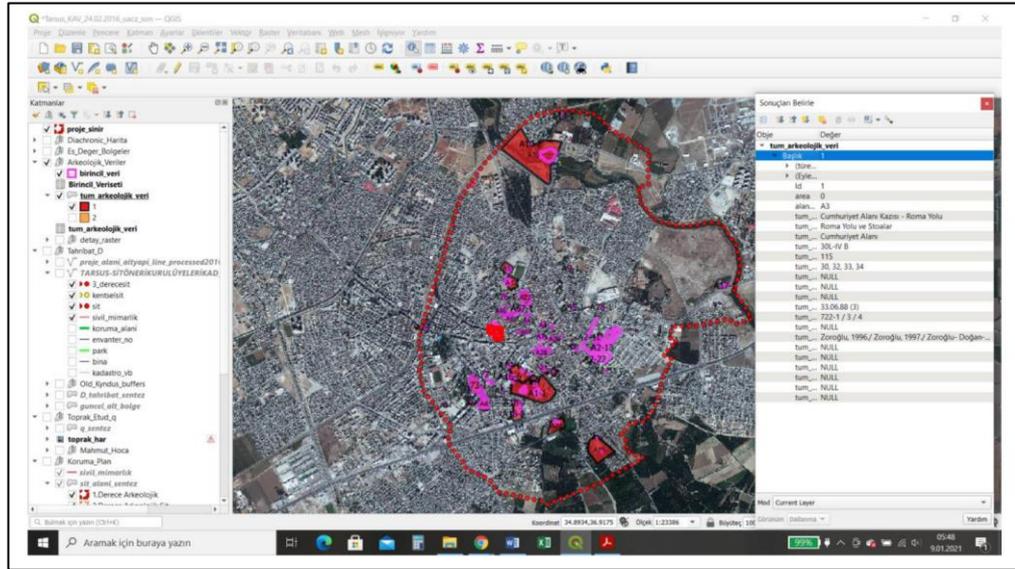
**Figure 15.** Web page from the *Izmir Immovable Cultural Heritage Map, Cultural Heritage Platform of İzmir* (Accessed on 2/7/2023)

Both of the *Digital Cultural Heritage Network* and *Cultural Heritage Platform of İzmir* examples focus more on creating digital spatial inventories. The following examples, on the other hand, represent cases in which GIS is effectively used to expose the multi-layeredness of urban settlements and their integration into the current context. Although they differ from the given examples in their scope, they illustrate the benefits of employing GIS in urban archaeological studies.

The first example is the *Tarsus Historic City Center* project, the outcomes of which are shared in 2016.<sup>40</sup> The project conducted by Burak Belge, Ümit Aydınöglü, and Sara Belge from the Department of City and Regional Planning at Mersin University focused on creating an Urban Archaeological Database (UAD) for the Tarsus historic center, which represents a pioneering case of using GIS-based databases for urban archaeological sites in Turkey (Belge *et al.*, 2021: 263) (Figure 16). The collected primary and secondary archaeological data are linked to spatial data through GIS to

<sup>40</sup> Belge *et al.*, 2021

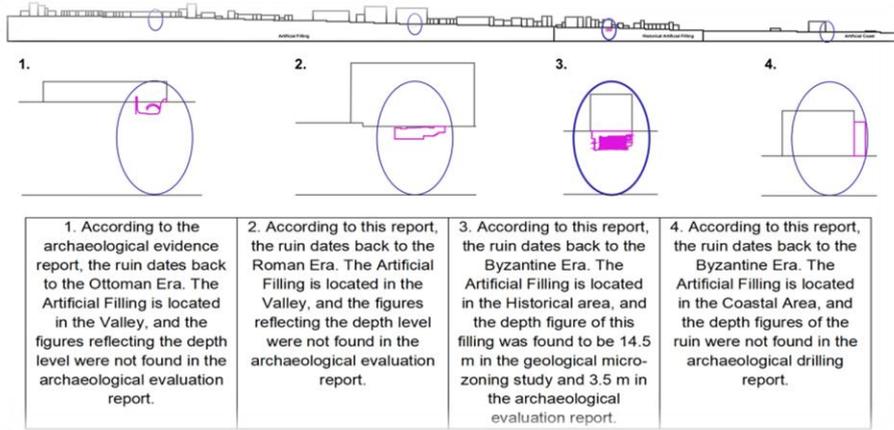
expose the urban archaeological character zones and to develop conservation and planning strategies accordingly. Moreover, it proposes the possibility of including stratigraphic information, hence adding surface analysis, that enhances the accuracy of the estimated archaeological character zones even more.



**Figure 16.** Web page from the *Tarsus Historic City Center Project* (Belge et al., 2021).

A recent study from 2020 by Emre Bedel from *Eurasia Institute of Earth Sciences* at Istanbul Technical University and Erdem Erbaş from the Department of Urban and Regional Planning at Mimar Sinan Fine Arts University explores a new planning approach by integrating archaeological and geological data to urban planning processes in multi-layered cities. The focus area is Tahtakale and the Historical Peninsula, and the transfer and spatialization of the associated archaeological and geological data is done by GIS. In this context, 414 pre-Roman and Ottoman archaeological remains are spatialized.

Unlike a spatial inventory, this study aims to expose the multi-layeredness of the area by displaying the geographical character of the zone and pointing out the zones known to possess unearthed historical layers. Therefore, it offers a study that involves understanding the landscape, geography, and urban archaeology together to reveal the historical character of the urban landscape and to integrate it to urban planning for better conservation (Figure 17).



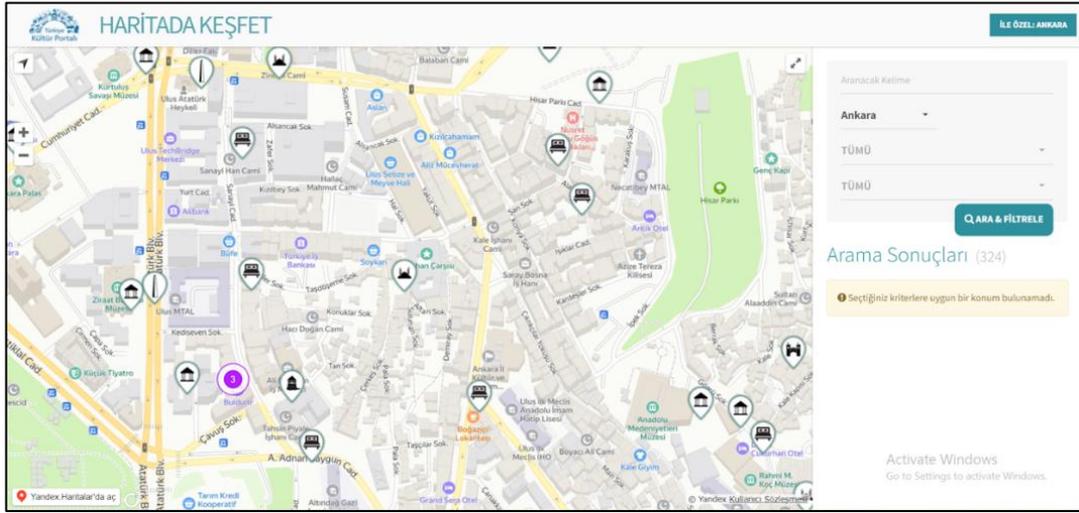
**Figure 17.** GIS-based section study of archaeological and geological data, Tahtakale, Istanbul (Emre and Erbaş, 2020: 45).

As briefly exemplified, few institutions and individual initiatives have launched some digital databases and there exists no nationwide endeavor to process digital archaeological databases systematically. There is a clear need to prepare a standardized archaeological database encompassing the entirety of the country's heritage territory. This comprehensive dataset should include rescue excavations, sondage work, and assorted reports, offering a holistic characterization of the entire archaeological heritage.

### 3.4. Digitalization Projects About Ankara

A digital cultural heritage inventory of Ankara can be found on the Ministry of Tourism and Culture's portal, which enables users to pinpoint resources on a map (Figure 18).<sup>41</sup> This inventory, primarily brings forth the Islamic and Republican-era structures and has limited coverage of earlier periods. It lacks information on Phrygian and Roman remains, and key heritage assets such as the Phrygian tumuli, the Temple of Augustus and Roma, Roman Theatre, and Julian (*Belkız*) Column. Notably, the Roman Bath and *Cardo Maximus* are also not shown on the map. This inventory, which serves touristic purposes, ironically falls short in terms of representing the complete heritage context of Ankara. Nevertheless, from a cultural perspective, it provides information about the dating and function of selected structures, and their transformation over time, with accompanying images.

<sup>41</sup> *Kültür Portalı: Haritada Keşfet* <https://www.kulturportali.gov.tr/>



**Figure 18.** Web page from the cultural inventory of The Ministry of Tourism and Culture (*Haritada Keşfet - Ankara*).

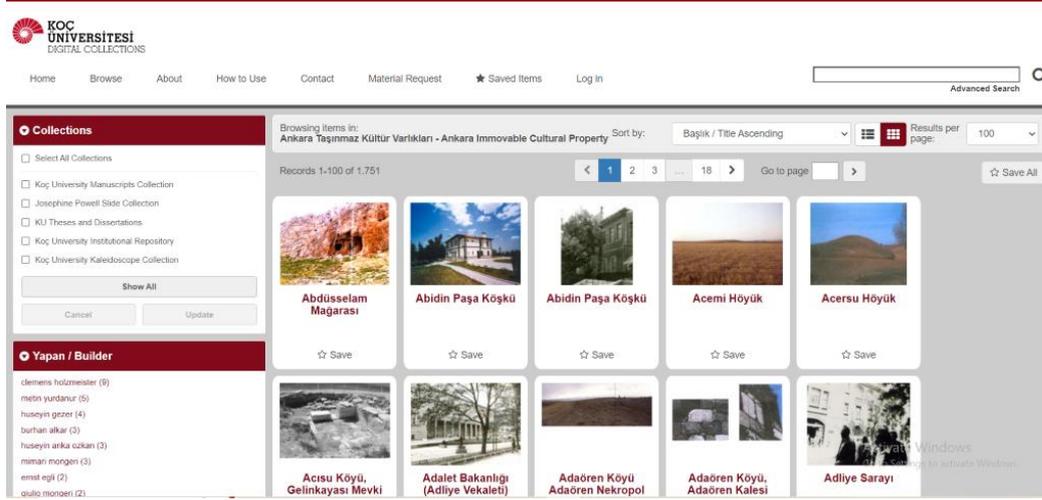
Another digital archive is prepared by Koç University Vehbi Koç Ankara Studies Research Center (VEKAM), which is managed by the Library of Suna Kıraç.<sup>42</sup> The archive holds various collections, including “Urban Memory of Ankara”, a project that brings together the city's tangible and intangible urban heritage. There are more than 15,000 digitized items in this inventory, distributed among various types of collections: “Ankara Photograph, Postcard, and Engraving Collections” (*Ankara Fotoğraf, Kartpostal ve Gravür Koleksiyonu*), “Ankara Documents Collection” (*Ankara Belgeleri Koleksiyonu*), “Ankara Map and Plan Collection (*Ankara Harita ve Plan Arşivi*), “Ankara Immovable Cultural Properties Collection” (*Ankara Taşınmaz Kültür Varlıkları Envanteri*), “Vehbi Koç Collection” (*Vehbi Koç Koleksiyonu*), “Vehbi Koç Press Clippings Collection” (*Vehbi Koç Gazete Kupürleri Koleksiyonu*), “Ankara Orchard House Collection” (*Ankara Bağ Evi Koleksiyonu*), and “Ankara State Conservatory Collection” (*Ankara Devlet Konservatuvarı Koleksiyonu*).

The “Ankara Immovable Cultural Property Collection” is worth mentioning further in the context of this study (Figure 19).<sup>43</sup> The inventory compiles the photographs of the immovable cultural assets found primarily in Altındağ District and taken in 1978-

<sup>42</sup> <https://vekam.ku.edu.tr>

<sup>43</sup> <https://librarydigitalcollections.ku.edu.tr/en/collection/ankara-immovable-cultural-property-collection/>

1979, along with an inventory survey conducted by the Ministry of Culture at that time. As a result of this survey, 633 immovable cultural properties have been registered, and presented online. As a continuation of the survey, more properties were later identified in 24 more districts and added to the inventory. The database briefly explains the date, state, address, and pictures of the cultural assets.



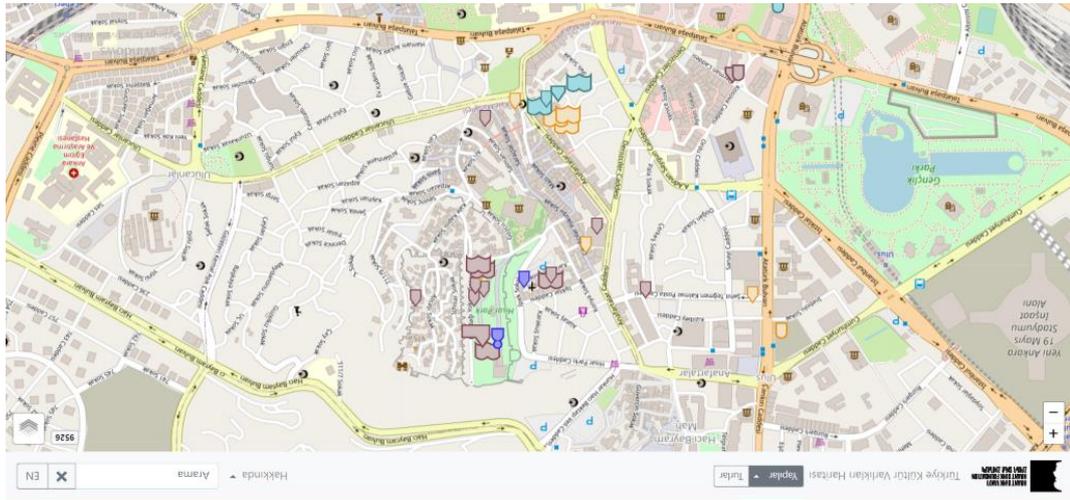
**Figure 19.** Main browsing page of the VEKAM Ankara Immovable Cultural Property Collection

According to the filters, the inventory offers information about the cultural heritage dating to the 14th century and the first half of the 21<sup>st</sup> century. Some records from earlier periods, in addition, can also be searched with “period” or “structure” keywords. Searching with the keyword “Altındağ” for Ulus district, for example, gives 84 items corresponding to houses and workplaces, mainly from the 20<sup>th</sup> century. Searching with the keyword "Ulus," on the other hand, gives only 22 records. Most items are structures from the 20<sup>th</sup> century, except for the 5<sup>th</sup> century AD Church of St. Clement. This inventory concerns cultural heritage and associated collections and does not prioritize archaeological data. Nevertheless, it is an excellent database with an impressive collection that can be used for various purposes.

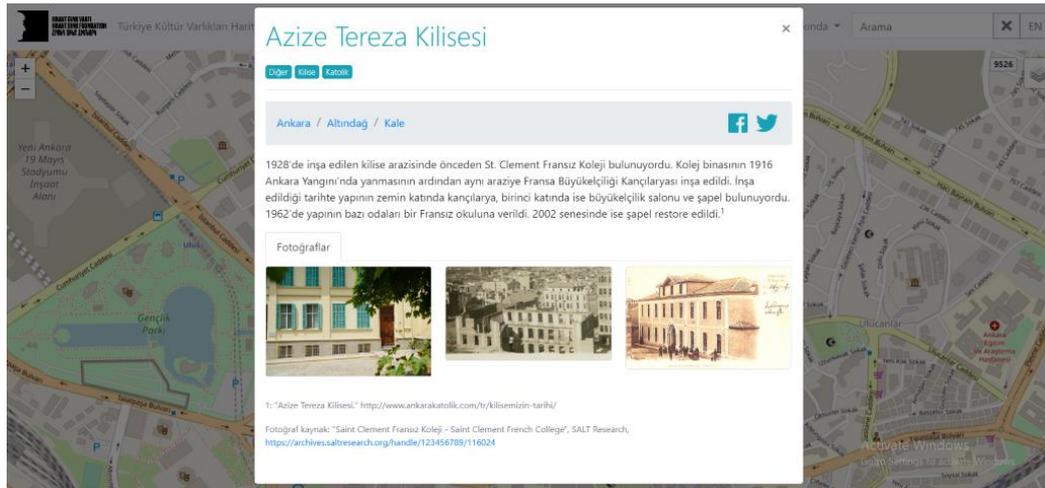
The *Mapping of Cultural Heritage of Turkey* project, initiated by the Hrant Dink Association in 2014 is an ongoing digital project that is updated with new findings (Figure 20).<sup>44</sup> Within the scope of the project, an online interactive map showing

<sup>44</sup> <https://turkiyekulturvarliklari.hrantdink.org/>

different cultures and associated heritage in Anatolia is created. The map gives information about schools, monasteries, churches, synagogues, and hospitals belonging to the Armenian, Greek, Assyrian, and Jewish communities. There are 10,000 records in the system, and every item is enriched with descriptive information, pictures, and videos. It is well-designed, giving essential information accompanied by old and recent pictures (Figure 21).<sup>45</sup> The inventory, as such, aims to map Turkey's multicultural heritage, thereby revitalizing the fading memory of non-Muslim cultures by using new media platforms.



**Figure 20.** View of the Ulus area in the *Mapping of Cultural Heritage of Turkey Project*.



**Figure 21.** Church of St. Teresa, an example from the *Mapping of Cultural Heritage of Turkey Project*.

<sup>45</sup> <https://turkiyekulturvarliklari.hrantdink.org/#poi-view/10544>

This inventory is remarkable, as it documents Turkey's relatively less studied non-Muslim multicultural heritage.<sup>46</sup> The Hrant Dink Association also offers a creative and interactive mobile application to explore the digitally presented cultural heritage. The application is made for Istanbul and Ankara for now and offers various routes following a theme of cultural heritage. Ankara section offers five routes: Kızılay, Kavaklıdere, Ulus-Hisar, Jewish neighborhood, and Ulus Boulevard. By choosing a tour, the user can follow the route and read or listen to the information about the chosen heritage route and the associated buildings.

*Bellek Ankara*, a recent project undertaken by a group of academicians from different universities for the metropolitan municipality of Ankara, is a promising study (Figure 22).<sup>47</sup> The project brings together the architectural and cultural heritage of the city, in terms of structures, open areas, and associated social components. For each structure in the database, detailed information and pictures are provided. Moreover, oral history studies are conducted through interviews to reveal the artistic and literary associations of places/buildings that impacted people's lives and thus assumed a memory value. The project is a complex one as it brings together diverse historical information about the city's cultural scene.



**Figure 22.** Main browsing page of the *Bellek Ankara Project*, Ankara Metropolitan Municipality.

<sup>46</sup> The inventory focuses only on the minority communities and their structures, but it would also be complimentary to add the Muslim heritage assets.

<sup>47</sup> <https://bellek.ankara.bel.tr/>. With contributions of researchers from Middle East Technical University, Hacettepe University and Başkent University.

State or private institutions undertake various digital inventory projects in Ankara, a few of which are briefly introduced above. Such projects each serve the valuable purpose of creating a heritage inventory, yet they show distinct characteristics and unique objectives. As such, although they do documentation and create data on specific contexts or subjects, because they are not designed to integrate and map heritage layers in the current urban context per se, they miss discussions concerning heritage integration and conservation policies. However, the data they produced and archived is diverse and complementary, which can be helpful in heritage conservation studies and inventory preparation. The involvement of government institutions in such projects may also result in transferring the available data into unified content with sustainable and professional management.<sup>48</sup>

Mobile applications, no doubt, are means of integrating web-based mapping platforms of heritage into everyday routines for all age groups. A user-friendly, well-designed mobile phone application will serve as an enjoyable tool to provide information to the public and raise consciousness about its status and importance in their visit to the site, encouraging possible visits to other heritage sites. As mobile phones are the primary information source today, the ability to use GIS and its applications in mobile phones is an important technical quality. Designing the data in digital platforms as a mobile application will thus help to reach information easily, use mapping tours, share comments and questions, and count for each search and visit to the place for preparing statistics and seeing visitation patterns. Moreover, with necessary additions to the application, it can also be used to create cultural events in the heritage location for the public. Local governments, NGOs, private organizations, or individuals could offer workshops or organize other events to enhance the daily use of the heritage site and its impact on everyday life.

### **3.5. Urban Archaeology and Urban Planning in Ankara**

This section provides a broad overview of Ankara's urban planning history to illustrate the transformative nature of Ulus and, consequently, its archaeological

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<sup>48</sup> The mapping done in the scope of this thesis, in this regard, is a modest pilot study and does not directly collaborate with any institution, while acknowledging the importance of cooperation for systematic and analytical heritage digitalization projects.

heritage since the establishment of the Turkish Republic. Understanding this historical context is essential to comprehend the impact and interplay between urban plans and projects, their influence on location, place, or space, and their role in shaping identity and character. As such, it underlines the critical need for integrating and prioritizing archaeological heritage within urban planning initiatives.

Ankara was designed as a capital city after its declaration in 1923. The first plan for Ankara was the Lörcher plan, made in 1924 and implemented partially. Lörcher's proposal to extend the urban area towards Kızılay was the primary intervention applied to this plan (Figure 23). However, the urban growth in the late 1920s necessitated a revision and, thus, the preparation of a second plan, determined by a competition held in 1932. The winning proposal was prepared by Hermann Jansen (Figure 24).<sup>49</sup> In Lörcher and Jansen's plan, new residential areas were proposed around the old city center Ulus, and the new city center *Yenişehir*, which was suggested to develop on the south axis. The only protected area proposed in the plan was the castle and its surroundings. The plan led to many modifications and renewals in the historic city center in the later stages. The city was initially planned following a North-South axis as indicated in the Jansen plan, but the ongoing urban growth and challenges encountered during the implementation of the original plan led to further modifications after 1939. In time, the primary idea of planning the old city as the center and the new city for residential areas caused functional differences between the two areas. An unpredictable result of separating the old and new towns caused the historical texture of Ulus to change by renewal (Tunçer, 2000). Jansen's projection of a population of 300.000 by 1978 was already surpassed in 1950, which had led to previously unpredicted urban changes.

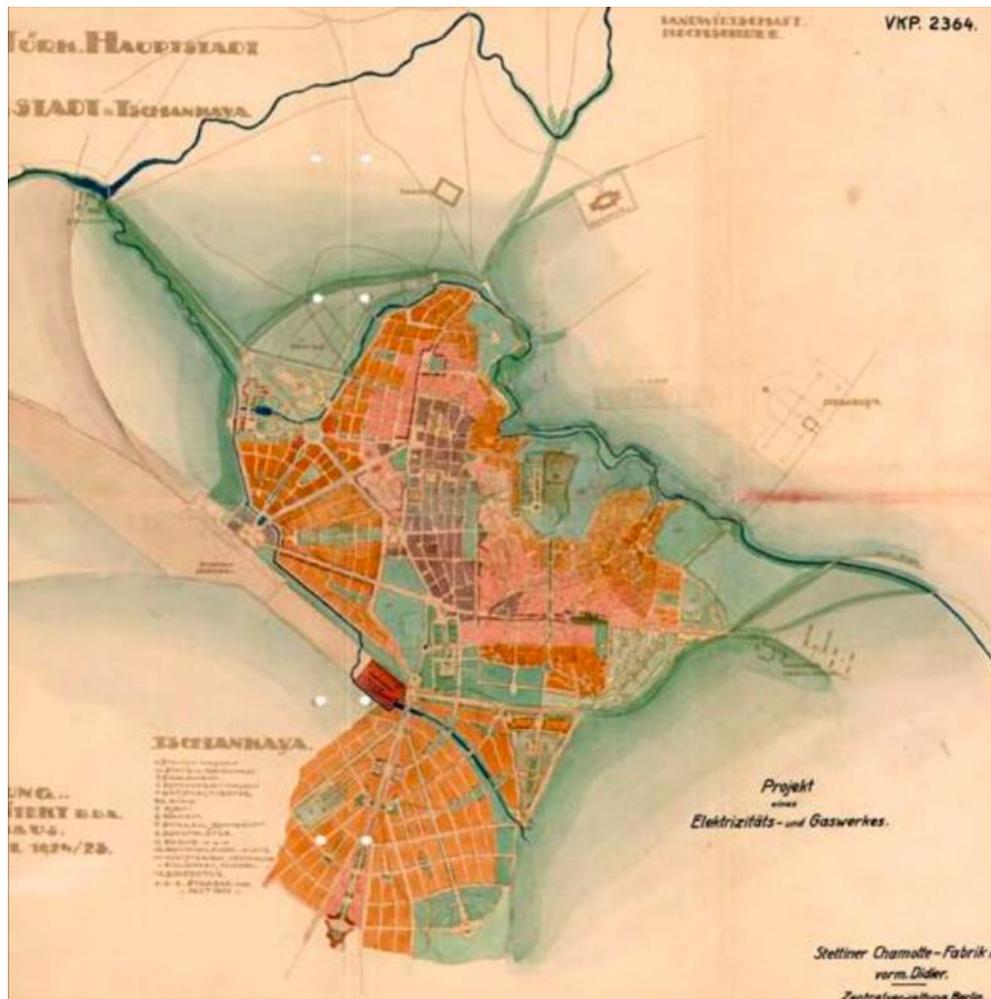
Between the 1930s-1950s, the center gradually shifted from Ulus to Sıhhiye and Kızılay. The urban and social character of Ulus district began to change with this shift, which brought a sharp separation between the "old town" and the "new city" (Işık, 2012: 46). Ulus became the work area, whereas Kızılay developed intensively

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<sup>49</sup> For Ankara's urban planning history see: Tankut 1988, 1991, 1993, 1994; Vardar, 1989; Bademli 1992; Cengizkan 2004; Erkal *et al.*, 2005.

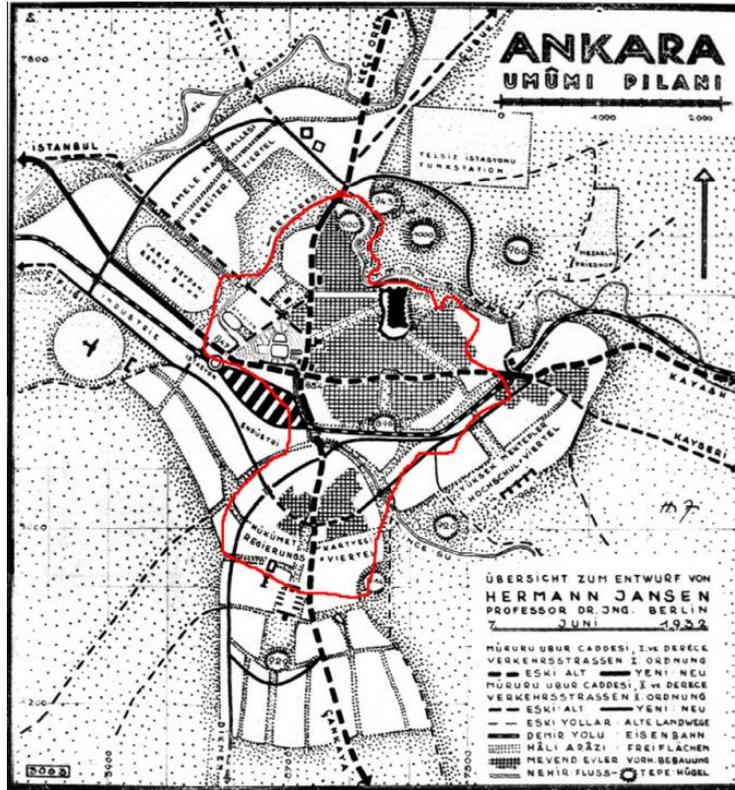
as the new administration center. Thus, the cultural layers in the Ulus historic center began to be neglected from this period onwards.

However, the envisioned central business district could not be established in Ulus in the 1950s. Moreover, the proposed efforts to renovate and enhance historical structures remained unfulfilled. Besides, Jansen's plan classified the city's hilly and sloped areas as uninhabitable, corresponding to the hills surrounding the Ulus district. Regrettably, this decision subsequently facilitated unauthorized construction in the Ulus area, as no regulations were introduced concerning the area in the plan. The consequences of the plan decisions contributed to the increasing physical and conceptual dichotomy between the character of the old and new towns (Hatiçoğlu, 2021: 107).



**Figure 23.** Ankara, The Lörcher Plan, 1924, showing the new and the old city (Retrieved from

<https://www.goethe.de/ins/tr/ank/prj/urs/geb/sta/loe/trindex.html>)

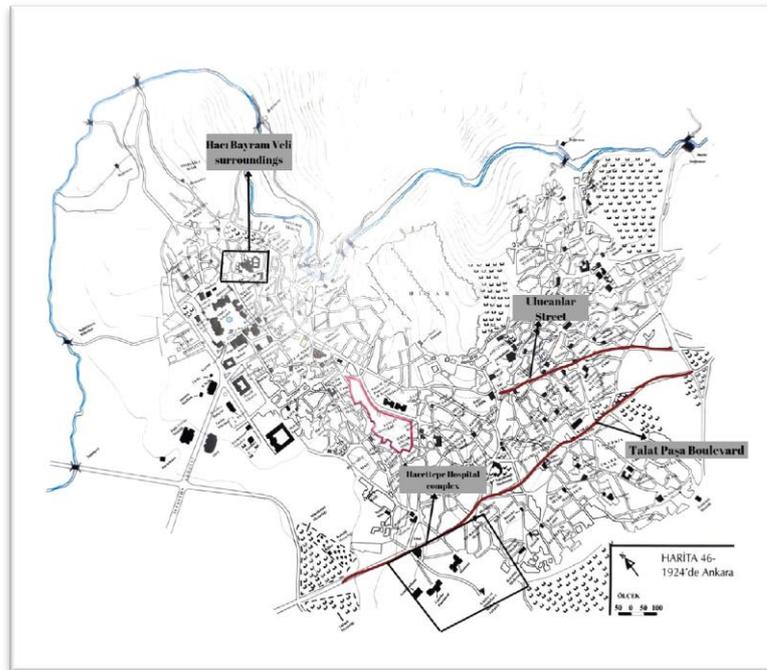


**Figure 24.** Ankara, The Jansen Plan, 1932. The red boundary shows the area considered in the 1924 Lörcher Plan (Batuman, 2013, Fig. 3).

A significant development that affected the urbanization of big cities, especially İstanbul and Ankara, following the Second World War was migration from the rural to the urban centers. The unprecedented migrant flow and housing demand required a new plan for Ankara. Ankara Municipality opened a national planning competition to obtain a new city plan in 1955. The winning project by Nihat Yücel and Raşit Uybadin was approved in 1957. Yücel and Uybadin had foreseen a population of 750.000 in 30 years, reached even before 1965. The immense population growth caused illegal house constructions, and the first squatter (*gecekondu*) quarters started to develop in the Bentderesi area in Ulus. Regarding the Yücel-Uybadin plan, and especially in the 1960s, multi-story buildings began to pop up in the Ulus area; many of the new buildings were built as 6-8 floor blocks with extended bases, which disrupted the homogeneity of the historical urban fabric (Tunçer *et al.*, 2009). Between the 1950s and 1980s, Ulus gradually became a center of commerce and shopping and lost its bureaucratic, cultural, and political character. Kızılay became the new cultural and business center in the given period. The uncontrolled new constructions in the Ulus area naturally changed historic center's fabric.

Since then, old Ankara has remained stuck behind multi-story apartment blocks lined along the streets. The fabric, now dominated by tall blocks, often with poor construction quality, became the residential and commercial neighborhood of the socially disadvantaged population of the city. In time, not only the social transformation and changing profile of use but also the neglect of maintenance and natural wear decreased the environmental quality of Ulus, turning it into a collapse zone. The zoning practices that have been carried out in the region. However, they did not aim for protection or improvement, as specified and envisioned in the Yücel-Uybadin Plan, but rather at demolishing and renewing the fabric completely (Işık, 2012: 49). Tunçer (2001) lists some of the inappropriate renewals that changed the fabric of extensive areas in Ulus as such (Figure 25):

- The demolition of the structures around the Hacı Bayram Mosque and the implementation of today's open space (1937),
- The opening of Ulucanlar Street (1955), which required the expropriation and demolition of many houses,
- The construction of the Hacettepe Hospital Complex (1960s), destroyed many high-quality old Ankara Houses, such as in Kurtuluş and Kyrgyz neighborhoods, which also had historical structures (Tunçer, 2001: 77).



**Figure 25.** Locations of the mentioned changes in the Ulus historic center after Yücel-Uybadin Plan, shown on 1924 city map (plan adapted from Aydın *et al.*, 2005, Map 46).

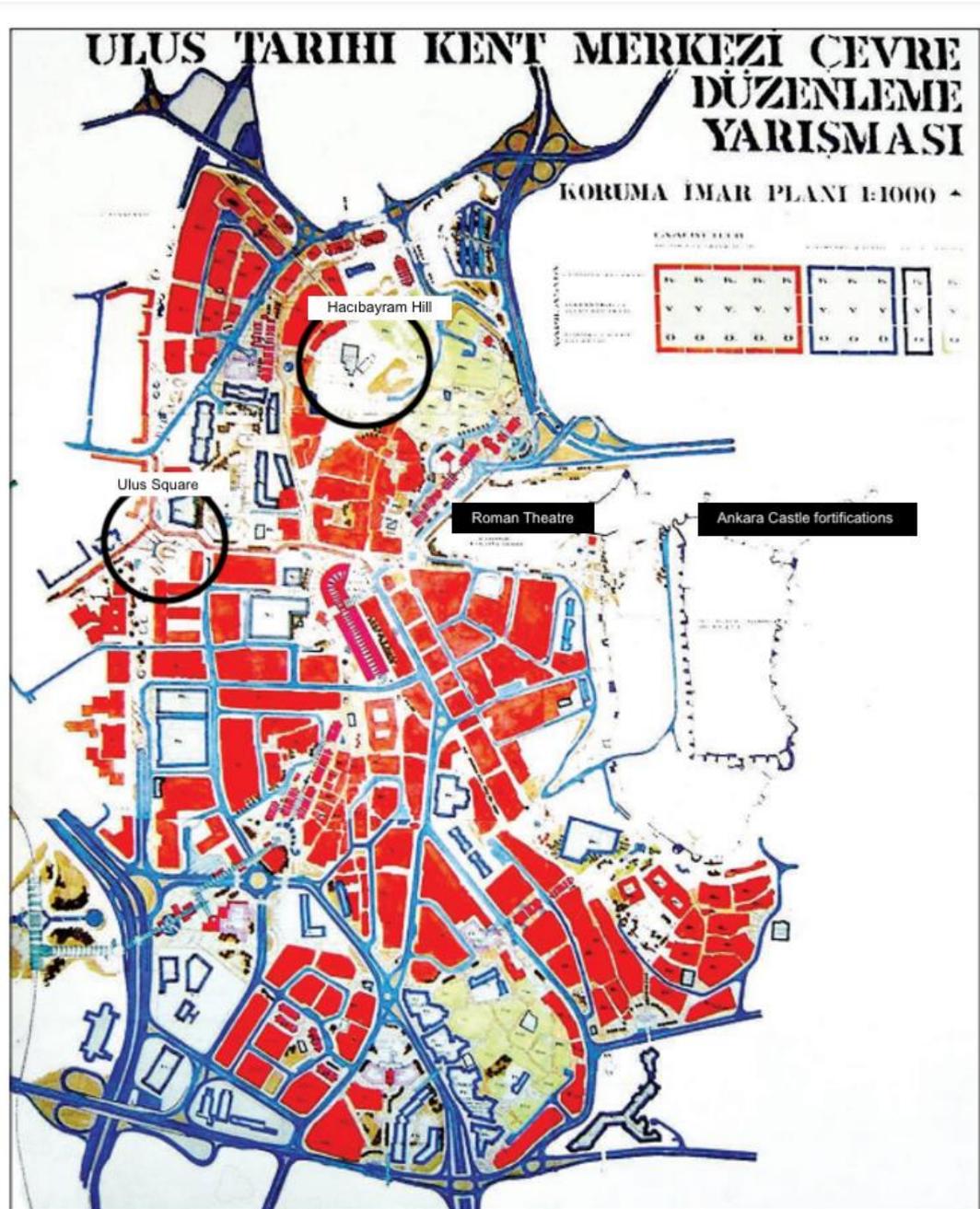
The need for a new plan in Ankara had become inevitable already in the 1960s. Upon the Council of Ministers' Decision in 1969, the Ankara Metropolitan Area Master Plan Office was established to initiate the first comprehensive plans at the metropolitan scale. The Ankara 1990 Master (*Nazım*) Plan was prepared by the office in 1982, with a 20-year projection.

Ankara's 1990 Master Plan mainly focused on developing new residential areas, such as Sincan, Eryaman, and Batıkent, and industrial zones. The surviving historical areas of the city, in the meantime, were declared as "conservation sites" in 1980, with the law of "Act number 2863 on the Conservation of Cultural and Natural Beings", thus implying legally that the new construction plans in this area have to take protection and conservation of heritage into account (Alpan, 2016: 665). The declaration brought the implementation of the "Floor Regime Plans" (*Bölge Kat Nizamı*) to an end, but this was not powerfully applied to control of the urban development; multiple-floor building constructions continued in Talatpaşa, Ulucanlar, Hasırcılar, Anafartalar, Denizciler, and Hükümet Streets (Işık, 2012: 53). The Ankara Nazım Plan, on the other hand, remained ineffective for the *gecekondu* quarters that developed around Bentderesi. The deterioration and change in the historical area's character, which began in the early 1950s reached a climax in the 1980s, when Ulus had become a spatially and socially collapsing, neglected area (Tunçer, 2000: 12).

Many status changes were introduced for the conserved area in the later decades, and the protected area decreased over time. Until the implementation of protection projects in the Ulus historic city center, many structures had already been abandoned and left to their fate, harmed, destroyed, and/or burnt.

Ankara Greater Municipality opened a national competition to obtain a conservation plan for the historic center of Ankara in 1986. The winning proposal prepared by a team of academician planners and architects from the Middle East Technical University Faculty of Architecture, led by Raci Bademli was approved in 1990. "Ulus Historical City Center Conservation-Reclamation Plan" (*Ulus Tarihi Kent Merkezi Koruma – Islah İmar Planı*) was, thus, an extensive project in scope and

included rehabilitation, conservation, renewal, and development with an approach to control the possible deficiencies (Figure 26). However, although the project was implemented fragmentarily, a new enactment released in 2005 canceled the “Historical City Center Conservation-Reclamation Plan”, and the planning process ended (Alpan, 2016: 666).



**Figure 26.** Main locations shown on the cancelled “Ulus Historical City Conservation Renovation Plan” (Plan adapted from Tunçer, 2013: 13).

On January 14, 2005, under the directives of the then mayor, the Ankara Metropolitan Municipality Council made a significant decision (Decision No. 210) which annulled all the existing plans for the area. Simultaneously, the municipality designated the area as “Ulus Historical and Cultural Urban Transformation and Development Project Area” (Figure 27).



**Figure 27.** Boundary of “Ulus Historical and Cultural Urban Transformation and Development Project Area”, according to the Municipal Council Decision No. 210, dated 14/01/2005 (adapted from Hacıoğlu 2021, Fig. 37).

Plans that were made starting from 2000 had short lifetimes, but they had negatively affected the Ulus historic center. In 2007, with Decision No. 525, the Ankara Metropolitan Municipality Council accepted the 2023 “Ankara Metropolitan Master Plan” which designated the Ulus area as part of the Central Planning Zone; its execution also faced challenges. The “Ankara Historic City Center Renewal Area Conservation Plan”, approved in 2007, aimed primarily at renewal, and ignored conservation principles. It was later canceled due to legal actions in 2009.

In 2007, the Ankara Metropolitan Municipality collaborated with Hassa Architecture Engineering Construction Ind. Trade. Co. Ltd. to prepare the “Ankara Historical City Center Renewal Area Conservation Master and Implementation Plans” (*Ankara Tarihi Kent Merkezi Yenileme Alanı Koruma Amaçlı Uygulama ve Nazım İmar Planları*). Despite being approved in 2007, these plans were criticized for not following to city planning rules and prioritizing renewal over conservation. It was discussed that the plans considered the conservation of Seljuk, Ottoman, and Early Republican monuments and ignored the conservation of the heritage of the earlier periods (Hatiçoğlu, 2021: 120). Subsequently, the lawsuits led to the cancellation of these plans in 2008. Following the cancellation, the “Transition Period Principles of Conservation and Terms of Use” were formally adopted for a while. The “Ulus Historic City Center 1/5000 Conservation Plan” was finally approved in 2014. Until then, there happened instances of fragmented interventions that did not align with the conservation principles (TMMOB Şehir Plancıları Odası Ankara Şubesi, 2019; Hatiçoğlu, 2021: 121).

The 2014 “Ulus Historic City Center 1/5000 Conservation Plan” prepared by Makbule İlçan and UTTA Planning and Project Design Business Partnership, faced opposition due to conflicting decisions that may also lead to potential destruction of historical qualities. It was suspended in 2015 and fully canceled in 2016. “Ankara Province, Altındağ District, Ulus, Samanpazarı, Kale, Kayabaşı Historical Sites Transition Period Principles of Conservation and Terms of Use” (*Geçiş Dönemi Yapılaşma Koşulları*) is decreed with the decision No. 1483 by Ankara Regional Council for the Conservation of Cultural and Natural Property in 27.07.2015, following the cancelation of 2014 plan. The decree has accepted the extension of the transition period principles for one year with the decision No. 3349, dated 12/07/2018. On 30.07.2019, the transition period principles decree was extended one more year, and was still active in 2022. Thus, the conservation plan had turned into a renovation plan for the Ulus district. Since 2015, Ulus Historic City Center is not subjected to any urban plan that leaves it unprotected (Kutlu, 2022: 123).

Overall, all the recent plans faced legal challenges, inconsistencies, and conflicts. The period after 2005 was without an urban plan and resulted in unauthorized

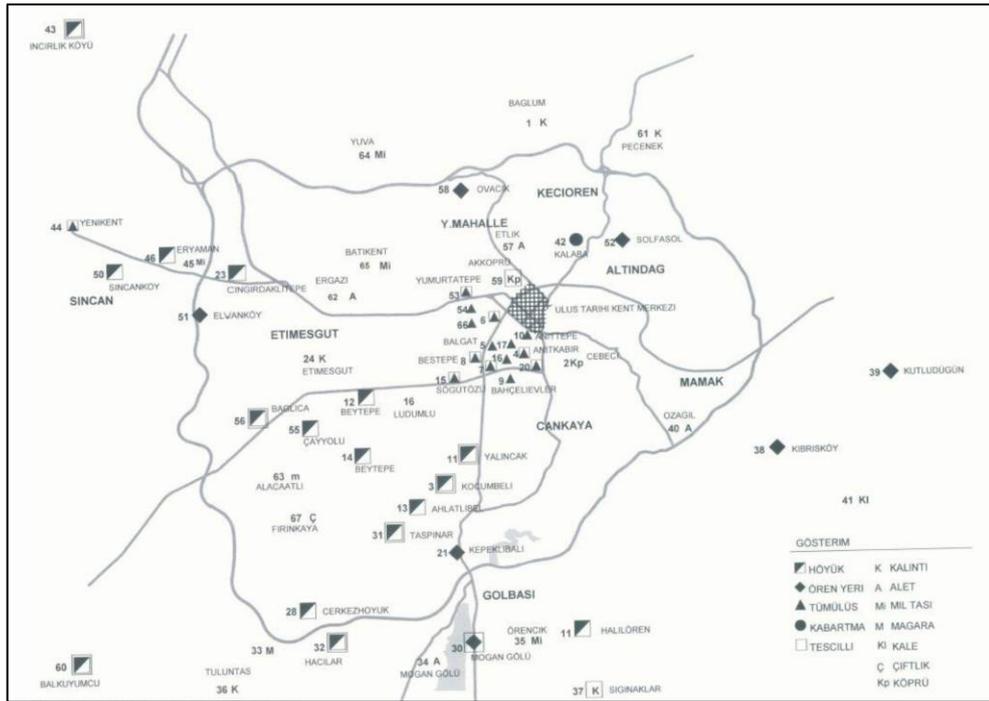
interventions that harmed the preservation of the historic city center and its authenticity. Today, the area designated as “Ulus Historical and Cultural Urban Transformation and Development Project Area” is assigned as an “Urban Archaeological Site”, thus, it has reached to the status as an urban archaeology area.

Karakul and Yıldız (2020) shed light on the challenges related to the protection of cultural heritage. In particular, they highlight the dichotomies in the legislation regulating the protection of tangible and intangible cultural heritage, the obstacles in the operational procedures of institutions during implementation - lack of coordination, as well as the contradictory practices of responsible institutions that deviate from scientific restoration principles and holistic conservation approaches, as in Ulus (Karakul and Yıldız, 2020).

In safeguarding and conserving Ankara's archaeological heritage, urban plans have sometimes posed more hindrances than acting as supportive mechanisms. On the other hand, a notable initiative about urban archaeological investigations and their integration into urban planning was undertaken in 1993. A research team that included Gönül Tankut, Sevim Buluç, and Numan Tuna from Middle East Technical University designed a project known as the “Ankara Archaeology Master Plan”. The primary objective of this plan was to devise a strategy to preserve the city's cultural heritage. The project outcomes were presented to the Ankara Metropolitan Municipality, aiming to offer insights into potential approaches to incorporate archaeological considerations and urban planning frameworks (Tankut *et al.*, 2006). Although it remained a proposal, this project represents the first attempt to integrate archaeological heritage, protection, and conservation into urban planning. As such, its report represents a key document as it defines vital points for practicing urban archaeology.

It foremost underlined the absence of a comprehensive archaeological database for urban archaeological research in the case of Ankara and emphasized the need to establish it. By bringing the historical research and interventions done and documented by local museums and archives together, this pioneering initiative crafted an early database inclusive of many archaeological discoveries (Tankut *et al.*,

2006, Fig 1) (Figure 28). The team defended that embracing the concept of an archaeological database would facilitate the careful identification of archaeological sites, enabling urban development and the preservation of archaeological significance to progress collaboratively. In this respect, the project envisioned the preparation of an “urban archaeology atlas”. Yet, owing to the unavailability of specific excavation reports and essential data, the team could not finalize the intended compilation. Instead, they considered the project a stepping stone for future inquiries towards establishing a more comprehensive database. This, in turn, would ultimately inform its integration into urban planning (Tankut *et al.*, 2006: 23). Although the “Ankara Archaeology Master Plan” defined the relevant scope and included the necessary principles and methods to safeguard and integrate archaeological heritage into urban fabric, its details regarding the extent of the plan's adoption and incorporation into administrative processes remained undisclosed.



**Figure 28.** Archaeological findspots around Ankara (Tankut *et al.*, 2006: Fig. 1).

## CHAPTER 4

### ULUS IN CONTEXT

#### 4.1. Geographic Characteristics

On March 29, we stayed in Ankara for a whole day. We visited the city. There was a fortress on a hill. We went up there. The city of Ankara and its castle were very beautiful in the past, it was built in a perfect place. One always desires such places.

Dernschwam, XVI century<sup>50</sup>

Like many other ancient cities Ankara was established near water resources, in a natural context of steep hills, streams, and plains where there were fertile and protected lands. Its mild topography and fertile plains, in addition, have also played a role in its preference as a settlement site. The steep slope in today's citadel area gave a natural defense and possibility for building city walls, whereas mounds like Hacı Bayram Hill and Çankırıkapı Hill had become important and sacred centers around the city (Aydın *et al.*, 2005). Two steep hills, Hıdırlık Hill to the north and that with the citadel to the south surrounds the old town (Figure 29). Between the two hills lies the valley of Bent Creek (*Bentderesi*), the name 'Bent', comes from the dam which was built in the Roman period. Today, the creek and river lay beneath the asphalt road and are no longer visible. At the bottom of the valleys between İdris-Elmadağ mountains, passes the streams which are the main tributaries of *Ankara Çayı*. Of these, *Çubuk Çayı*, *Hatip Çayı* (*Bentderesi*) and *İncesu Deresi* flow towards the city center.

Due to its natural and geographical assets, Ankara had been settled continuously since the Paleolithic Age (Gülekli, 1948). The city, hence, has become home to at least seven civilizations, and has been capital three times; the capital of the Turkish Republic, the capital of the Galatian province of the Roman Empire and the capital of the Galatian tribe, Tectosages.

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<sup>50</sup> Önen, 1992, translated by the author.



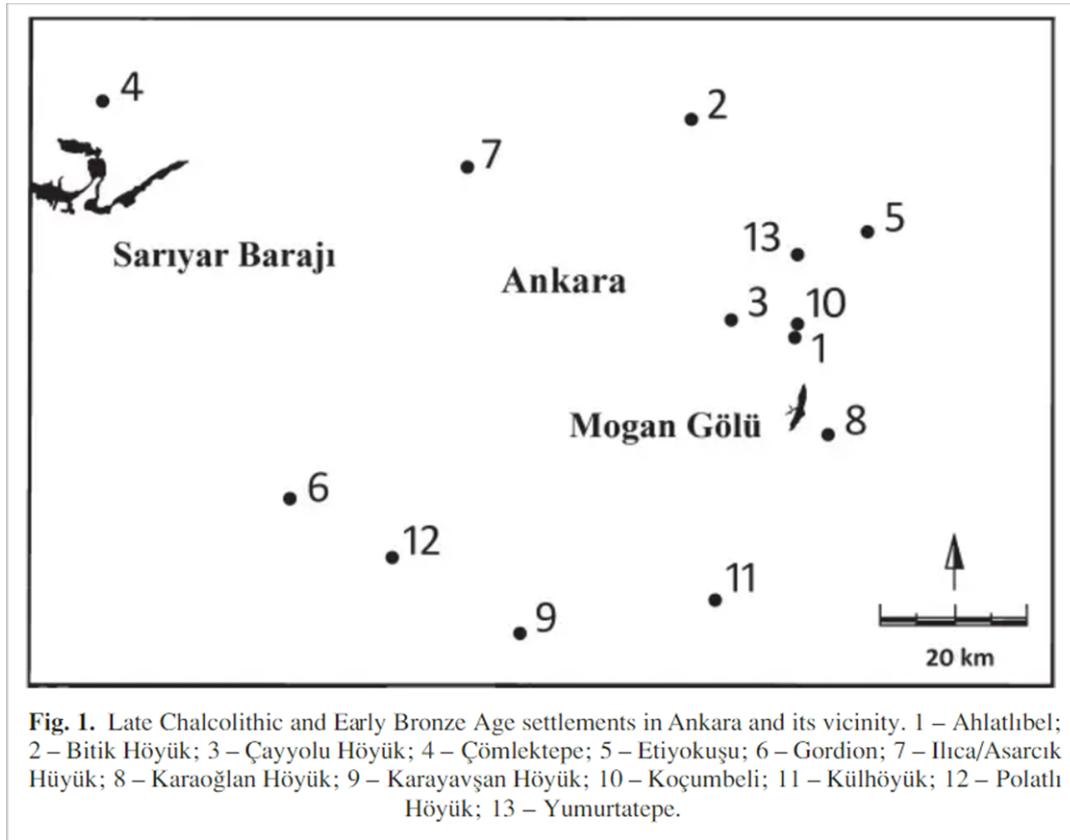
**Figure 29.** View of Bentderesi from Ankara Castle, on the right is Hıdırlık Hill (VEKAM Library and Archive, no. 2372)

#### **4.2. Historical Development**

The archaeological studies showed that Ankara was first settled in prehistorical times, and its known history goes back to the Paleolithic Age (Gülekli, 1949; Erdoğan *et al.*, 2008; Museum of Anatolian Civilizations). The Paleolithic period finds from and around Ankara are displayed in the Museum of Anatolian Civilizations and the Museum of the Institute of Mineral Research and Exploration (MTA Museum). Among the prehistoric finds in the museum are tools from the Mesolithic Age (Erdoğan *et al.*, 2008: 10) and Neolithic Age finds that date to approx. c. 7000-6500 BC, which include an axe discovered in the excavations conducted by Remzi Oğuz Arık around the slopes of Ankara Castle and the lamps and arrowheads found by Nurettin Can Gülekli around Hacettepe University (Erdoğan *et al.*, 2008: 13).

Excavations were done in various areas in and around Ankara in the 1930s to investigate the Early Bronze Age settlements. Findings from this period mainly came from mounds (*höyük*). Ahlatlıbel, Etiyokuşu, Bitik Höyük, Karaoğlan Höyük, and Polatlı Höyük were the pioneering excavation sites of the 1930s. In the 1960s and

later, excavations were also done in Koçumbeli, Yumurtatepe, Çömlektepe and Külhöyük sites (Bertram and Bertram, 2018) (Figure 30).



**Figure 30.** Late Chalcolithic and Early Bronze Age settlements in Ankara (Bertram and Bertram, 2018, Fig 1).

The cultural presence of the Hittites (1750-1200 BC) in the city is spotted in many areas that lay outside the boundaries of the city center. Hittite period ceramics are found in Bitik Höyük at Kazan and are now on display in the Museum of Anatolian Civilizations (Erdoğan *et al.*, 2008: 25). From Balıkhisar Höyük came vase, pot remains and ceramics (Erdoğan *et al.*, 2008). Other important Hittite sites are Gavurkale and Külhöyük, 60 km south of Ankara, located near Haymana-Oyaca in Haymana District. The site was excavated by Hans von der Osten, who found a grave and a sanctuary (Henning Von Der Osten, 1933). Ballıkuyumcu Höyük on the way to Polatlı, Karaoğlan in Gölbaşı district, Ilıca/Aracık mound in Ayaş district, and Polatlı mound in Polatlı district are the other Hittite find sites (Anatolian Civilizations Museum). Although the Hittites could likely have settled in the city, possibly in the Castle area, and used Ankara as a military zone, for the steep hills made the castle

area a naturally protected area, no Hittite finds are found neither in the city center nor in the Ulus area (Erzen, 1946: 24).

Phrygians came to Anatolia when the Hittite Empire collapsed in c. 1200 BC. The Phrygian capital Gordion is located in the Polatlı district of Ankara, approximately 100 km away from the center of Ankara.<sup>51</sup> A renown Phrygian cultural find is the wooden burial chamber found inside the Gordion tumulus and dated to 740 BC. The architectural characteristics and finds indicate an elite burial, most likely belonging to a king; the carbon dating of the timber suggests that the chamber housed the burial of King Gordias, the father of the famous King Midas.<sup>52</sup> The remains included fine woodcarving, metalwork and timber construction. Another significant Phrygian city is Kerkenes,<sup>53</sup> which lies approximately 200 km east of Ankara, where several pottery, metal and glass, finds are revealed, in addition to organic materials and skeletons.<sup>54</sup> Other settlements associated with Phrygians around Ankara, are; Yalıncağ, Bağlıca, Bitik, Gâvurkale, Hacı Tuğrul, Halil Ören, Karaoğlan, Hacılar, and Taşpınar (Alanyalı Aral, 2017; Aydın *et al.*, 2005). The discovery of tumuli in and around Ankara, in particular, provided crucial information about the Phrygians and evidenced that Ankara was an important Phrygian city, next to Gordion and Kerkenes (Alanyalı Aral, 2017: 24). Phrygian structures and artifacts, except the known tumuli, remain buried under the modern city, while many tumuli have been lost over time. The Phrygian cultural finds include generally, apart from the tumuli, *orthostates*,<sup>55</sup> ceramics and small finds. The locations of the spotted tumuli indicated that the area between Atatürk Forest Farm (Gazi Orman Çiftliği), Anıttepe and Bahçelievler was a necropolis area in the Phrygian period (Gülekli, 1948: 38; Tuna, 2007: 99).<sup>56</sup> Despite the cultural settlement continuity in Ankara, there are few

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<sup>51</sup> Gordion is inscribed in UNESCO World Heritage List in September 2023, <https://whc.unesco.org/en/list/1669/>

<sup>52</sup> [https://www.sas.upenn.edu/~nmiller0/Tour\\_MM\\_circuit.Turkish.html](https://www.sas.upenn.edu/~nmiller0/Tour_MM_circuit.Turkish.html)

<sup>53</sup> For more information and GIS studies about Kerkenes see, <http://www.kerkenes.metu.edu.tr/kerk1/00khome/overview/overview.html>

<sup>54</sup> <http://www.kerkenes.metu.edu.tr/kerk1/07finds/index.html>

<sup>55</sup> An *orthostat* is a stone relief, forming a part of a structure or set on the ground. Commonly used on the walls of the chambers and tombs.

<sup>56</sup> <https://muze.metu.edu.tr/en/phrygian-necropolis>

visible remains from the Phrygian period in the Ulus district. Thus, not much is known about Ankara in the 7<sup>th</sup> and 6<sup>th</sup> centuries, during the period of battles between the Lydians and Persians as well (Gülekli, 1948: 29, Aydın *et al.* 2005: 55, 60). The Lydian and Persian inscriptions, on the other hand, do not mention Ankara, which suggests these cultures did not leave a strong cultural impact in the city.

Important military and commercial routes had passed through Ankara, making its location strategically significant in history (Erzen, 1946; Gülekli, 1948: 32, Aydın *et al.* 2005: 60). Ankara, respectively, had served as an important trade center in antiquity, as it was on the “Persian Royal Road”, the major ancient trade road that connected Sardis in Lydia and Susa in Iran (Figure 31).<sup>57</sup>



**Figure 31.** Persian Royal Road and other important roads passing from Ankara (adapted from Gülekli, 1948, Fig. 2).

Galatians arrived to Anatolia in the 3<sup>rd</sup> century BC and culturally spread into many parts including Ankara. There are no visible remains from this period in the Ulus district today. However, it is suggested that the Galatians could have originally built

<sup>57</sup> For the Persian Royal Road see, Calder, 1925; Gülekli, 1949: 32; French, 1998; Aydın *et al.*, 2005, Fig. 11; Alpan, 2016: 664.

the castle.<sup>58</sup> Aydın *et al.* (2005) also suggest that the Ankara Castle could have been constructed first in the Galatian period, considering that Galatians built several castles in the cities they had settled.

Ankara (*Ancyra*) became a province of the Roman Empire and was given the status of the capital of the Galatian province of the Empire in 25 BC. With this decree, the settlement character changed from the Galatian castle (*phrourion*) to a planned Roman city with the introduction of a road network (Mitchell, 2003; Gençler Güray, 2021). Ancyra as the capital of the Roman province of Galatia was an important city with several urban buildings (Cooke, 1998) such as Temple of Augustus and Rome, Roman bath, and Roman theater.<sup>59</sup>

Following the spread of Christianity in the 4<sup>th</sup> century AD, Ankara became a prominent religious center, and bishops gathered here in 314 and 358 AD. After the Roman Empire split into two in 395 AD, Ankara became part of Eastern Roman Empire, also known as the Byzantine Empire. Saint Martir Plato and Saint Clement were two significant saints of the city at that time.<sup>60</sup> In the 5<sup>th</sup> century, Ankara became the center of the Galatian bishopric. In the same century the city suffered from famine and plague (Erdoğan *et al.*, 2008: 83). In 615 AD, the Sasanians invaded the city, and in 622 AD, the inhabitants moved into the area protected by the castle walls, utilizing the structures from earlier periods to strengthen the city walls.

Between 654 and 1071 AD, the city witnessed various battles and invasions. In 1071, Ankara became part of the Seljuk Empire. Several architectural and cultural achievements empowered the city during the Seljuk period, impacting its heritage. In the following centuries, Ankara changed hands several times under various Turkic and local rulers. It saw political and territorial shifts as different emirates, and principalities emerged and sought control over the region (Galanti, 1951; Aydın *et al.*, 2005; Erdoğan *et al.*, 2008).

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<sup>58</sup> Strabon also defined Ancyra as a “castle” than a “city” (Güven, 2001: 111).

<sup>59</sup> For Roman Ancyra also see, Foss, 1977; Mitchell, 1984/85, 89/90; Mitchell and French, 2012.

<sup>60</sup> For more information on the Saints see, Serin, 2014.

During the 15<sup>th</sup> century, Ankara became part of the rising Ottoman Empire, gradually expanding its territories across Anatolia. Under the Ottomans, the city flourished and became a regional trade, commerce, and administration center. The Ottomans built and renovated numerous public structures, leaving a rich architectural heritage in Ankara (Galanti, 1951; Aydın *et al.*, 2005; Erdoğan *et al.*, 2008).

With the decline of the Ottoman Empire in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, Ankara experienced significant changes. During the Turkish War of Independence, between 1919 and 1922, the city became a strategic center of resistance against foreign occupation. It served as the headquarters of the movement led by Mustafa Kemal Atatürk. The turning point for Ankara came on October 13, 1923, when the newly established government of the Republic of Turkey officially declared Ankara as the new capital that replaced Istanbul. This decision was driven by various factors, including Ankara's strategic location at the heart of the country and the desire to create a more centralized government. Since then, Ankara has continued to grow and evolve as the capital of Turkey, playing a pivotal role in the country's political, cultural, and economic landscape. With this growth, large-scale urban changes that took place in both the city's historic centers and new development areas, thereby initiating an erosion of the identity and cultural heritage of the historic city.

As this brief historical frame demonstrates Ankara has a rich and multicultural history, enriched with numerous archaeological heritage representing various cultures and historical periods. Ulus, had been an accumulation zone of diverse cultures, bearing the many archaeological and cultural heritage, both beneath the ground and above it.

### **4.3. Public Archaeology and GIS Applications in Ulus**

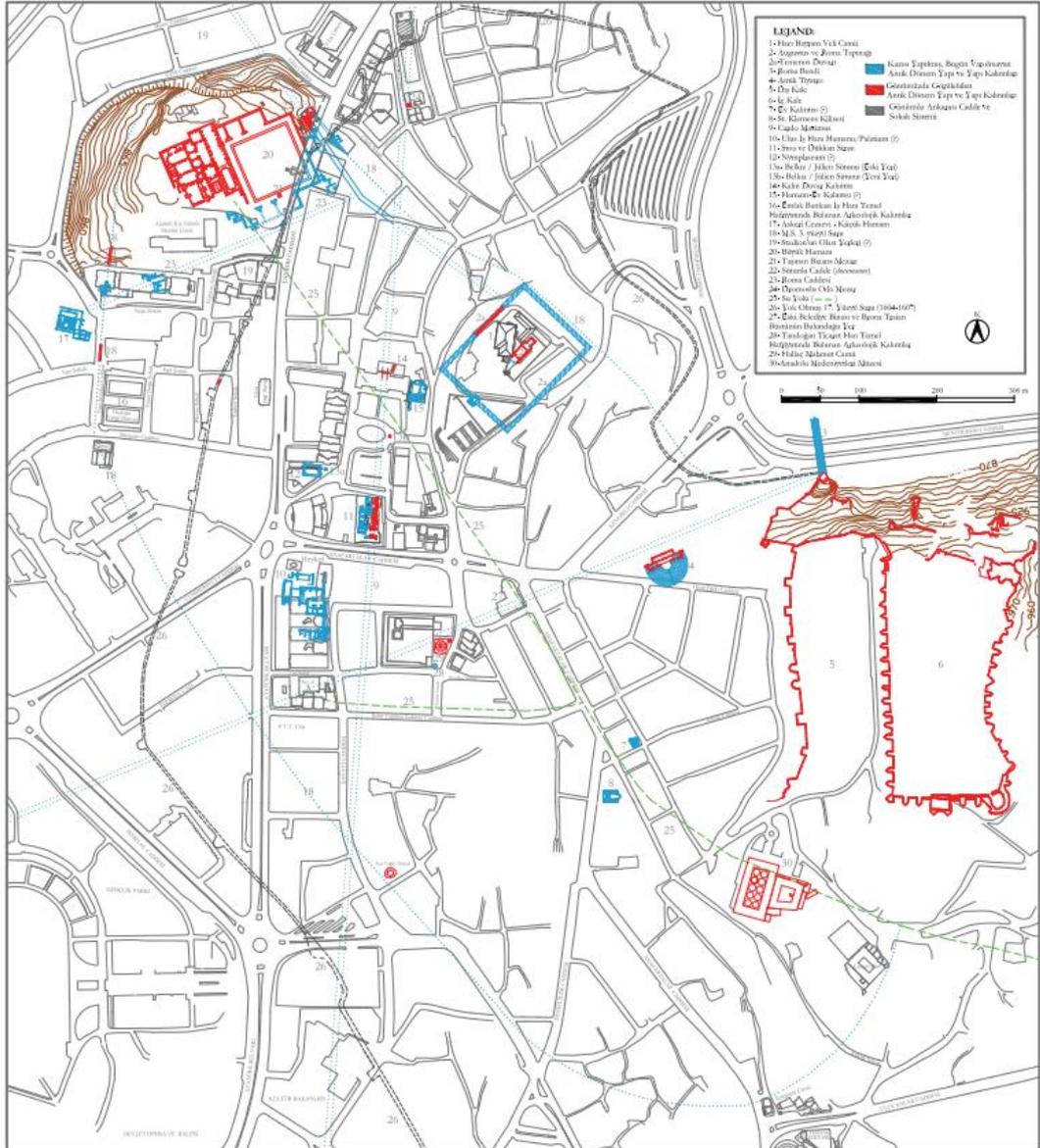
Ankara's cultural and historical complexity is well attested by diverse sources such as travelers' accounts, coins, inscriptions, and visible remnants. Regrettably, however, the remains from Ancient Ancyra are mostly lost under the modern cityscape, concealing their historical significance. The pre-Islamic heritage of the city, which is barely visible, in particular, has been considerably neglected and receives little concern from the larger public. From the Early Republican period onwards, the urban

plans undermined the importance of heritage preservation, and thus, ancient heritage sites were not conserved well. The losses brought by urban transformation and rapid urbanization, along with the detrimental consequences of natural factors and the lack of public awareness, have brought a continuous erosion of the city's cultural heritage. As a possible solution to these problems, a pilot study concentrated on digital mapping was prepared with the idea that a comprehensive mapping of all heritage assets is needed for effective management and urban heritage conservation in Ankara. Phrygian and Roman periods are considered in the pilot study. The data to be registered are taken from relevant literature, excavation reports, and two recent studies. The first one is, "Traces of Phrygian Period in Ankara: A Research on Phrygian Tumuli," which is a publication of a project started in 2019 held by METU.<sup>61</sup> Authored by Ela Alanyalı Aral, this study is used as a guide to the discovery of the Phrygian settlements in Ankara (Figure 32). The second pivotal study is the volume published by Musa Kadioğlu and Kutalmış Görkay in 2007 (Figure 33). The authors surveyed the archaeological heritage of Ankara between 2002-2007, and published their work in 2011 as a book, with a section on inscriptions by Stephen Mitchell which is the most comprehensive book about the archaeology of Ankara today. The book served as the guiding source on Roman heritage.



**Figure 32.** Locations of possible Phrygian settlement areas in Ankara (Alanyalı Aral, 2017: 28, Fig. 2)

<sup>61</sup> The study is conducted as a *Bilimsel Araştırma Projesi* (BAP) (Scientific Research Project) at METU, Project code: ODTÜ AGE-201-2019-10265.



**Figure 33.** The ancient city plan and the digital map, indicating visible ancient monuments and remains (in red), and locations of the excavated and dismantled monuments and building remains (in blue) (Kadioğlu and Görkay, 2007: Plan 1).

The Phrygian and Roman remains, artifacts and discoveries are cataloged in the light of these studies, supported by earlier publications. The Phrygian remains, apart from the tumuli, notably concentrates on *orthostats*, ceramics and pottery finds. A detailed account of these artifacts, including their specific locations, excavation dates, and associated archaeological data is given in the table below, which shows the studies in which these finds were first identified and/or published. The tabled data is later mapped to display the multi-layered fabric of the city's history.

**Table 1.** Phrygian Finds compiled from publications<sup>62 63</sup>

<b>Find Area</b>	<b>First Mention / First Excavation</b>	<b>Find</b>
Çankırıkapı	Makridi (1925-1926) (Alanyalı Aral, 2017) Oğuz Arık (1937) Dolunay (1938-1941)	Pottery
Ahiyakup Street	Makridi (1931) (Alanyalı Aral, 2017)	Relief of a winged male sphinx
Atatürk Forest Farm - <i>Fidanlık Müdürlüğü</i>	Koşay (1933)	Relief of griffon and bull
Temple of Augustus and Roma	Koşay (1938) Özgüç (1946)	Pottery
Anıtevler Neighborhood	Özgüç (1946)	Horse relief
Ankara Train Station	Akok (1940s) (Alanyalı Aral, 2017)	Pithos burial
Next to Ankara Castle - Necatibey High School	Dolunay (1941)	Half a griffon or Sphinx relief
Soğukkuyu	Akok (1946)	Pottery
Old Armenian Cemetery around the castle (the exact location in the modern city could not been determined)	Temizer (1947) (Gülekli, 1948)	Ceramics
Next to Karyağdı Baba Tomb	Gülekli (1947-1948)	Ceramics
Hacı Bayram - İsmetpaşa Street	Gülekli (1947-1948)	Ceramics
Dışkapı - Cebeci Street	Akok (1947)	Pottery
Anıtevler - Azerbaycan Street and 69. Street	Akok (1959)	Kybele relief

<sup>62</sup> Koşay 1933; Dolunay 1941; Arık 1948; Özgüç 1946; Özgüç and Akok 1947; Gülekli, 1948; Akok 1955; Temizer 1957; Buluç 1981, 1988; Temizsoy *et al.* 1996; Aydın *et al.*, 2005; Tuna 2007; Alanyalı Aral, 2017.

<sup>63</sup> The preliminary sources that cannot be accessed were cited from other sources given in parentheses.

Table 1 (Continued)

Turkish History Society Building	Akok (1962-1966) (Alanyalı Aral, 2017)	Pottery
Etlık Kara Kuvvetleri (?)	Akok (1968) (Alanyalı Aral, 2017)	Griffon and Kybele relief
İstanbul Road - Atatürk Forest Farm	Akok (1969) (Alanyalı Aral, 2017)	Griffon <i>orthostat</i>
Ulus City Bazaar	METU - Anatolian Civilizations Museum (1995-1996)	Pottery

A similar table was prepared for the remnants of the Roman period. The dataset includes all the Roman structures and buildings found within and around Ulus, drawing extensively from earlier research and based on first identifications. The data about the dismantled remains are taken from Kadioğlu and Görkay (2011).

**Table 2.** Visible and invisible structures from the Roman period compiled from publications.<sup>64 65</sup>

Archaeological Remain	Find Area	First Mention / First Excavation	Estimated Date of Construction
Julian Column (Column of Belkız)	Current location: Governor Square (Original location: Between İş Bankası Building and Ankara Social Sciences University Building)	Mentioned by travelers since the 16 <sup>th</sup> century	Between 270-275 AD
Temple of Augustus and Roma	Hacı Bayram Hill	Perrot, Guillaume and Debet (1864) (Kadioğlu <i>et al.</i> 2011)	Between 15-5 BC

<sup>64</sup> Dalman *et al.*, 1932; Mamboury 1933; Akok, 1955; Akok 1968; Temizsoy *et al.* 1996; Metin, 1997; Mitchell, 2008; Kadioğlu *et al.*, 2011; Serin, 2018. The most recent studies are taken as basis for the dating used in the study.

<sup>65</sup> The preliminary sources that cannot be accessed were cited from other sources given in parentheses.

Table 2 (Continued)

Colonnaded Street	North-east side of the Roman bath	Bittel, Schneider and Dalman (1931)	Between 1 <sup>st</sup> -2 <sup>nd</sup> c. AD
Roman Dam	Bentderesi Street	De Jerphanion (1928) (Kadioğlu <i>et al.</i> 2011) Mamboury (1933)	Between 2 <sup>nd</sup> -3 <sup>rd</sup> c. AD
Roman Bath	Çankırıkapı Hill	Bittel, Schneider and Dalman (1931)	Between 198-217 AD
The Church of St. Clement	Corner of Anafartalar and Çıkırıçılar Streets	Texier (1935) (Serin 2014)	Between 5 <sup>th</sup> -9 <sup>th</sup> c. AD
Small Bath Complex at Soğukkuyu	Between Fuat Börekçi and Celal Atik Streets	Akok (1946)	Between 2 <sup>nd</sup> -3 <sup>rd</sup> c. AD
Roman Walls (3 <sup>rd</sup> c. AD city wall)	Corner of Çiçek Street	Akok (1947)	Between mid-3 <sup>rd</sup> -mid-2 <sup>nd</sup> c. AD
Byzantine Wall ( <i>Temenos Wall</i> ) (?)	Boundary to the open area around the temple and mosque	Mamboury (1949)	6 <sup>th</sup> c. AD (?)
<i>Nymphaeum</i> (?) (Monumental Fountain)	Türkiye İş Bankası Building	Akok (1954)	Between 27 BC-14 AD
Bath / <i>Palatium</i> (?)	Under Ulus Office Block	Sarı (1954) (Kadioğlu <i>et al.</i> 2011) Akok (1956)	Between 2 <sup>nd</sup> -3 <sup>rd</sup> c. AD
Roman Theatre	Between Hisar Parkı, Bentderesi and Kevgirli Streets	Özgünel and Bingöl (1982) (Kadioğlu <i>et al.</i> 2011) Anatolian Civilizations Museum (1982)	Between 27 BC-14 AD
<i>Cardo Maximus</i>	Next to Ulus City Bazaar, continues along northern axes	Anatolian Civilizations Museum (1995, 2006)	Between 1 <sup>st</sup> c. BC-1 <sup>st</sup> c. AD

Table 2 (Continued)

<i>Stadion</i>	Between Demir and Çelik Streets, or next to Maliye Meslek Street	Görkay (2006) Kadıoğlu <i>et al.</i> (2011)	1 <sup>st</sup> c. AD
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Furthermore, the Roman burial finds, predominantly near the Ulus district, are also included in the data registration table and spatial mapping formats listed below. The burial sites are beyond the historical city center and indicating that the urban archaeological site's boundaries may extend beyond the registered area. Their precise locations, therefore, play a vital role in prospective research and explorations. Notably, some of the uncovered tombs were relocated to the Roman Bath and are now displayed as an open-air exhibition in the bath area. The table outlines the first research and identifications together with recent findings by the work of the Museum of Anatolian Civilizations and explorations mentioned in the study of Kadıoğlu and Görkay (2011).

Table 3. Roman burial finds compiled from publications.<sup>66</sup>

<b>Archaeological Remain</b>	<b>Find Area</b>	<b>First Mention / First Excavation</b>	<b>Estimated Date of Construction</b>
Tomb (many Christian church and tombs)	Ankara Train Station	Dalman, Schneider and Bittel (1932)	3 <sup>rd</sup> -4 <sup>th</sup> c. AD
<i>Necropoleis</i>	Atıfbey Neighbourhood	Dalman, Schneider and Bittel (1932) Mamboury (1933) Aydın <i>et al.</i> (2005, Map 21)	?
<i>Sarcophagus</i> fragment	Ankara University Agriculture Faculty	Dalman, Schneider and Bittel (1932) Koşay (1935)	3 <sup>rd</sup> c. AD

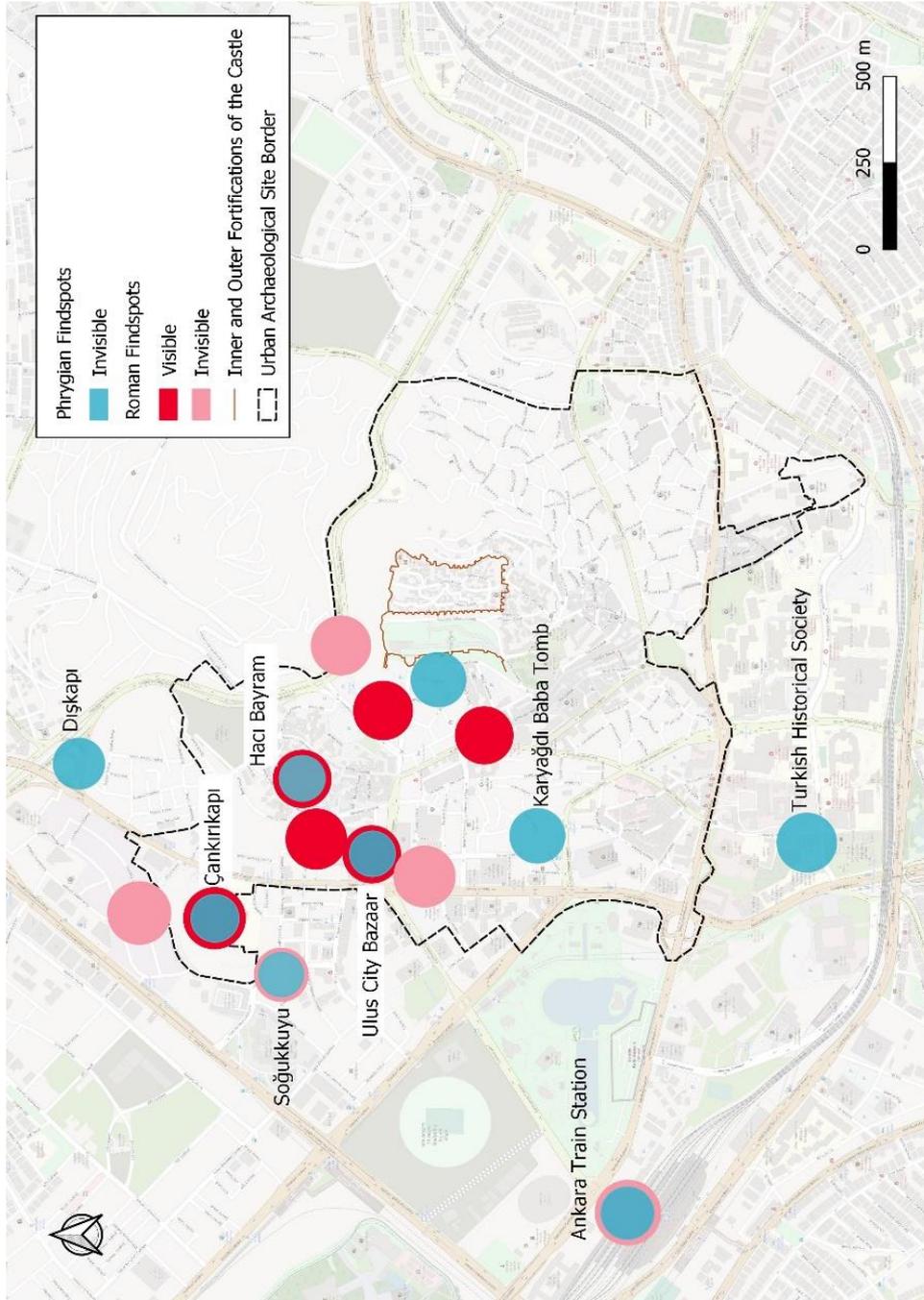
<sup>66</sup> Dalman *et al.*, 1932; Mamboury 1933; Koşay 1935; Akok and Peñçe 1941; Temizsoy and Demirdelen, 1999; Aydın *et al.*, 2005; Aydın, Zarsarsız and Demirci 2010; Kadıoğlu *et al.*, 2011, Aydın and Zoroğlu 2016.

Table 3 (Continued)

Chamber tomb with dromos	Çankırıkapı Street No: 46	Anatolian Civilizations Museum (1993) Kadioğlu <i>et al.</i> (2011)	3 <sup>rd</sup> c. AD
Roman tomb	Balgat, Ziyabey Street	Anatolian Civilizations Museum (1998)	1 <sup>st</sup> -2 <sup>nd</sup> c. AD
Roman tomb ( <i>hypogeum</i> )	Maltepe, Gazi University Faculty of Engineering and Architecture	Anatolian Civilizations Museum (2009)	3 <sup>rd</sup> -7 <sup>th</sup> c. AD

The created finds' table was later mapped through *QGIS* by indicating the locations and the information about their visibility (Figure 34). While spatializing the findspots for Phrygian and Roman heritage, this mapping also reveals the significant overlap areas. Thus, mapping helped to display the historical landscape's complex multi-layered nature. This mapping is fundamental as it lays the groundwork for the following study of integrating this information into a GIS-based web platform through *ArcGIS StoryMaps*. Therefore, various locations can be recognized as settlement areas during both the Phrygian and Roman periods. In the map, the urban archaeological site border is also indicated to understand the boundaries of the urban archaeological site. Thereby, it can be seen that many other locations carry archaeological information that lies beyond the urban archaeological site.

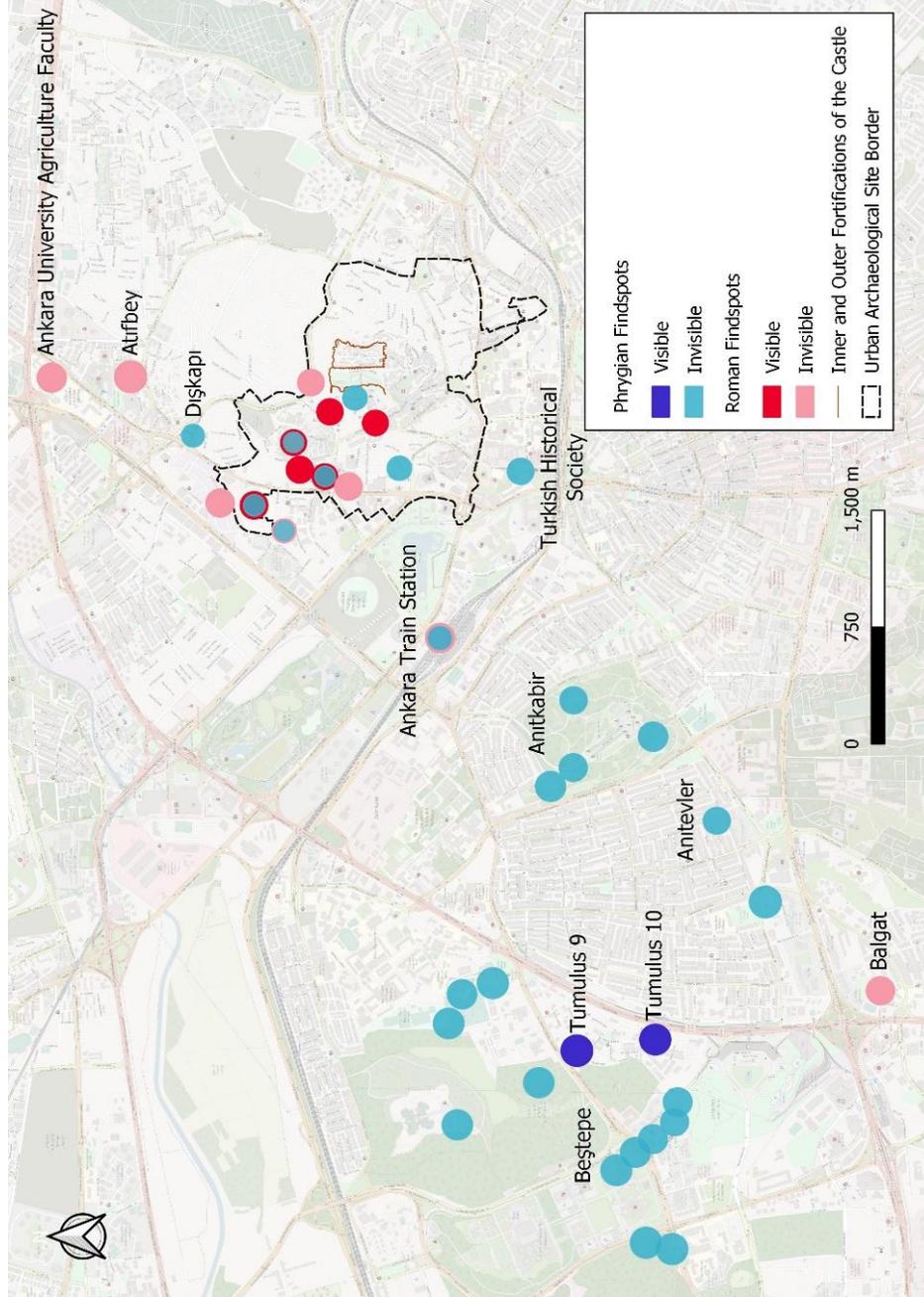
Moreover, this mapping gives important insights into locations not directly recognized as historical spots. With this spatial information, spots that do not currently carry visible heritage can still provide crucial information about the histories of previous cultures by integrating mapping and other digitalization methods. Moreover, this information can be shared with the public to create consciousness about the history of the landscape. How this information can be conveyed to the larger public in an understandable and interactive way and how this spatialization with its data can be used for further investigation are discussed further in continuation.



**Figure 34.** Find areas of the Phrygian and Roman remains in and around Ulus; map showing the locations indicated in the tables (map based on Kadiođlu *et al.*, 2011, Plan 1-2; Alanyalı Aral, 2017, Fig. 2).

According to this created map, the revealed shared locations of Phrygian and Roman period heritage spots are: Ankara Train Station, Soğukkuyu, Çankırıkapı Hill, Ullus City Bazaar, and Hacı Bayram Hill. In a broader view, it is seen that the Phrygian and Roman remains are not only found in Ulus but also in other places in central Ankara. To amplify the informative background and show how extensive the study

can go further, those other places of discovery are also mapped below (Figure 35). The map locations and names correspond to the previously specified spots in tables where the heritage finds are located.



**Figure 35.** Find areas of the Phrygian and Roman finds in central Ankara, map showing the locations indicated in the tables (map based on Tuna 2007, 100; Kadioğlu *et al.*, 2011, Plan 1-2; Alanyalı Aral, 2017, Fig. 2).<sup>67</sup>

<sup>67</sup> As this study focuses only on the Western tumuli in central Ankara and the Northern tumuli that lies outside the scope of the focus area, is not mapped and discussed further. (Chantre, 1989; Alanyalı Aral, 2017; Alanyalı Aral *et al.*, 2023)

The organized, informative mapping of the collected data on *QGIS* can be used as a base map for further exploration, and with additions that will be explained below, the archaeological and cultural mapping of Ankara can be embedded into this idea. Respectively, the Phrygian and Roman period find maps are overlapped to show the common settlement areas and the areas where both layers can be mutually studied and explored. Once all the data is mapped and hence became visible, related tour routes are created to transfer the information about these areas to the public in an easier and more understandable way. From the tour route, Hacı Bayram mound, which features as one of the overlapped zones, is chosen as a focus example to screen in an easy-to-follow and multifunctional mobile application with the aim to engage a wider audience with archaeological information.

#### **4.4. Interactive Mapping with *StoryMaps*: Ulus Heritage Tour and Case Study on Hacı Bayram Hill**

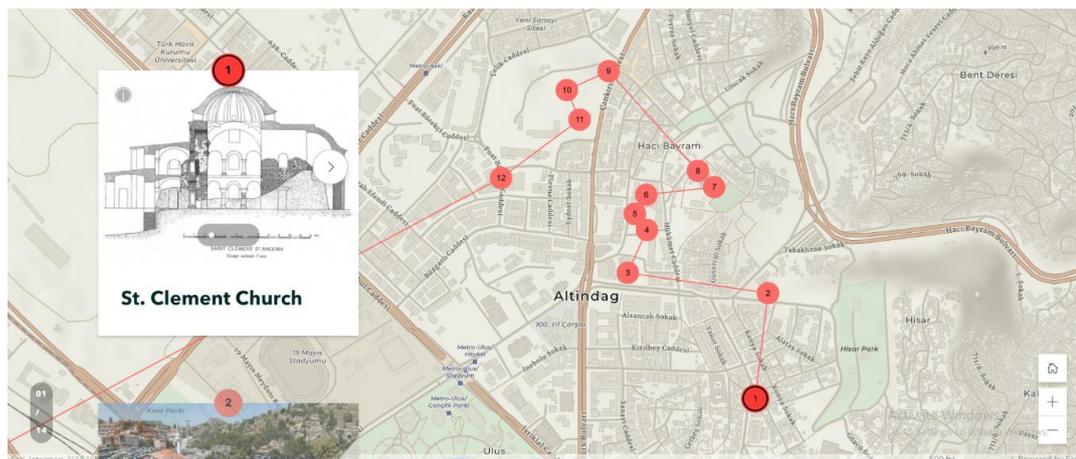
This section shows some possibilities of how GIS can be used for public archaeology and heritage conservation by an example from discovered heritage in Ulus. Within the context of the thesis, the chosen approach with GIS aims to narrate the site's story to engage the local community and visitors. The primary goal of this approach is to provide the public with comprehensive information that will foster a deeper connection with the site. As previously emphasized, cultivating awareness of heritage conservation does not rely solely on archaeological data; rather, it is linked with elevating interaction and illustrating the site's rich, shared history over the centuries.

The proposed interactive and visual platform is considered a suitable instrument for this purpose. While recognizing that such a platform's functionality will require further development and integration with the site to reach its full potential, the thesis aims to underline the importance of integrating the heritage layers and, hence, experiencing shared history and suggests potential strategies to address the issue.

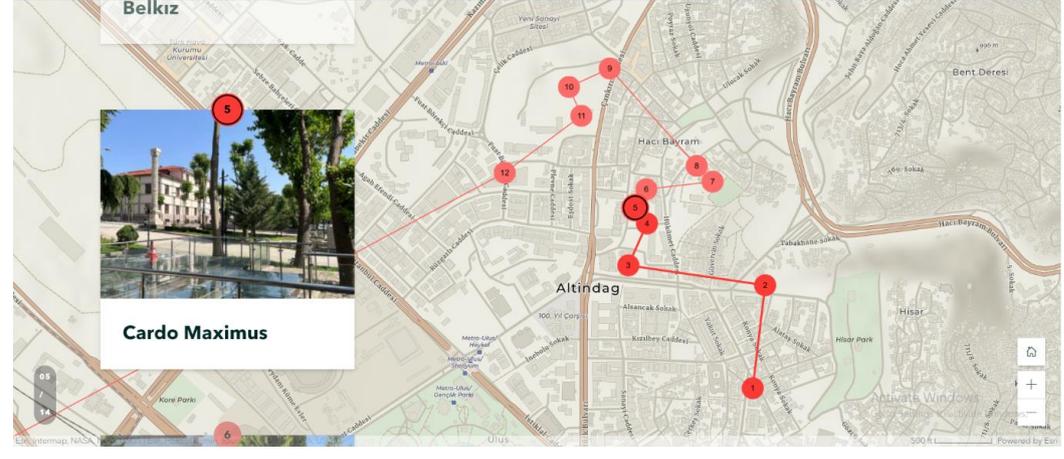
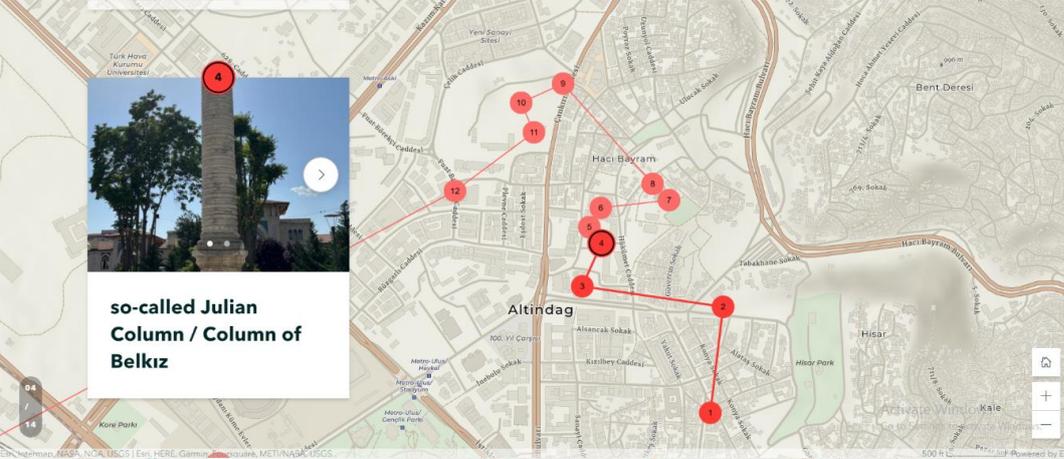
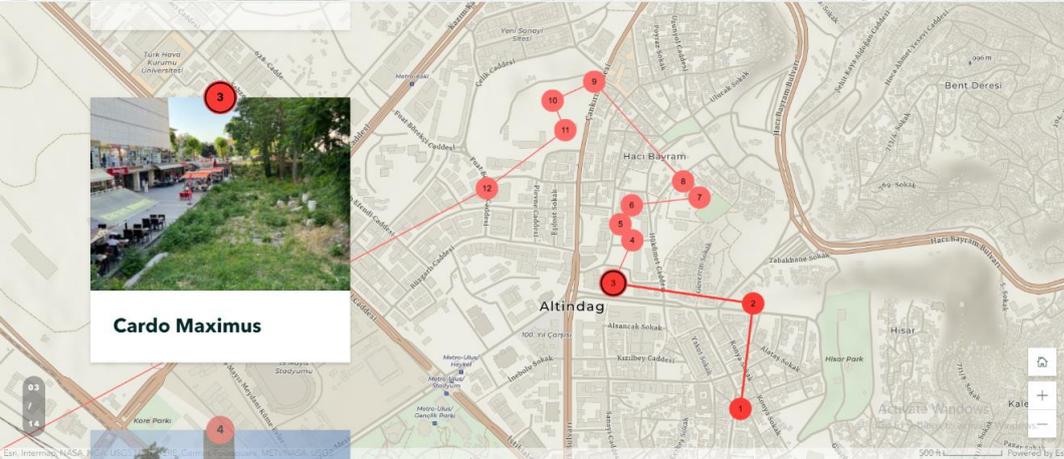
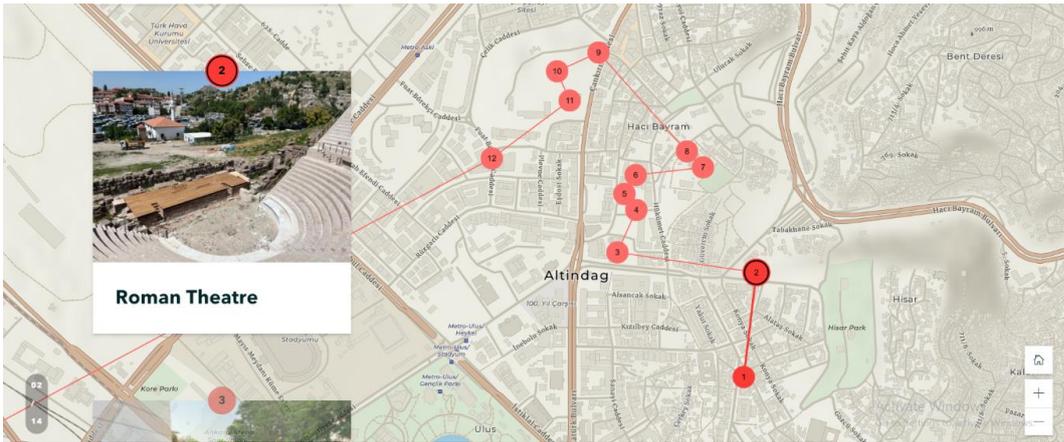
For this purpose, first, an interactive visitor tour was created through *ArcGIS Story Maps*. The route includes visible Phrygian and Roman heritage. The main focus of

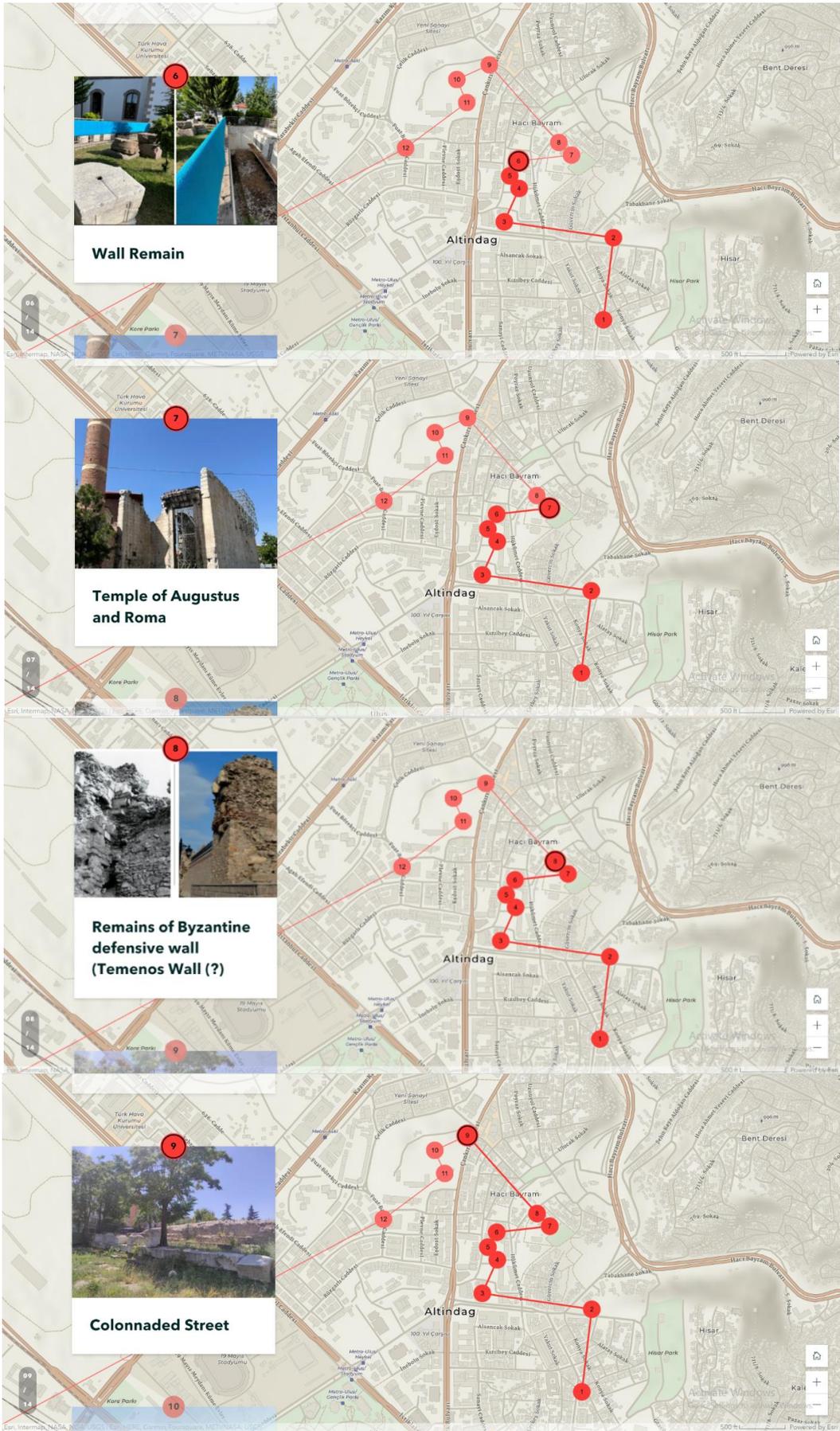
this tour is to indicate the important heritage points where the user can follow up on the multi-media information while having a more holistic view of the focused heritage.

The *Visible Phrygian and Roman Heritage Tour*<sup>68</sup> route has 14 visiting stations (Figure 36). Considering Ankara Castle as the highlight of the city, the tour starts from the closest point to the castle and include St. Clement Church, Roman theatre, *Cardo Maximus*, Julian Column (Column of Belkız), wall remain, Temple of Augustus and Roma, Temenos wall, Roman bath, colonnaded street, Byzantine tomb, 3<sup>rd</sup> century city wall remain, and the Phrygian tumuli 9 and 10. Each heritage item is enhanced with images taken by the author, as well as those gathered from the publications. More images, sounds, gifs, and related links can also be added into the given core image and information package. The platform has many varieties of base maps that can be chosen, depending on the focus of the subject. In this study, a territory-based map is chosen. The route is designed, with a practical approach, that is, to comprehend the utility and accessibility of GIS for the general public, tourists, and travelers. As telling and writing the “story” of a place requires more detailed and multi-disciplinary study, this exemplary route only focuses on the studied locations with contributions of images. Below, are representational instances from the tour.



<sup>68</sup> The *StoryMap* can be reached through the link:  
<https://storymaps.arcgis.com/stories/97438f2b22984505afc70c6e5c3b33ae>





**Wall Remain**



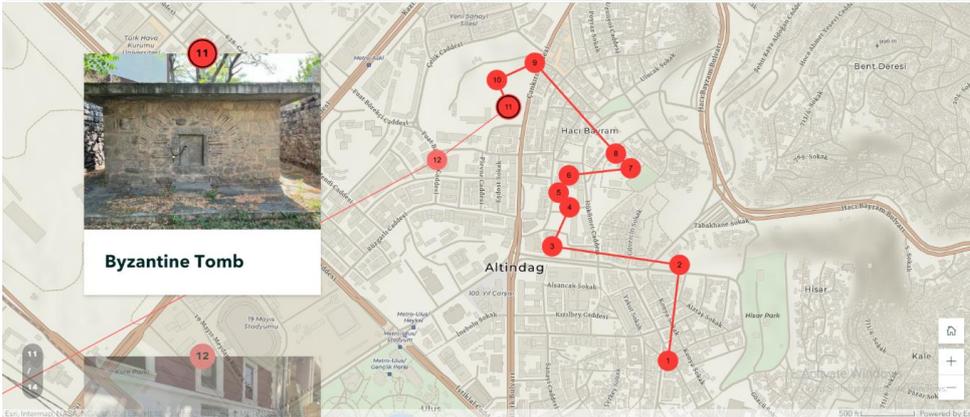
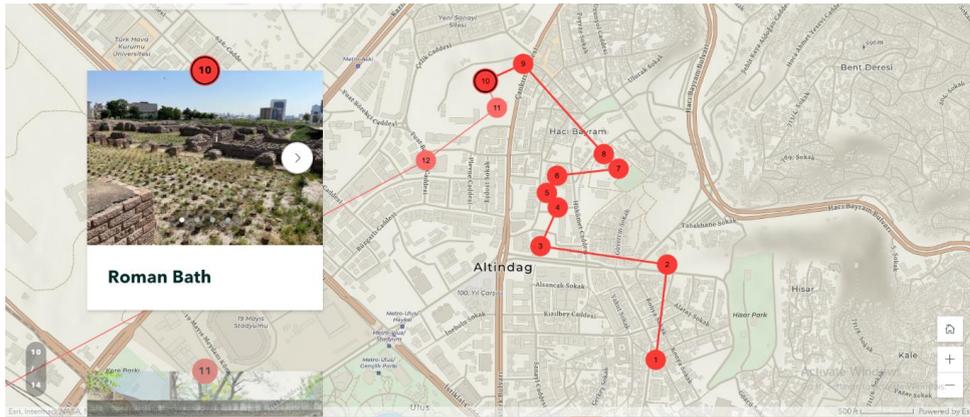
**Temple of Augustus and Roma**



**Remains of Byzantine defensive wall (Temenos Wall ?)**



**Colonnaded Street**

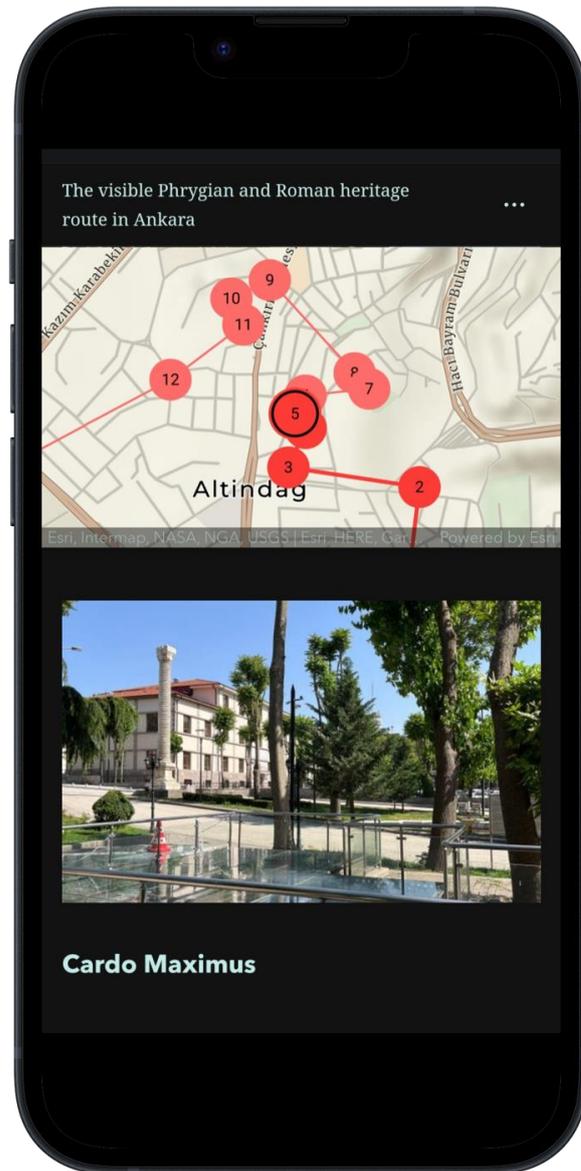




**Figure 36.** *The Visible Phrygian and Roman Heritage Tour*, hypothetical visitor route created by *ArcGIS StoryMaps*.

As seen in the route, only two visible Phrygian structures remain in the city, while the Roman heritage, although also facing significant threats, has more essence represented with eleven visible structures. A digitally accessible archaeological heritage tour is a particularly significant medium for public outreach, because many of these historical structures are not accessible via common navigation applications. Consequently, accessing comprehensive information about the Phrygian and Roman heritage across the city necessitates detailed research and in-depth reading. This route, in this sense, gives crucial insights into all heritage features, as well as the above-mentioned digitalization projects about Ankara. For example, as Güner (2020) states, the Roman tombs that were moved to the Roman Baths lack adequate documentation. Similarly, the Byzantine tomb found near Ankara Train Station and moved to the Bath site in 1930, “become hidden in the narrative of the site” (Güner, 2020: 8). The implementation of the *ArcGIS StoryMap* platform, thus, facilitates the process of locating such less documented sites. Furthermore, it provides the history of Ankara in a more engaging fashion, transcending the bounds of conventional, scientific terminology. It, in addition, introduces users the points of interest and structures that may have remained previously unknown. The platform guides individuals toward intended destinations and extends the understanding of the culture, historical period, and broader heritage associated with that particular site. By offering information and showing the interrelation of places, it brings a sense of heritage awareness for a diverse audience, fostering a richer understanding of the sites. To increase public outreach for heritage, digital guided tours can be offered

through a mobile application that can be reached with a QR code on the informative panel on the site. Thus, heritage-related information would become easy to access, making the user curious about other heritage spots shown in the route. The view of *the Visible Phrygian and Roman Heritage Tour*, the hypothetical route created by ArcGIS StoryMaps on mobile application is shown below (Figures 37).



**Figure 37.** View of *the Visible Phrygian and Roman Heritage Tour* on mobile application, showing Cardo Maximus.

From this route, the Hacı Bayram Hill station, is presented with a further focus to show how for each station, more information can be added and contextualized through *ArcGIS StoryMaps*. Hacı Bayram Hill which is a multi-layered area, as well

as a religiously significant and sacred site in Ankara, serves as a good case for this purpose.

The Hacı Bayram district is always a crowded and frequented neighborhood, thanks to the tomb of Hacı Bayram, a much-respected Anatolian saint. Next to his mosque and tomb is the Temple of Augustus and Rome (Figure 38), which in comparison, experiences limited public interaction and attention. Mitchell (2008: 6) notes that only a small fraction of Ankara's residents and visitors have visited the temple, and an even smaller number comprehend its significance. The public is even less informed about the Phrygian presence in the same site. The co-existence of various cultures, starting from the Phrygians, and the multicultural and multi-religious character of the Hacı Bayram district is emphasized on the UNESCO website:

From the earliest periods, Hacı Bayram area had been the Acropolis of Ankara. Starting from 8<sup>th</sup> century BC., the place has been an acropolis, the sacred places of Christian and Muslim people were built on top or near to each other. The most important piece that is apparent, is the Temple of Augustus from the Roman Period dated to 2<sup>nd</sup> century BC, which was constructed after Galatia was conquered by Emperor Augustus. Today, some other archaeological remains are over ground. Besides, there must be many more buried underground.<sup>69</sup>



**Figure 38.** Temple of Augustus and Roma and Hacı Bayram Veli Mosque (Author, June 2023)

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<sup>69</sup> <https://whc.unesco.org/en/tentativelists/6124/>

The first known settlement on Ulus started with Phrygians and dates to the 8<sup>th</sup> century BC. (Kadioğlu *et al.*, 2011: 13). In 1938, in the excavation carried out to the south-east of the Temple of Augustus and Roma by Hamit Koşay, it was determined that the natural elevation of Hacı Bayram Hill was about 6-7 meters below the current elevation. A Phrygian settlement was identified, starting at a depth of 2.80-3.00 meters from the surface and extending approximately 4 meters down to the main soil at a depth of -6.60 meters (Özgüç, 1946: 575-576; Alanyalı Aral, 2017: 26). The excavation revealed remains of Phrygian artifacts belonging to the Early Phrygian and Late Phrygian periods (Özgüç, 1946: 576). Furthermore, as the entrance of the temple is not on the east, as in other Hellenistic temples, but to the west, it was suggested that the temple belonged to a period earlier than the Hellenistic period (Akurgal, 1990: 17). The Kybele relief found on the *orthostates*, furthermore indicated that there was likely a sacred place for Kybele in Ankara (Buluç 1981). Therefore, it is argued that there could have been a Temple of Kybele and Men in this location, before the Temple of Augustus and Roma (Buluç, 1981, Eyice 1996: 244, Aydın *et al.*, 2005: 86, Erdoğan *et al.*, 2008). However, there is no conclusive evidence neither for a previously built temple nor for an accurate dating of the structure (Cooke, 1998: 34). Yet, the presence of a Phrygian settlement in the area is evidenced by such finds as the Sphinx relief found 200 meters east of the temple, on Ahi Yakup Street in 1931 (Buluç, 1981; Buluç, 1988). Moreover, the 2D ground-penetrating radar (GPR) used in the 2010 survey of Kadioğlu to determine the buried archaeological remains beneath the Temple of Augustus and Roma revealed: “very complex and deep wall structures were visualized with any depth range inside the *cella* of the Temple of Augustus” (Kadioğlu, 2010: 397). A further excavation could not be done to ensure the finds due to the physically sensitive status of the *cella*.

The first archaeological investigation of the temple was made in 1861 by Georges Perrot, Edmond Guillaume, and Jules Delbet. The first scientific excavations of the Augustus Temple were conducted by D. Krencker in 1926, with contributions from O. Heck and M. Schede (Kadioğlu *et al.*, 2011: 82). The report which was published in 1936, is the most comprehensive publication on the temple at the time, and included nearly a complete plan of the structure (Kadioğlu *et al.*, 2011: 82). The

building fragments represented different styles and hence the dating of the building could not be securely done. Krencker and Schede (1936) dated it to the Hellenistic period, while others, considering the political testament, “*Res Gestae Divi Augusti*” inscription found on either side of the wall, attributed it to the Late Augustan / Early Tiberian Period (Kadioğlu *et al.*, 2011: 90, 93). According to Kadioğlu *et al.* (2011: 91-92; 97) it was likely to have been designed and started to be constructed in the Augustan period and was completed in their early reign of Tiberius or even before the death of Augustus. In its Roman phase, it was a Corinthian temple dedicated to Augustus and Roma (Kadioğlu *et al.*, 2011: 91-92).

The temple is also called as *Monumentum Ancyranum* due to the Latin *Res Gestae Divi Augusti* (the Achievements of the Deified Augustus) inscription. Three Galatian cities, Ancyra, Apollonia, and Antioch in Pisidia are known to have displayed this inscription and hence were linked to represent an “imperial cult” (Güven, 1998). The Greek version, which is not an exact translation of the Latin version, is also carved on the exterior of the south *cella* (Mitchell, 2008: 34; Kadioğlu *et al.*, 2011, 96).<sup>70</sup> This bilingual inscription is a unique historical document as it is the only surviving and almost complete copy of *Res Gestae Divi Augusti* (Serin, 2018: 340). This inscription was added later after the death of Augustus in 14 AD (Kadioğlu *et al.*, 2011: 97).

The Roman Empire's transition to Christianity happened during the fourth century AD, but converting temples into churches did not become commonplace until the fifth or sixth centuries. It is likely that the transformation of the Ankara temple into a church occurred during this period (Mitchell 2008: 29). Key pieces of evidence supporting this conversion include Christian inscriptions, such as the two found on the north interior wall of the *cella*, along with others on the exterior south wall. Additionally, the presence of carved crosses and the reconfiguration of the east wall of the *cella* to incorporate the former *opisthodomos* area serve as primary indicators of this conversion. During the transformation to the church, the pavement of the *cella* was removed, the floor was lowered to level it with *pronaos*, and three windows were punched on the south-east wall (Foss, 1977: 65; Serin, 2018: 342, 344).

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<sup>70</sup> It is supposed that the letters of *Res Gestae Divi Augusti* were red colored (Peschlöw, 2015: 269).

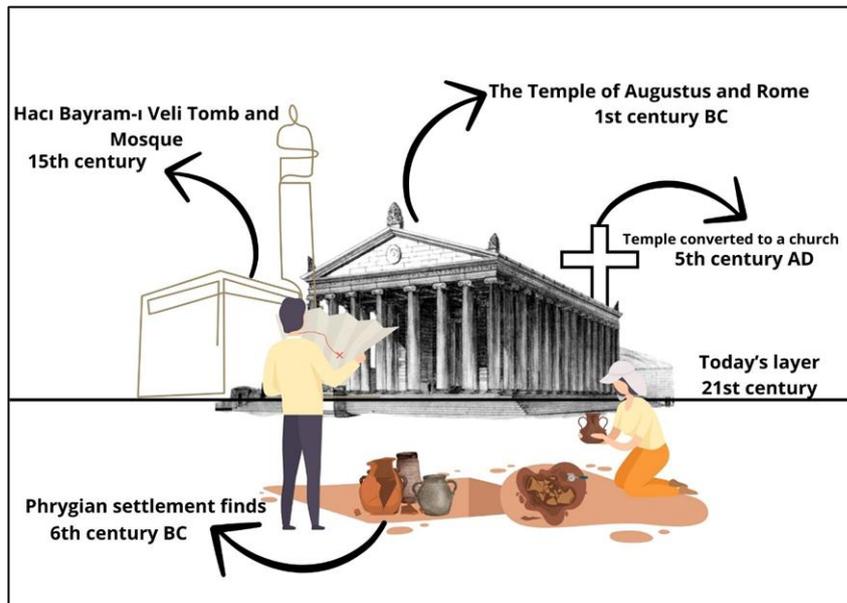
In the fifteenth century, Hacı Bayram Veli Mosque was constructed next to the temple, which shared the southwest corner with the Temple of Augustus and Roma. Dernschwam (1992) mentions that there were ten mud brick rooms for hodjas of Hacı Bayram Mosque in the temple (Dernschwam, 1992: 187-193). Evliya Çelebi states that 300 dervishes lived in this complex around 1640 (Kadıoğlu *et al.*, 2011: 80). The area, known as Hacı Bayram Square, and which was re-arranged between 1989-1994, is a religious center of Ankara since then. Hacı Bayram Mosque and Temple of Augustus and Roma were registered as monuments in 1972. The area of Hacı Bayram Square was designated as 1<sup>st</sup> Degree Archaeological Site in 1980;<sup>71</sup> and an urban conservation area in 2008 (Özçakır *et al.*, 2017). At present, the Temple of Augustus and Roma is closed to the public and can be only seen from a distance. The temple's inaccessibility prevents visitors from engaging with the monument to explore its details, which justifies the employment of alternative means of interaction.

Meanwhile, the declaration of Law No. 5366, “Renovating, Conserving and Actively Using Dilapidated Historical and Cultural Immovable Assets”, paved the way for some historical places to be identified as renewal areas. Ankara Historical City Center, Ulus, is one of the first ones declared a renewal area on August 8, 2005 (Özçakır *et al.*, 2017: 245). In 2012, a renovation project was prepared for the Hacı Bayram Square (*Hacı Bayram-I Veli Camii ve Çevresi Düzenleme Projesi*) by the municipality. This renovation changed area's focus and influenced the temple's perception (Serin, 2018: 376). The religious and Ottoman layers of the district, hence the Islamic character, became emphasized, while the temple was ignored as if it were an ordinary structure (Özçakır *et al.*, 2017: 249). A park and a decorative pool are made next to the temple, and the surrounding old housing fabric is renovated. The adverse effects of the pool water on the ancient stones of the temple were highly addressed and eliminated finally by the Ankara Regional Board for the Protection of Culture and Assets (*Ankara Kültür ve Varlıklarını Koruma Bölge Kurulu*) on 24/12/2020. The pool was renovated as a dry pool in 2022. The open-air arrangement in the Hacı Bayram square left the Temple of Augustus and Roma isolated in the urban space. Moreover, the latest interventions in the area, which include many

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<sup>71</sup> Decision no. A-2167 (of 12.4.1980) by the High Council of Immovable Antiquities and Monuments (*Gayrimenkul Eski Eserler ve Anıtlar Yüksek Kurulu*).

physical forces, such as the construction of a shopping area and parking facilities, harmed the character of the mound and reduced the capacity of possible further archaeological investigations on the site (Alpan and Kumkale Açıkgöz, 2017; Serin, 2018: 376). The temple is currently introduced to the public through the informational panels placed in front of it. At the same time these panels provide insights into the temple's history and the translation of the *Res Gestae Divi Augusti* inscription, their presentation and positioning fall short of creating a truly immersive experience for understanding the site. The panels contain didactic information and the translation of the inscription written in a small, hard-to-follow text. *Bellek Ankara* project contributed to the presentation of the temple to a certain extent by placing another, modern and informative panel more recently. Displaying a complex history and cultural coexistence the Temple of Augustus and Roma is a significant heritage site for Ankara. In this respect, all the layers in the context should be presented more efficiently. For his purpose, a modest digital story platform, open to additional information, is designed by using *StoryMap from ArcGIS*. Through this platform, it is aimed to present the cultural diversity in the site and the multicultural character of Hacı Bayram Hill. The illustration below, represents the imagined understanding of co-existence provided to the public via a digital platform (Figure 39).

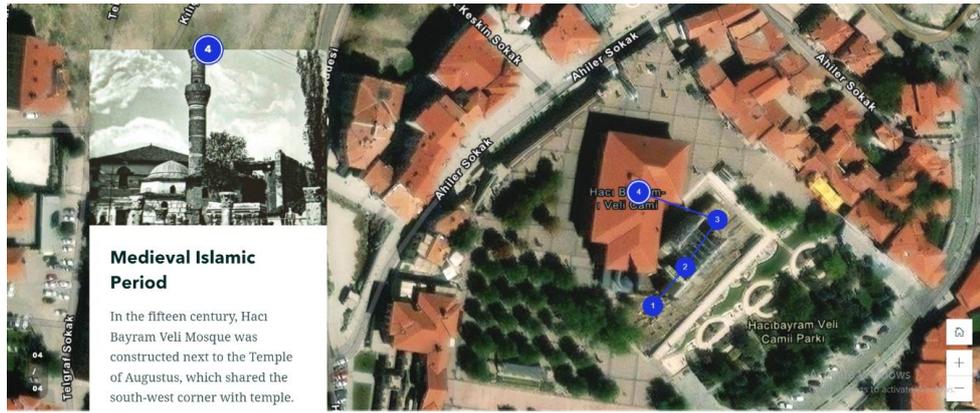


**Figure 39.** Illustration of coexistence of cohabitation of diverse cultures in Hacı Bayram Hill. (Temple reconstruction adapted from Krencker and Schede 1936, retrieved from Mitchell, 2008, Fig. 14)

The four cultural periods revealed on the hill are shown and explained through *StoryMaps*<sup>72</sup>. For this part of the *StoryMap* a 3D base map was used to show how the platform is seen with different base maps, to show the reality of the place and to create an actual image. The information used in the *StoryMaps* is limited to the scope given in the thesis. Images integrated into the platform comprise those captured by the author and those acquired from the referenced sources. An exhaustive reference list is provided, while the screenshots extracted from the *ArcGIS StoryMaps*, which illustrate the different phases of the case study, are presented below (Figure 40).



<sup>72</sup> The StoryMap can be reached from: <https://storymaps.arcgis.com/stories/cc50a99c74ed4db3b8094bfcbb357a8>



**Figure 40.** Exploring the multi-layeredness of the site with the example of Hacı Bayram Hill, created by *ArcGIS StoryMaps*.

The numbered points correspond to the four layers under investigation: the Phrygian, Roman, Late Roman, and medieval Islamic periods. Locations are indicated in reference to the literature review and placements of the remains. This sequencing, while giving further information about the site also informs the user about the previously unrepresented layers that the site holds. Therefore, it contextualizes the site in a holistic way and provide awareness about its multicultural and multi-layered character.

Similar studies can be conducted for the overlapping areas illustrated in the created digital maps above (Figures 34-35), such as Ankara Train Station, Soğukkuyu, Çankırıkapı Hill, and Ulus City Bazaar. Creating a dedicated *StoryMap* for each site, focusing on its multi-layered character, would facilitate an in-depth exploration of these heritage spots. The users could experience new discoveries about the city's rich history by exploring the additional routes designed to uncover the invisible heritage of Ankara.

Furthermore, developing a thematic series within each *StoryMap* allows to present diverse narratives, each with a distinct focus. Consequently, this framework supports the exploration of extensive datasets through an interconnected collection of stories. By consolidating previously established routes and work for each site into a unified *StoryMap* under various themes, a comprehensive narrative for Ankara's Phrygian and Roman heritage can be created, highlighting cultural diversity and heritage richness. This systematic arrangement, designed to enhance the flow of information, can well be implemented on-site by integrating QR codes. This approach ensures that

visitors receive concise and easily accessible information about the heritage of the spot through a compact and user-friendly platform.

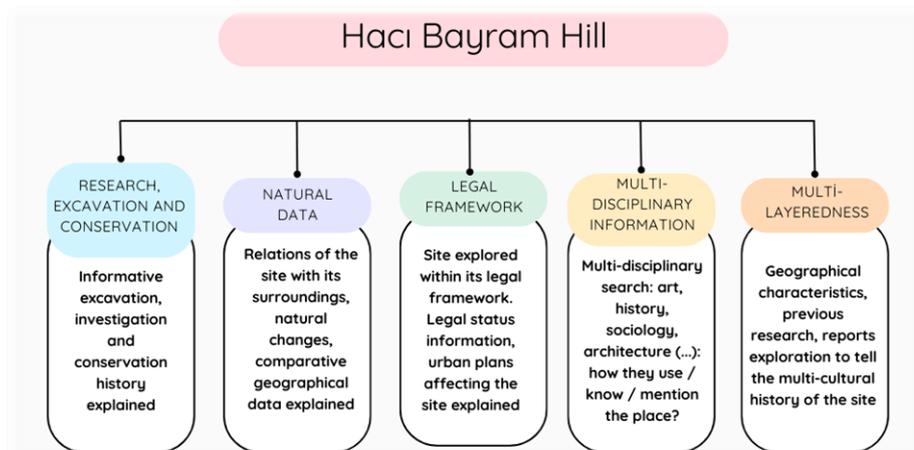
Hence, particular features can contribute to design a comprehensive and regularly updated cultural heritage platform, considering that *ArcGIS StoryMaps* is an integrated tool for developing a more inclusive web-based GIS heritage platform. Firstly, by utilizing GIS as the basis of the platform it becomes possible to use and adopt various maps, or include them to the platform. For example, the geographical maps retrieved from Google Earth, Google Maps, and the General Directorate of Mapping can be utilized. In Google Earth, the map view can be traced until 1985 for Ankara. This can lead to observing geographical changes over the last 37 years. It also helps to see the locations of new structures, constructed roads, changes in the residential fabric, and natural and structural changes around the heritage places. Therefore, an analysis of the period between 1985 and 2023 can be made with this data.

The main roads in the Ulus district can be traced until 2014 in Google Maps, by using Street View, which gives information on the structural changes in a location. In addition, the General Directorate of Mapping provides geodesic, topographic, raster, and height maps, which are useful maps to explore the heritage contexts extensively. All the maps taken from different sources can well be exported to a web-based GIS platform by adding the possibility to change the base map with the addition of 3D view, street view, and historical mapping.

It is crucial to include the component of legal decisions regarding heritage sites and associated urban plans and projects to the platform. This sort of inclusion will enable the platform to keep pace with the evolving nature of heritage and stay informed of the latest legal developments. As previously mentioned, the dynamic nature of the legal framework poses challenges in tracking the legal status of a location. Including legal information on the platform will facilitate a comprehensive understanding of historical changes and their impact on the heritage.

Another promising feature of the web-based platform is that it can allow individuals to share comments, personal connections with historical sites, and stories related to such places. Since people's relationships, experiences, and memories with these

locations help transform these sites into living spaces, sharing such narratives on a broader platform holds great significance. Including such individual contribution will amplify public outreach and plays a crucial role in understanding the imprints that a cultural space carries and/or leaves behind. Consequently, the data about the longstanding connection of residents with heritage places and how these relationships have evolved in time can be added as a new section to the platform. For instance, during my site visits, I encountered people who used to inhabit the 3<sup>rd</sup> century city walls until eight years ago, when they were closed to public use. One resident stated that: "This area was open until recently. The road leads to Ankara Castle. When we were kids, we used to play here. We were scared to go inside, but we still played. As a teenager, we ventured in to have some drinks." While this narrative illustrates on the one hand, how the archaeological site was used for inappropriate activities that could potentially harm the heritage, on the other it highlights that the individuals were aware of the existence of the walls, which were part of their everyday lives. Similar stories, taken collectively, will contribute to forming a shared memory that will evolve alongside the heritage. Therefore, ensuring that city residents hear and understand others' experiences is a crucial aspect. Taking into consideration the multi-dimensional task of cultural heritage protection, some ideas can be suggested to show what can be included in a web-based GIS heritage platform. Taking the Hacı Bayram Hill example, some concepts in this regard are demonstrated in the graphic below (Figure 41). The chart displays various categories of information that can significantly contribute to heritage registration.



**Figure 41.** Some features that a web-based GIS heritage platform on Hacı Bayram Hill can include

In summary, this study, centering on the utilization of digital platforms, and in particular mapping, for the effective communication of cultural heritage within urban environments, has proposed concepts and methods to establish a web-based and interactive cultural heritage infrastructure. While the discourse predominantly revolves around urban archaeology, the creation of such a platform will serve as a foundational asset not solely for the preservation and understanding of cultural heritage within urban landscapes but also for enhancing accessibility to heritage in both urban and rural domains. Starting from data collection and its representation, this initiative study promises a more organized collection of information on sites and structures, encompassing visible cultural heritage and the often-overlooked elements that require in-depth research for comprehension. Encompassing social, cultural, natural, architectural, and diverse facets, a multi-dimensional, expandable, and inclusive digital cultural heritage platform will act as valuable medium for heritage conservation and management, also contributing to raising public awareness.

## **CHAPTER 5**

### **CONCLUSION**

Cultural heritage often faces the risk of harm or destruction due to natural or human factors. Moreover, the lack of conservation methods and unsuitable urban plans negatively affect the visibility and representation of these cultural structures. Digital recording helps sustain archaeological heritage sites' history in both rural and urban contexts. Making heritage visually accessible via online platforms of information repositories also maintains a collective memory. The concept of urban archaeology, which became widely practiced in the early 1960s, defines a study area through which heritage becomes a domain shared with the public. As such, heritage also becomes protected by the public's awareness and engagement in various ways. Thus, while cultivating public interest starting from the inception of an archaeological project and making excavation and survey processes transparent through exhibitions may prevent vandalism and detrimental construction, as Bahn (1999: 126) states, one of the foremost steps towards heritage protection is sustaining public awareness and involvement.

In this respect, this thesis argued that a comprehensive digital mapping platform dedicated to heritage can be a sustainable channel for conserving heritage and reaching a broader audience. Building upon this premise, it emphasized the significance of digitally archiving the data of all archaeological layers, considering many heritage features. Centralizing excavation and artifact data, which are traditionally maintained separately, through digital tools, is highly advantageous for urban archaeology and future research. Within this framework, the study delved into the intersection of urban, digital, and public archaeology and addressed heritage conservation. Recognizing the potential of Geographic Information Systems (GIS), particularly in urban contexts, it produced preliminary digital maps of the selected cultural layers of Ankara and a pilot study of digital tours centered on the Ulus area and its environs.

Ankara's multicultural history makes it a perfect context for addressing urban and digital archaeology. Mainly focusing on the Phrygian and Roman periods, the study used GIS and mapping applications to prepare findspots maps focusing on the overlapping places and cultural continuities. From these maps, digital routes are created for the public to use by web platforms and mobile applications. Seeking to create a base study to develop a web-based GIS cultural heritage platform, it got inspiration from the existing works to demonstrate what types of content could be included in this platform and how it could enhance the understanding and integration of heritage for public outreach.

The tour route prepared by *ArcGIS StoryMaps*, combines the Phrygian and Roman historical layers along with their respective heritage, and as such stands as a novel concept, distinct from the prior studies that did not cover the overlapping spots for public exposure.<sup>73</sup> While the existing inventories acknowledge the Phrygian heritage, they often lack detailed information about structures and artifacts and their locations, failing to connect these findings with other cultural layers and potential settlement areas. Therefore, the more comprehensive inclusion of the Phrygian layer in this study, which is almost completely hidden in the landscape of the city, provides a remarkable opportunity to draw attention to and raise awareness of the Phrygian heritage and its conservation.

Furthermore, with the necessary additions to the proposed sections, the platform can provide specific details about the current location of archaeological remains, especially those not visible today. For example, Phrygian orthostats and a large number of pottery and small finds are on display in the Museum of Anatolian Civilizations. Similarly, finds from the Roman period are exhibited in the section of the museum dedicated to Ankara. When this information is displayed in the original locations of the finds through a digital platform, it can serve as an informative tool about the historical significance of the sites and also encourage people to visit the city museum. This integration will ultimately establish a link between the historic sites and the museum collections and enrich the overall experience for visitors seeking a deeper understanding of Ankara's heritage.

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<sup>73</sup> Considering studies searched within the literature review.

People have diverse priorities in terms of the depth and level of cultural and historical knowledge they prefer to accumulate. As seen in the example of the Hacı Bayram Hill, a place that accommodates a variety of cultures, can be experienced only from one cultural aspect. A digital heritage platform can ease and motivate a holistic understanding of the heritage place and thus assist individuals to develop a broader knowledge. The created *Visible Phrygian and Roman Heritage Tour* route, indeed, offers a distinctive approach to reveal the heritage, considering the fact that many heritage assets highlighted in the tour remain unexplored in navigation apps, general guidebooks, and popular tourism websites dedicated to Ankara.

The proposed route and its narrative are inherently limited to the literature studied for this thesis and to the author's perspective. As *ArcGIS StoryMaps* is a tool of storytelling, should include a collaborative narrative. The study, in this sense, did not delve into creating a site-specific narrative; instead, it focused on the use and usefulness of the platform. Therefore, the storytelling part is deliberately left out of the scope. On the other hand, the platform's ability to embrace different sections welcomes all sorts of stories which can be included to draw different perspectives and compose narratives of the site.

The widespread adoption of such a platform will prove invaluable for public outreach and engagement, fostering a deeper understanding of any particular site among the general public. This digital tool can be expanded to encompass additional layers for Ulus, delving into periods not covered in the current study, such as the medieval Islamic, Islamic, Ottoman, and Republican eras. Furthermore, a historically thorough exploration of Ankara can include the Hittite layer, contributing to a more holistic representation of the city's historical fabric.

Potential avenues for further research may involve:

Extending similar explorations of layered histories through *Story Maps* within *ArcGIS* or other GIS-related platforms in different locations identified in this study and further locations not included in this study.

Embedding a similar GIS platform to a website to create a comprehensive web-based GIS heritage platform for Ankara, that will incorporate all the cultural layers.

Integrate this platform into a mobile application, featuring QR codes on the information boards on the site that link visitors to the interactive platform, and offer an in-depth multimedia information.

Enabling visitor interaction by incorporating comments and content-sharing features within the application, hence, enhancing the overall experience of engaging with the site.

The challenge of this study lies in the task of extensive data collection and in the importance of creating a platform with a balanced and narrative-focused approach, acknowledging that all historical information should be treated with equal significance. Therefore, considering the multi-faceted nature of such a study, it is essential to have a collaboration of professionals from various disciplines to produce objective, historically accurate, and adaptable content.

The case study demonstrated, albeit in a modest scope, that the data and the historical significance of a location can be effectively recorded, shared, and enriched through a collaborative and multi-disciplinary approach. Digitally integrating various types of information and aiming for public engagement, it draws an introductory framework for a multi-disciplinary approach to heritage conservation. Thus, through the use of GIS-based digital maps, it presented a comprehensive, developmental and educational inventory idea aimed at transferring the existence and knowledge of archaeological, social, cultural and historical data to future generations.

## REFERENCES

- Agapiou, A. and Lysandrou, V. (2015). Remote Sensing Archaeology: Tracking and Mapping Evolution in European Scientific Literature from 1999 to 2015. *Journal of Archaeological Science: Reports*, 4, pp. 192–200. <https://doi.org/https://doi.org/10.1016/j.jasrep.2015.09.010>
- Ahunbay, Z. (2010). Arkeolojik Alanlarda Koruma Sorunları Kuramsal ve Yasal Açılardan Değerlendirme. *TÜBA-KED, Türkiye Bilimler Akademisi Kültür Envanteri Dergisi*, 8, pp. 103–118.
- Akalın, M. and Akalın, A. (2008). 2007 Yılı Roma Hamamı Kutsal Yol Kazı ve Restorasyon Çalışmaları. *XVII. Müze Çalışmaları ve Kurtarma Kazıları Sempozyumu*, 28 April - 1 May 2008, Side (pp. 131-150).
- Akok, M. (1955). Ankara Şehri İçinde Rastlanan İlkçağ Yerleşmesinden Bazı İzler ve Üç Araştırma Yeri. *Belleten*, 19(75), pp. 309–330.
- Akok, M. (1968). Ankara Şehrindeki Roma Hamamı. *Türk Arkeoloji Dergisi*, 17, pp. 3–37.
- Akok, M. and Peñçe, N. (1941). Ankara İstasyonunda Bulunan Bizans Devri Mezarının Nakli. *Belleten*, 5(20), pp. 617–622.
- Akurgal, E. (1990). August Tapınağı ve “Yazıtlar Kraliçesi.” *Ankara Dergisi*, 1, pp. 16–21.
- Alanyalı Aral, E. (2017). Traces of Phrygian Period in Ankara: A Research on Phrygian Tumuli. *TÜBA-KED, Türkiye Bilimler Akademisi Kültür Envanteri Dergisi*, 15, pp. 21–43. <https://doi.org/10.22520/tubaked.2017.15.002>
- Alanyalı Aral, E., Güneri Söğüt, G. D., Ergun Kocaili, B., Özcan Tatar, C. (2023). Reading Elements of the Cultural Landscape Through an Urban Experience Route: The West Ankara Tumuli Trail. *Journal of Ankara Studies*, 11(1) pp. 55-75.
- Alpan, A. (2005). *Integration of Urban Archaeological Resources to Everyday Life in the Historic City Centers Tarragona, Verona and Tarsus*. [Unpublished Master's Thesis, Middle East Technical University]. <https://tez.yok.gov.tr>

Alpan, A. (2016). Approaching the Stratified City of Ankara as an Integral Unity. *Idealkent*, 7(19), pp. 662–671.

Alpan, A. and Kumkale Açıkgöz, E. (2017). Multi-Cultural Perception of the Cult Site of Hacı Bayram in Historic Center of Ankara. In Rodrigues dos Santos, J. (Ed.), *Preserving Transcultural Heritage: Your Way or My Way? Questions on Authenticity, Identity and Patrimonial Proceedings in the Safeguarding of Architectural Heritage Created in the Meeting of Cultures* (pp. 545-553). Casal de Cambra, Caleidoscopio.

Anlı, C. K. and Somuncu, M. (2013). Kentsel Kültürel Mirasin Korunması ve Sürdürülebilirliği: Ankara Hamamönü Örneği. *Journal of Ankara Studies*, 1(2), pp. 35-47.

Retrieved from <https://www.researchgate.net/publication/309282655>

Ankara Büyükşehir Belediyesi (2007), *Tarih İçinde Ankara, Ankara Tarihi ve Kültür Dizisi 1*, Birinci Basım. Ankara, Ankara Büyükşehir Belediyesi.

Arık, O. (1948). Anadolu'da Yeni Yerleşme Yerleri. III. *Türk Tarih Kongresi 15-20 Kasım 1943, Ankara: Kongreye Sunulan Tebliğler*. Türk Tarih Kurumu Publishing pp. 342-352

Atalan Çayirezmez, N., Hacıgüzeller, P. and Kalaycı, T. (2021). Archaeological Digital Archiving in Turkey. *Internet Archaeology*, 58. doi:10.11141/ia.58.20

Aydeniz, N. (2009). Kent Arkeolojisi Kavramının Dünyadaki Gelişimi ve Türkiye'deki Yansımaları. *Journal of Yaşar University*, 4(16), pp. 2501-2524.

Aydın, M., Zararsız, A. and Demirci, Ş. (2010). Geç Roma-Erken Bizans Dönemi Ankara Maltepe Kurtarma Kazısından Elde Edilen Bazı Buluntular Üzerine Arkeometrik Çalışmalar. 32. *Uluslararası Kazı, Araştırma ve Arkeometri Sempozyumu*, 32, pp. 1-8.

Aydın, M. and Zoroğlu, C. (2016). Ankara'da Erken Bizans Dönemi Mezar Alanı Kazısı / Early Byzantine Cemetery Excavation in Ankara. *Selçuk Üniversitesi Edebiyat Fakültesi Dergisi*, 35, pp. 295-328. <https://doi.org/10.21497/sefad.83980>

Aydın, S., Emiroğlu, K., Türkoğlu, Ö. and Özsoy, E. D. (2005). *Küçük Asya'nın Bin Yüzü: Ankara*. Dost Kitabevi.

- Aydingün, Ş., Heyd, V., Gldođan, E., niz, H. (2014). *İstanbul'un Batısında Kalan Son Hyk: Selimpaşa*.  
[https://www.researchgate.net/publication/312651969\\_Istanbul'un\\_Batisindan\\_Kalan\\_Son\\_HoyukSelimpasa](https://www.researchgate.net/publication/312651969_Istanbul'un_Batisindan_Kalan_Son_HoyukSelimpasa)
- Bademli, R. (1992). *Ulus Tarihi Kent Planlama alıřmaları*. 13- 14 Aralık 1991 Trk-Alman Semineri Koruyucu Kent Yenilemesi ve Yerel Ynetimler (pp. 21-28). TMMOB Mimarlar Odası Ankara Őubesi.
- Bahn, P. (1999). *Archaeology, A Very Short Introduction*. İstanbul, Kabalcı Publishing.
- Batuman, B. (2013). City Profile: Ankara. *Cities*, 31, pp. 578–590.  
<https://doi.org/10.1016/j.cities.2012.05.016>
- Belge, B. (2004). ok Katmanlı Tarihi Kent Merkezlerinin Ynetimi: Kentsel Arkeoloji ve Planlama. *Planlama*, 4, pp. 48–56.
- Belge, B. (2005). *Urban Archaeological Issues and Resources in Izmir Historic City Centre: An Exploratory Case Study*. [Unpublished Master's Thesis, Middle East Technical University]. <https://tez.yok.gov.tr>
- Belge, B. (2012). Trkiye'de Kentsel Arkeolojik Deđerlerin Kent Yařamına Katılım Sorunsalı: Antakya Kent Merkezi rneđi. In Sarıkaya Levent, Y., Uar M. (Eds.), *Mersin'den Mimarlık. Planlama, Tasarım Yazıları*, Tamer Gk'e Armađan (pp. 57–84). Mersin, Mersin Universitesi Yayınları.
- Belge, B., Aydınođlu, . and Belge, Z. S. (2021). Challenging Issues to Prepare an Urban Archaeological Database, Tarsus Historic City Centre. *Sleyman Demirel Univerasity Faculty of Arts and Sciences Journal of Social Sciences*, 52, pp. 261–270.
- Bennett, J. (2006). The Political and Physical Topography of Early Imperial Graeco-Roman Ancyra. *Anatolica*, 32, pp. 189–227.  
<https://doi.org/10.2143/ana.32.0.2012556>
- Bertram, J. and Bertram, G. İ. (2018). The Later Prehistory of the Ankara Region. In Batmaz, B., Bedianashvili, G., Michalewicz, A. and Robinso, A. (Eds.), *Context and Connection. Studies on the Archaeology of the Ancient Near East in Honour of Antonio Sagona* (pp. 848–865). Leuven, Peeters Publishers.

- Bevan, A., Pett, D., Bonacchi, C., Keinan-Schoonbaert, A., Lombraña Gonzáles, D., Sparks, R., Wexler, J., and Wilkin, N. (2014). Citizen Archaeologists: Online Collaborative Research about the Human Past. *Human Computation*, 1(2) pp. 183-197.
- Bilgin Altınöz, G. (2002). *Assessment of Historical Stratification in Multi-layered Towns as a Support for Conservation Decision-making Process; A Geographic Information Systems (GIS) Based Approach Case Study: Bergama*. [Doctorate Dissertation, Middle East Technical University]. <https://tez.yok.gov.tr>
- Bollwerk, E. (2015). Co-Creation's Role in Digital Public Archaeology. *Advances in Archaeological Practice*, 3(3), pp. 223–234.
- Bosch, E. (1967). *Quellen zur Geschichte der Stadt Ankara im Altertum*. Ankara, Türk Tarih Kurumu Basımevi.
- Box, P., Batchelor, D., Hastings, P., Heine, E., Perry, B., Quartermaine, J. (1999). *GIS and Cultural Resource Management: A Manual for Heritage Managers*. UNESCO.
- Buluç, S. (1981). Ankara Kabartmaları. *IX. Türk Tarih Kongresi, 21-25 September 1981, Ankara (I.Cilt)* (pp. 423–43). Ankara, Türk Tarih Kurumu.
- Buluç, S. (1988). The Architectural Use of the Animal and Kybele Reliefs Found in Ankara and its Vicinity. *Notes in the History of Art*, 7(3/4), pp. 16-23.
- Çağlayan, D. (1999). *An Assessment of Urban Archaeology and Archaeological Heritage: A Case Study in Ulus-Ankara*. [Unpublished Master's Thesis, Middle East Technical University]. <https://tez.yok.gov.tr>
- Calder, W. M. (1925). The Royal Road in Herdotus. *The Classical Review*, 39(1/2) pp. 7-11.
- Cangır, A. (2007). *Cumhuriyetin Başkenti*. Ankara, Ankara Üniversitesi Kültür ve Sanat Yayınları.
- Cengizkan, A. (2002). *Modernin Saati, 20. Yüzyılda Modernleşme ve Demokratikleşme Pratiğinde Mimarlar, Kamusal Mekân ve Konut Mimarlığı*. Ankara, Mimarlar Derneği 1927 and Boyut Publications.

- Cengizkan, A. (2004). *Ankara'nın İlk Planı: 1924-25 Lörcher Planı, Kentsel Mekan Özellikleri, 1932 Jansen Planı'na ve Bugüne Katkıları, Etki ve Kalıntıları*. Ankara Enstitüsü Vakfı.
- Chantre, E. (1898). *Mission en Cappadoce, 1893-1894*. Paris, Ernest Leroux.
- Costopoulos, A. (2016). Digital Archeology Is Here (and Has Been for a While). *Frontiers in Digital Humanities*, 3. <https://doi.org/10.3389/fdigh.2016.00004>
- Dalman, K. O., Schneider, A. M. and Bittel, K. (1932). Archaeologische Funde in Ankara 1931. AA, 47, pp. 233-261.
- Dinçer, I. (2013). Kentleri Dönüştürürken Korumayı ve Yenilemeyi Birlikte Düşünmek: “Tarihi Kentsel Peyzaj” Kavramının Sunduğu Olanaklar. *International Journal of Architecture and Planning*, 1(1), pp. 22–40. <http://hdl.handle.net/123456789/3371>
- Dolunay, N. (1941). Türk Tarih Kurumu Adına Yapılan Çankırıkapı Hafriyatı. *Belleten*, 19, pp. 261–266.
- Doruk, S. (1989). Aphrodisias. Araştırmalar-Kazılar-Tarihçe. *Belleten*, 53, 207–208. <https://doi.org/0.37879/belleten.1989.553>
- Emre, B., Erbaş, A. E. (2020). GIS-Based Approach to Urban Planning, Archaeological Inventory and Geology Structure In Multilayered Cities: The Case of Tahtakale in Istanbul. *A/Z ITU Journal of the Faculty of Architecture*, 17(2), pp. 31–52. <https://doi.org/10.5505/itujfa.2020.34735>
- Erdoğan, A., Günel, G. and Kılıcı, A. (2008). *Tarih İçinde Ankara*. Ankara, Ankara Büyükşehir Belediyesi.
- Erkal, F., Kırıl, Ö. and Günay, B. (2005). Ulus Tarihi Kent Merkezi Koruma Islah İmar Planı: 1986-2006 Koruma Planından YENİLEME Planına. *Planlama*, 4, pp. 34-49.
- Erincik, S. (2021). *Integration of Archaeological Sites into Planning Process: The Case of Iskele (Urla)*. [Unpublished Master's Thesis, Izmir Institute of Technology]. <https://tez.yok.gov.tr>
- Erzen, A. (1946). *İlk Çağda Ankara*. Ankara, Türk Tarih Kurumu Basımevi.

- Eyice, S. (1990). Ankara'nın Kaybolan Bir Eski Eseri: Klemens Kilisesi. *Ankara Dergisi*, 1, pp. 5–12.
- Eyice, S. (1996). Bizans Döneminde Ankara. *Anadolu Araştırmaları*, 14, pp. 243-264.
- Ferreira-Lopes, P. (2018). Achieving the state of research pertaining to gis applications for cultural heritage by a systematic literature review. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences-ISPRS Archives*, 42(4), pp. 249–252. <https://doi.org/10.5194/isprs-archives-XLII-4-169-2018>
- French, D. (1998). Pre- and Early-Roman Roads of Asia Minor: The Persian Royal Road. *Journal of Persian Studies*, 36, pp. 15-43.
- Foss, C. (1977). Late Antique and Byzantine Ankara. *Dumbarton Oaks Papers*, 31, pp. 29-87.
- Galanti, A. (1951). *Ankara Tarihi*. İstanbul, TAN Matbaası.
- Gençler Güray, Ç. (2021). Ankyra Çevresinde Roma Dönemi İzleri. *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi*, 61(2), pp. 1027–1053.
- Güner, G. (2020). Collecting The Past: Visualizing The Roman Bath in Ankara. *International Association for the Study of Traditional Environments: Working Paper Series*. 2020-2021, 307, pp. 1-13.
- Gürsu, I. (2021). *Teorik Çerçevesi ve Güncel Uygulamaları ile Toplum Arkeolojisi*. Ankara, British Institute at Ankara.
- González-Tennant, E. (2016). Recent Directions and Future Developments in Geographic Information Systems for Historical Archaeology. *Historical Archaeology In The Next Decades*, 50(3), pp. 24-49.
- Görkay, K. (2006). Ancyra's Unknown Stadium. *Deutsches Archaeologisches Institut Abteilung Istanbul*, 56, pp. 247–271.
- Graham, S. (2020). The Open Archaeology Textbook. *Internet Archaeology*, 55. <https://doi.org/https://doi.org/10.11141/ia.55.2>.

- Gülekli, N. C. (1948). *Ankara: Tarih-arkeoloji*. Ankara, Doğu Matbaası.
- Güven, S. (1998). Displaying the Res Gestae of Augustus: A Monument of Imperial Image for All. *The Journal of the Society of Architectural Historians*, 57(1), pp. 30-45.
- Güven, S. (2001). Bir Roma Eyaletinin Evrim Sürecinde Galatia ve Ancyra. In Yavuz, Y. (Ed.), *Tarih İçinde Ankara II, Aralık 1998 Seminer Bildirileri* (pp. 109-122). Ankara, Ankaralılar Vakfı Yayınları.
- Guzman, P., Roders, A. P., Guzmán, P. C., Pereira Roders, A. R., Colenbrander, B. J. F. (2014). Bridging the Gap Between Urban Development and Cultural Heritage Protection. *IAIA14 Conference Proceedings: Impact Assessment for Social and Economic Development 34th Annual Conference of the International Association for Impact Assessment, April* (pp. 1–6). <https://doi.org/10.13140/2.1.4633.7923>.
- Dernschwam, H. (1992). *İstanbul ve Anadolu'ya Seyahat Günlüğü*, Y. Önen, (çev.). Mersin, Kültür Bakanlığı 885.
- Hatıçoğlu, M. (2021). *Urban Obsolescence: An Evaluation of Observed and Perceived Criteria in the Context of Ulus Historic City Center in Ankara*. [Unpublished Master's Thesis, Middle East Technical University]. <https://tez.yok.gov.tr>.
- Henning Von Der Osten, H. (1933). *Discoveries in Anatolia 1930-31*. The University of Chicago Press.
- Howland, M. D., Liss, B., Levy, T. E., Najjar, M. (2020). Integrating Digital Datasets into Public Engagement through ArcGIS StoryMaps. *Advances in Archaeological Practice*, 8(4), pp. 351-360.
- Ioannides, M., Chatzigrigoriou, P., Bokolas, V., Nikolakopoulou, V., Athanasiou, V., Papageorgiou, E., Leventis, G., Sovis, C. (2016). Educational Creative Use and Reuse of Digital Cultural Heritage Data for Cypriot UNESCO Monuments. In Ioannides, M., Fink, E., Moropoulou, A., Hagedorn-Saupe, M., Fresa, A., Liestøl, G., Rajcic, V. and Grussenmeyer P. (Eds.), *Digital Heritage. Progress in Cultural Heritage: Documentation, Preservation, and Protection. 6th International Conference, EuroMed 2016, Nicosia, Cyprus, October 31–November 5, 2016, Proceedings, Part I* (pp. 891–901). Springer International Publishing.

- Işık, S. (2012). *Tarihi Kent Merkezlerinde Koruma Planlaması Yaklaşımları: Ulus Tarihi Kent Merkezi Örneği*. Ankara, Kültür ve Turizm Bakanlığı. <https://docplayer.biz.tr/13506920-Tarihi-kent-merkezlerinde-koruma-planlamasi-yaklasimlari-ulus-tarihi-kent-merkezi-ornegi.html>
- Kadioğlu, M., Görkay, K. (2007). Yeni Arkeolojik Araştırmalar Işığında ΜΗΤΡΟΠΟΛΙΣ ΤΗΣ ΓΑΛΑΤΙΑΣ: ANKYRA. *Anatolia*, 32, pp. 21–151.
- Kadioğlu, S. (2010). Definition of Buried Archaeological Remains with A New 3D Visualization Technique of a Ground-Penetrating Radar Data Set in Temple Augustus in Ankara, Turkey. *Near Surface Geophysics*, 8(5), pp. 397-406.
- Kadioğlu, M., Görkay, K. and Mitchell, S. (2011). *Roma Döneminde Ancyra*. İstanbul, Yapı Kredi Yayınları.
- Kansa, E., Kansa, S. and Watrall, E. (Eds.) (2011). *Archaeology 2.0: New Approaches to Communication and Collaboration*. Los Angeles, Cotsen Institute of Archaeology. <http://www.escholarship.org/uc/item/1r6137tb>.
- Karababa, Ö. (2002). *City and Collective Memory: Urban Projects in Hacıbayram*. [Unpublished Master's Thesis, Middle East Technical University]. <https://tez.yok.gov.tr>.
- Karakul, Ö., Yıldız, T. (2020). *Kültürel Mirasın Korunmasında Yerel Yönetimlerin Rolü - Türkiye*. İstanbul, UCLG-MEWA.
- Kızıltan, Z. (2014). Marmaray-Metro Projeleri ve Yenikapı Arkeolojik Kurtarma Kazıları. *Colloquium Anatolicum*, XIII, pp. 11–43.
- Knoerl, J. J. (1991). Mapping History Using Geographic Information Systems. *The Public Historian*, 13(3), pp. 97–108. <https://www.jstor.org/stable/3378555>.
- Koşay, H. Z. (1933). Ankara Gazi Orman Fidanlığında Bulunan Eserler. *Türk Arkeoloji Dergisi*. (1) pp. 5-24.
- Koşay, H. Z. (1935). *Ankara Budun Bilgisi*. Ankara Halkevi Dil-Tarih Şubesi.
- Koşay, H. Z. (1957) Ankara Augustus Mabedi Kazısı. *Anatolia*, 2, pp. 133-138.
- Krencker, D., Schede, M., Heck, O., Grégoire, H., Wittek, P., Augustus, Institut, D. A. (1936). *Der Tempel in Ankara*. Berlin, Walter de Gruyter & Co.

- Kutlu, H. T. (2022). *Eski Ankara ve Ulus Tarihi Kent Merkezinde, Koruma – Islah ve Dönüşüm Planları Üzerine Bir Araştırma*. [Unpublished Master's Thesis, Çankaya University]. <https://tez.yok.gov.tr>.
- Lilley, K., Porter, C. (2016). GIS, spatial technologies and digital mapping. In Gunn, S., Faire, L. (Eds.). *Research Methods for History* (2<sup>nd</sup> ed.). Edinburgh University Press.
- Mamboury, E. (1949). Les Parages du Temple de Rome et D'Auguste à Ankara. *Türk Arkeoloji Dergisi*, 5, pp. 96–111.
- Mamboury, E. (1934). *Ankara Guide Touristique*. Edition Francaise. Ankara.
- Mason, R. (2002). Assessing Values in Conservation Planning: Methodological Issues and Choices. In de la Torre, M. (Ed.), *Assessing the Values of Cultural Heritage: Research Report* (pp. 5-30). Los Angeles, The Getty Conservation Institute.
- Matsuda, A., Okamura, K. (Eds.) (2011). *New Perspectives in Global Public Archaeology*. York, Springer.
- McDavid, C., McGhee, F. (2010). Commentary: Cultural Resource Management, Public Archaeology, and Advocacy. In Lydon, J. and Rizvi, U. Z. (Eds.), *Handbook of Postcolonial Archaeology* (pp. 481–494). Left Coast Press, Walnut Creek.
- McGimsey, C. R. (1972). *Public Archeology*. New York, Seminar Press.
- McKeague, P., van't Veer, R., Huvila, I., Moreau, A., Verhagen, P., Bernard, L., Cooper, A., Green, C., van Manen, N. (2019). Mapping Our Heritage: Towards a Sustainable Future for Digital Spatial Information and Technologies in European Archaeological Heritage Management. *Journal of Computer Applications in Archaeology*, 2(1), 89–104. <https://doi.org/10.5334/jcaa.23>
- Merriman, N. (Ed.) (2004) *Public Archaeology*. Routledge.
- Metin, M. (1995). *Ulus Kazısı 1995*. VII. Müze Kurtarma Kazıları Semineri, Kuşadası 8-10 April 1996, pp. 199-210.
- Mitchell, S. (1984/85). Archaeology in Asia Minor 1979-84. *Archaeological Reports*, 31, pp. 70-105.

- Mitchell, S. (1989/90). Archaeology in Asia Minor 1985-1989. *Archaeological Reports*, 36, pp. 83-131.
- Mitchell, S. (2008). *The Imperial Temple at Ankara and Res Gestae of the Emperor Augustus. A Historical Guide*. British Institute at Ankara and Museum of Anatolian Civilizations.
- Mitchell, S., French, D. (Eds.) (2019). *The Greek and Latin Inscriptions of Ankara (Ancyra): Vol. II Late Roman, Byzantine and Other Texts* (1<sup>st</sup> ed.). Verlag C. H. Beck.
- Moshenska, G. (Ed.) (2017) *Key Concepts in Public Archaeology*. London, UCL Press. <https://doi.org/10.14324/111.9781911576419>.
- Mutlu, Ö. (2012). *Integration of the Roman Remains in Ulus Ankara within the Current Urban Context*. [Unpublished Master's Thesis, Middle East Technical University]. <https://tez.yok.gov.tr>
- Nicoletti, R. (2018). GIS applied to the Urban Archaeology of Enna (Sicily). Towards an Archaeological Potential Predictive Model. *Nuova Cultura Italian Association of Geography Teachers Journal of Research and Didactics in Geography*, 2(7) pp. 71–81. <https://doi.org/10.4458/1682-07>
- Özçakır, Ö., Bilgin Altınöz A. G., and Mignosa, A. (2017). The Impact of Politics and the Ideology on the Transformation of Heritage Values: Hacı Bayram District in Ankara, Turkey. *Intagibility Matters: International Conference on the Values of Tangible Heritage*. Lisbon, May 29-30 (pp. 241-252).
- Özgüç, T. (1946). Anadolu'da Arkeoloji Araştırmaları I. *Belleten*, 10(40), pp. 557–597.
- Özgüç, T. and Akok, M. (1947). Türk Tarih Kurumu Adına Anıtkabir Alanında Yapılan Tümülsüz Kazıları. *Belleten*, 11(41), pp. 27-56.
- Peschlow, U. (2015). *Ankara: Die bauarchäologischen Hinterlassenschaften aus römischer und byzantinischer Zeit*. Wien, Phoibos Verlag.
- Pini, D., Lanzoni, L. and Teston, S. (2008). *The Inventory of the Historic City of Sana'a: A Tool for Urban Conservation*. UNESCO.

- Richardson, L. J. and Almansa-Sánchez, J. (2015). Do You Even Know What Public Archaeology Is? Trends, Theory, Practice, Ethics. *World Archaeology*, 47(2) pp. 194-211.
- Şahin, S. Z., Çekiç, A. and Yalçın, M. İ. (2011). *Ankara Kentinin Dünya Miras Alanlığına Önerilmesi Fizibilite Çalışması Raporu*. Ankara Kalkınma Ajansı.
- Santos, B., Gonçalves, J., Martins, A. M., Pérez-Cano, M. T., Mosquera-Adell, E., Dimelli, D., Lagarias, A., Almeida, P. G. (2021). GIS In Architectural Teaching And Research: Planning And Heritage. *Education Sciences*, 11(6). Retrieved from <https://www.mdpi.com/2227-7102/11/6/307>.
- Savrum Kortanoğlu, M. (2013). Arkeolojik Sitler ve Derecelendirme Sorunu. *Colloquium Anatolicum*, XII, pp. 271-290.
- Serin, U. (2014). Bizans Ankarası ve Kaybolan Bir Kültür Mirası: “St. Clement” Kilisesi. *Middle East Technical University Journal of the Faculty of Architecture*, 31(2), pp. 65–92. <https://doi.org/10.4305/METU.JFA.2014.2.4>.
- Serin, U. (2018). Ankara and The Temple of Rome and Augustus in the Late Antique, Byzantine and Turkish Periods. In Botteri, P, Veronesi, V. and Ravalico, S. (Eds.), *Progetto Ancyra: Il tempio di Augusto e Roma ad Ankara* (pp. 335–579). Trieste, EUT Edizioni Università di Trieste.
- Smith, L. and Waterton, E. (2009). *Heritage, Communities and Archaeology*. Bloomsbury Publishing.
- Spiridon, P., Ursu, A. and Sandu, I. (2016). Heritage Management Using GIS. *Informatics, Geoinformatics and Remote Sensing, Conference Proceedings, Volume III, Cartography & GIS. International Multidisciplinary Scientific GeoConference-SGEM*. Sofia, Bulgaria pp. 263-270.
- Şahin Güçhan, N. (1992) A Cross Section from the Current Conservation Problems of Historic Urban Sites in Turkey. *Proceedings of Innovations in Management, Maintenance and Modernisation of Buildings*. 28-30 October 1992, Rotterdam, Holland. [https://www.researchgate.net/publication/284033435\\_A\\_Cross\\_Section\\_From\\_The\\_Current\\_Conservation\\_Problems\\_Of\\_Historic\\_Urban\\_Sites\\_In\\_Turkey](https://www.researchgate.net/publication/284033435_A_Cross_Section_From_The_Current_Conservation_Problems_Of_Historic_Urban_Sites_In_Turkey).
- Tankut, G. (1988). Ankara'nın Başkent Olma Süreci. *ODTÜ Mimarlık Fakültesi Dergisi*, 8(2), pp 93-104.

- Tankut, G. (1991). Kentsel Arkeolojik Alanlarda Arkeolojik Değerlerin Kent Hayatına Katılımı, Korumanın Fiziksel Planlama Boyutu. *Arkeolojik Sit Alanlarının Korunması ve Değerlendirilmesi I. Ulusal Sempozyumu, 14-16 Ekim 1991, Antalya*. T.C. Kültür Bakanlığı Kültür ve Tabiat Varlıklarını Koruma Genel Müdürlüğü and T.C. Antalya Valiliği. pp. 19-24.
- Tankut, G. (1993). *Bir Başkent'in İmarı/Ankara (1929-1939)*. İstanbul, Anahtar Kitaplar Yayınevi.
- Tankut, G. (1994). *Bir Başkent'in Oluşumu/Ankara 1923-1950*. TMMOB Mimarlar Odası Ankara Şubesi Yayını.
- Tankut, G., Buluç, S. and Tuna, N. (2006). Ankara Arkeoloji Master Planı Ön Çalışmaları. In Tolun, V., Takaoğlu, T. (Eds.). *Sevim Buluç Anı Kitabı* (pp. 21-44). Çanakkale Onsekiz Mart Üniversitesi.
- Temizer, R. (1959). Ankara'da Bulunan Kybele Kabartması. *Anadolu* (4) pp. 178-187.
- Temizsoy, İ., Arslan, M., Akalın, M., Metin, M. (1996). Ulus Kazısı 1995. In *Anadolu Medeniyetleri Müzesi 1995 Yıllığı* (pp. 7-36). Ankara, Anadolu Medeniyetleri Müzesi.
- Temizsoy, İ., Demirdelen, H. (1999). Balgat Roma Mezarı. *Anadolu Medeniyetleri Müzesi 1998 Yıllığı* (pp. 24-52). Ankara, Anadolu Medeniyetleri Müzesi.
- TMMOB Şehir Plancıları Odası Ankara Şubesi (2019). *Mekân: Ulus Ankara'da Yitmekte Olan Kültür ve Tabiat Varlıkları: Mekân, İnsan ve Kentin Tarihi*. TMMOB Şehir Plancıları Odası Ankara Şubesi.
- Tuna, N. (1999). Turkey. *Report on the Situation of Urban Archaeology in Europe* (pp. 217-228). Council of Europe Publishing.
- Tuna, N. (2007). ODTÜ Müzesi'nin Ankara Frig Nekropolü'nde Araştırma ve Kurtarma Kazıları. In Sivas, H., Tüfekçi Sivas, T. (Eds.), *The Mysterious Civilization of the Phrygians* (pp. 99-113). T.C. Kültür ve Turizm Bakanlığı and Yapı Kredi Yayınları.
- Tunçer, M. (2000). *Tarihsel Çevre Koruma Politikaları Ankara*. Kültür Bakanlığı Yayınları.

- Tunçer, M. (2001). Ankara'da Tarihsel Çevrenin Korunmasına Yönelik Politikalar. In Yavuz, Y. (Ed.), *Tarih İçinde Ankara II, Aralık 1998 Seminer Bildirileri* (pp. 75–107). Middle East Technical University, Ankara.
- Tunçer, M. (2013). Ankara Tarihi Kent Merkezi Yenileme Alanı Koruma Planı, Niteliği ve İptaline İlişkin Gerekçeler. *Ankara Araştırmaları Dergisi*, 1(2), pp. 10–34.
- Tunçer, M. (2019). Ankara'nın Kaybolan Doğal ve Kültürel Değerleri. *Turkish Journal of Landscape Research*, 2(2), pp. 108–138.
- Ulusoy, D. (2006). *Archaeology of the Galatians at Ancyra From the Hellenistic Period Through the Roman Era*. [Unpublished Master's Thesis, Middle East Technical University]. <https://tez.yok.gov.tr>
- Virevialle, F. (2011). Sığırh Archaeological and Historical GIS: A Mutualized Historical Urban Database. *Proceedings of the 25th International Cartographic Conference. Paris, France, 3–8 July 2011*. [https://icaci.org/files/documents/ICC\\_proceedings/ICC2011/](https://icaci.org/files/documents/ICC_proceedings/ICC2011/)
- Vladimirovna Bushmakina, Y., Balyberdina, A., Dmitrieva, M. K. and Gogoleva, M. V. (2017). The use of GIS for studying cultural heritage and historical urban landscape: the case of Perm and Usole (Russia). *Ge-Conservación*, 1(11), pp. 264–271.
- Wheatley, D., Gillings, M. (2002). *Spatial Technology and Archaeology The Archaeological Applications of GIS*. CRC Press. <https://doi.org/https://doi.org/10.1201/b12806>

## Web References

Alexandra Archive (United States) from <https://alexandriaarchive.org>

Archaeology Data Service (United Kingdom) from <https://archaeologydataservice.ac.uk>

Archaeological Archive (Scotland) from <https://www.historicenvironment.scot>

*ArcheoSitarProject: Il Sistema Informativo Territoriale Archaeologico di Roma (SITAR)* from <https://www.archeositarproject.it/en/>

*Bellek Ankara* from <https://bellek.ankara.bel.tr/>

Conditions for the Protection and Utilization of Urban Archaeological Sites (Decision no 702) from <https://kvmgm.ktb.gov.tr/TR-44325/ilke-karari--karar-no-702--karar-tarihi-15042005.html>

Convention Concerning the Protection of the World Cultural and Natural Heritage. (1972). <https://whc.unesco.org/en/conventiontext/>

Cultural Heritage Platform of Izmir from <https://www.kulturelmiras.org/izmir-tasinmaz-kultur-varliklari-haritasi/>

Dutch Data Archiving and Networked Services (Netherlands) <https://dans.knaw.nl/en/data-stations/archaeology/>

Edom Lowlands Regional Archaeology Project (ELRAP) (2020) From <https://storymaps.arcgis.com/stories/b441a28ea5844d7bafbd47d3471166c9>

Erimtan Museum <https://erimtanmuseum.org/en/aphrodisias>

*European Convention on the Protection of Archaeological Heritage.* (1992). From <https://www.coe.int/en/web/culture-and-heritage/valetta-convention>

*European Culture Convention* (1954). from <https://www.coe.int/en/web/culture-and-heritage/european-cultural-convention>

General Technical Specifications for Environmental Design Projects. (2005). *Kültür ve Turizm Bakanlığı.* from <https://teftis.ktb.gov.tr/Eklenti/62852,cevre-duzenleme-projesi-genel-teknik-sartnamesipdf.pdf?0%0D%0A%0D%0A>

Geyre, retrieved from <https://erimtanmuseum.org/en/aphrodisias>

Gordion, retrieved from [https://www.sas.upenn.edu/~nmiller0/Tour\\_MM\\_circuit.Turkish.html](https://www.sas.upenn.edu/~nmiller0/Tour_MM_circuit.Turkish.html)

Gordion in UNESCO retrieved from <https://whc.unesco.org/en/list/1669/>

Kerkenes, <http://www.kerkenes.metu.edu.tr/kerk1/00khome/overview/overview.html>  
and <http://www.kerkenes.metu.edu.tr/kerk1/07finds/index.html>

*Kültür Portalı - Haritada Keşfet - Ankara*. From  
<https://www.kulturportali.gov.tr/harita/default.aspx?il=ankara>

Higher Council Principle Decision. (2005). *Kültür ve Turizm Bakanlığı & Teftiş Kurulu Başkanlığı*.  
<https://teftis.ktb.gov.tr/yazdir?83B035D31E9DFE34F410727E62447ECB#:~:text=3386>

Hrant Dink Association, Mapping of Cultural Heritage of Turkey from  
<https://turkiyekulturvarliklari.hrantdink.org/>

Hrant Dink Association, The Church of St. Teresa  
<https://turkiyekulturvarliklari.hrantdink.org/#poi-view/10544>

ICOMOS, <https://www.icomos.org/en>

ICOM, <https://icom.museum/en/>

ICOMOS Archaeological Heritage Management, (2001) *Archaeological Heritage at Risk* from <https://www.icomos.org/public/risk/2001/icahm2001.htm>

ICOMOS World Report 2001-2002 on Monuments and Sites in Danger (2001) from  
<https://www.icomos.org/public/risk/2001/icahm2001.htm>

ImagineRio (n.d.) from <https://www.imagnerio.org/map>

Koç University Vehbi Koç Ankara Studies Research Center (VEKAM)  
<https://vekam.ku.edu.tr>

Koç University Vehbi Koç Ankara Studies Research Center (VEKAM), Ankara  
Immovable Cultural Property. Retrieved July 12, 2023, from  
<https://librarydigitalcollections.ku.edu.tr/en/collection/ankara-immovable-cultural-property-collection/>

*Kültür ve Tabiat Varlıklarını Koruma Yüksek Kurulu 658 Sayılı ve 05.11.1999 Tarihli İlke Kararı*, (1999) from <https://teftis.ktb.gov.tr/TR-263742/658-nolu-ilke-karari-arkeolojik-sitler-koruma-ve-kullanma-kosullari.html>

*Kültür ve Tabiat Varlıklarını Koruma Kanunu*. (1983). Türkiye Cumhurbaşkanlığı Mevzuat Bilgi Sistemi. From <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=2863&MevzuatTur=1&MevzuatTertip=5>

Law of Conservation of Cultural and Natural Heritage (2863/1983) (*Kültür ve Tabiat Varlıklarını Koruma Kanunu*, 1983) <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=2863andMevzuatTur=1andMevzuatTertip=5>

Lörcher Plan (1924) Retrieved from <https://www.goethe.de/ins/tr/ank/prj/urs/geb/sta/loe/trindex.html>

Regulations on the Preparation of Conservation Master Plans and Environmental Design Projects (26/07/2005 *Tarihli Koruma Amaçlı İmar Planları ve Çevre Düzenleme Projelerinin Hazırlanması, Gösterimi, Uygulaması, Denetimi, Müelliflerine İlişkin Usul ve Esaslara Ait Yönetmelik*) from <https://www.resmigazete.gov.tr/eskiler/2017/01/20170105-5.htm>

Selimpaşa Mound, Retrieved from [https://tayproject.org/TAYages.fm\\$Retrieve?CagNo=2596&html=ages\\_detail\\_t.html&layout=web](https://tayproject.org/TAYages.fm$Retrieve?CagNo=2596&html=ages_detail_t.html&layout=web)

TAY (The Archaeological Settlements of Turkey) from <http://tayproject.org/enghome.html>

*The Amsterdam Declaration*. (1975) from [http://www.icomos.org.tr/Dosyalar/ICOMOSTR\\_en0458431001536681780.pdf](http://www.icomos.org.tr/Dosyalar/ICOMOSTR_en0458431001536681780.pdf)

The National Archaeological Map of France. From <https://www.culture.gouv.fr/en/Thematic/Archeology/Archeology-in-France/The-National-Archaeological-Map> and <http://atlas.patrimoines.culture.fr/atlas/trunk/>

The National Institute for Preventive Archaeological Research of France Inventory. From <https://www.inrap.fr/chroniques-de-site/recherche> and <https://www.inrap.fr/archeozoom>

The Venice Charter. (1964). From <https://www.icomos.org/en/participer/179-articles-en-francais/ressources/charters-and-standards/157-thevenice-charter>

UNESCO Recommendation on the Historic Urban Landscape Report from <https://whc.unesco.org/en/hul/#:~:text=The%20HUL%20Recommendation%20is%20a%20key%20tool%20to%20help%20cities,heritage%20conservation%20and%20management%20strategies.>

Yenikapı-Marmaray Excavations from <http://yenikapibatiklari.com>

*Yıpranan Tarihi Ve Kültürel Taşınmaz Varlıkların Yenilenerek Korunması ve Yaşatılarak Kullanılması Hakkında Kanun* from <https://teftis.ktb.gov.tr/TR-263601/5366-sayili-yipranan-tarihi-ve-kulturel-tasinmaz-varliklarin-yenilenerek-korunmasi-ve-yasatilarak-kullanilmasi-hakkinda-kanun.html>

## APPENDICES

### A. TURKISH SUMMARY / TÜRKE ÖZET

Türkiye'nin kentlerinde uzun süredir tanık olunan agresif inşaat faaliyetleri ve kentsel yayılma, kentsel çevrelerdeki arkeolojik mirasın varlığını ve korunmasını tehdit etmektedir. Kentsel yenileme, soylulaştırma ve dönüşüm projeleri, kentin tarihi katmanlarının korunmasını ve kentsel arkeolojik alanlarda sürdürülebilir koruma uygulamalarının hayata geçirilmesini zorlaştırmaktadır. Bu miras çoğunlukla yaşayan bir kentsel varlık içinde yer aldığından, uygunsuz yenileme veya yanlış koruma politikalarının neden olduğu yıkım ve bozulmaya karşı daha savunmasızdır. Guzman ve diğeri (2014) Dünya Mirası Kültür Varlıklarına yönelik iki büyük tehditten bahsetmektedir: yönetim eksiklikleri ve agresif büyüme. Bu nedenle, özellikle katmanlı şehirlerde kültürel mirasın kentsel gelişim projelerine entegre edilmesi, kentsel mirasın korunması için temel bir unsur haline gelmiştir.

Buna ek olarak, çeşitli kültürel katmanlara sahip katmanlı şehirlerde kentsel arkeolojinin yapılması iki ana nedenden dolayı zordur. Birincisi, birçok kent merkezi çok erken dönemlerden beri kesintisiz olarak iskân edilmiştir ve bu nedenle, erken katmanlara ait önemli miktarda bilgi daha yeni katmanların altında kaybolmuş veya tahrip olmuştur; ikincisi, günümüz kent merkezleri daha eski yerleşimlerin üzerine inşa edilmiştir ve bu da araştırmayı daha zor hale getirmektedir. O halde, kentsel bağlamlarda etkili koruma uygulamaları, bilginin kamusal ölçekte yaygınlaştırılmasını ve dolayısıyla kamu ile arkeolojinin bütünleştirilmesini gerektirir. Halkın içinde yaşadığı bağlamın kültürel mirası hakkında bilgilendirilmesi, böylece farkındalık ve ilginin geliştirilmesi, kentsel mirasın korunmasında çok önemli bir adım olarak öne çıkmaktadır. Dijital araçlar, mirası farklı şekillerde anlatarak bu amaca ulaşmaya birçok yönden yardımcı olmaktadır. Miras bilgilerinin dijitalleştirilmesi, daha geniş bir kitlenin entegrasyonunu kolaylaştırır ve web tabanlı platformlar aracılığıyla daha fazla bilgiye ulaşım

sağlamak gibi başka stratejilerin geliştirilmesine olanak tanır. Bu hiçbir şekilde sadece arkeoloji alanında yürütülecek bir süreç değildir; kentsel bir yerleşimde dijital arkeoloji yapmak, kamusal entegrasyonu ve erişimi hedeflemek çeşitli disiplinlerin entegrasyonunu gerektirir.

Kentsel arkeoloji yoluyla kentsel yerleşimin tarihselliğini anlamak ve bütüncül ve kapsamlı kentsel kararlar tasarlamak çok önemlidir. Kentsel arkeoloji çok disiplinli bir alandır ve sadece arkeologları, mimarları, şehir plancılarını, şehir ve mimarlık tarihçilerini değil aynı zamanda karar vericileri de bir araya getirerek kentsel dokuların tarihsel gelişimi hakkında çok boyutlu bilgi sağlayabilir (Çağlayan, 1999) ve kentsel planlama ve miras koruma stratejilerine kapsayıcı ve bütünlük bir şekilde yaklaşılmasına hizmet edebilir (Belge, 2005). Kentsel arkeoloji, bir kentin geçmişi ve geleceği arasındaki ilişkiyi keşfederek kentsel gelişim politikaları ve projeleriyle uzlaşabilir. Gerçekten de miras koruma kararlarının önemli bir unsuru olarak ele alınmalıdır.

Kent tarihi çalışmaları, çok kültürlü bir mirasa sahip katmanlı kentlerde çok boyutlu ve disiplinler arası bir yaklaşımı destekleyen yöntemlerle tasarlanmalıdır. Bu tür çalışmalar için etkili bir araç CBS'dir (Coğrafi Bilgi Sistemi). Çok büyük miktarda ve çeşitlilikte bilgi ve veri toplama, işleme ve üretme yeteneği, onu birçok kullanım için güçlü bir araç haline getirmektedir. CBS, sürekli büyüyen ve değişen şehirler için verimli bir veri toplama ve işleme sistemidir. Veri işleme kapasitesi ve yetkinliği, CBS'yi kentsel planlama süreçlerinde miras yönetiminin ayrılmaz bir parçası haline getirmiştir. Bir süredir kentsel hizmetleri ve etkin kültürel miras yönetimini desteklemek ve planlamak için etkin bir şekilde kullanılmaktadır (Spiridon vd., 2016).

CBS, mekânın kinetik, mekânsal ve duyuşsal unsurlarını birleştirerek coğrafi bilgileri derleyen, farklı kaynaklardan gelen çeşitli verileri entegre eden, mekânsal ve arkeolojik verilerin toplanmasını ve karşılaştırılmasını kolaylaştıran, tarihi ve coğrafi verilerin görselleştirilmesini, entegre edilmesini, analiz edilmesini ve tutarlı bir şekilde birleştirilmesini mümkün kılan bir yazılımdır (Lilley ve Porter, 2016; Nicoletti, 2018). Mekânsal ilişkileri görselleştirmek için büyük verilerle çalışmaya olanak tanır. Böylece bütüncül bir bakış açısı sunarak tarihi olayları, yerleşimleri,

bağlantı yollarını ve daha karmaşık ilişkileri daha iyi değerlendirmeye yardımcı olur. Ayrıca, veri kaybı riskiyle karşı karşıya kalmadan dijitalleştirilmiş verilerin güncellenmesine ve/veya revize edilmesine olanak tanıyarak planlama, karar alma ve kamu erişim süreçlerini kolaylaştırır. Ayrıca bu süreçler somut mirasa zarar vermeden de gerçekleştirilebilir. CBS mekansal olarak referanslar verir ve koordinatları kullanarak coğrafi bilgileri paylaşır, coğrafi ve topografik haritaların ve arkeolojik verilerin üst üste bindirilmesini sağlar, böylece miras varlıklarını bir envanter olarak görüntüler.

Ayrıca görselleştirilen haritalar dijital kartografide kullanılmak üzere içe aktarılabilir. CBS yazılımı, kapsamlı mekansal veriler oluşturmak ve kullanmak için bu araçları bir araya getirdiğinden, kullanımı kentlerdeki tarihsel süreçleri ve kentsel değişimleri görmeyi kolaylaştırır. CBS ve dijital haritalama uygulandığında, tarihi bir kentin katmanları ve daha önce kaydedilmemiş boşlukları görünür ve anlaşılır hale gelir. Bu nedenle, arkeolojide zaman içindeki değişimleri temsil etmenin ve farklı dönemlere ait verileri karşılaştırmanın ulaşılması zor bir hedef olduğu düşünüldüğünde, CBS kentsel arkeoloji için uygun bir yöntemdir (Virevialle, 2011). Ayrıca, kentsel gelişim projelerinde kültürel mirasın korunmasını doğru bir şekilde değerlendirmek ve yönetmek için yardımcı bir yöntem ve ortamdır. Dijital araçların, özellikle de CBS'nin koruma ve planlama süreçlerine entegre edilmesi, konuyla ilgili birçok bilgi türünün değerlendirilmesini sağlar (Lilley ve Porter, 2016).

Kentsel bağlamda, kültürel varlıklar genellikle hasar, bağlantı kaybı veya tarihsel süreklilik kesintilerinden olumsuz etkilenir. Bu varlıkların coğrafi verilerle temsil edilmesi, buluntuların daha iyi yorumlanmasına ve miras varlıkları arasındaki bağlantıların belirlenmesine olanak tanır. Ayrıca, oluşturulan veri seti gelecekteki arkeolojik çalışmalarda ve miras koruma süreçlerinde kullanılabilir. Bu nedenle, kentsel arkeolojik alanlarda, bilgi ve yorumlama netliğini sağlamak için sistematik ve standart olarak düzenlenmiş tüm arkeolojik miras verilerini içeren ayrıntılı bir dijital envanterle çalışmak çok önemlidir. Arkeolojik saha çalışmalarını yönetmek, bilgiye dayalı kararlar almak ve bunları etkili bir şekilde koordine etmek için mekansal analiz yapmak da çok önemlidir. Kesin konumlar ve doğru bilgilerle çalışma imkanı sunan CBS, böylece uzun ve pahalı çalışmalar ve kazılar gerektirmeden görünmeyen katmanların mevcut kentsel bağlama entegre edilmesine olanak tanır.

Türkiye'de kentsel arkeolojik mirasın korunmasına yönelik CBS tabanlı mekânsallaştırma çalışmaları sınırlıdır. Kentsel arkeolojik alanları önceleyen koruma projelerinin ve kentsel planların oluşturulmasında dikkate alınmak üzere sistematik ve düzenli bir veri tabanı sağlamak için mekânsal dijital envanterlerin hazırlanması ve mirasın yerel toplumla bütünleşmesini dikkate alan kentsel projeler oldukça azdır. Bu çalışmanın örnek vakası olan Ankara'nın tarihi kent merkezi Ulus, tarihi önemine rağmen uygun bir miras koruma ve muhafaza politikası ve yönetiminden yoksundur. Bölgedeki kültürel varlıklar, özellikle 1950'lerden bu yana yaşanan hızlı kentsel değişim ve büyümenin ardından tahribata, parçalanmaya, kapatılmaya ve kaçak kazılara maruz kalmıştır. Kentsel politika oluşturma süreçlerinde kültürel mirasın korunmasının bir konu olarak ihmal edilmesi, geri getirilemeyen mirasın giderek kaybolmasına ve halkın bölgenin ve kentin tarihi hakkında bilgisiz kalmasına neden olmuştur.

Ulus'taki kültürel mirasın önemi konusunda kamuoyunda farkındalık ve değer verme eksikliği bulunmaktadır. Bu anlamda, dijital arkeolojinin Ankara ve benzeri örneklerde kentsel arkeolojiye uygulanması, şu anda görünmeyen geçmiş kentsel yerleşimlerin "keşfedilmesine" olanak tanıyacağı ve sırasıyla topluma erişim ve toplumla bütünleşme için gerekli araçları sağlayacağı için daha da önemli hale gelmektedir. Graham ve diğerlerinin (2020) belirttiği gibi: "21. yüzyılda dijital arkeoloji mutlaka toplumsal bir arkeolojidir." Toplum arkeolojisi, topluma arkeolojik uygulamalar ve metodolojilerle ilgilenme fırsatları yaratır. Ayrıca, çevrelerindeki mirasa ilişkin değerli içgörüler sunar. Toplum arkeolojisi, mirasın korunmasının daha iyi anlaşılması için araştırmalar, projeler ve yöntemler geliştirmeyi amaçlar. Son yıllarda, halkın arkeolojiye katılımı için dijital teknolojilerin getirdiği olanaklar önemli ölçüde ilerlemiştir. Bu ilerlemelerin yanı sıra, daha fazla tekrarlanabilir arkeolojik uygulamalara ve veri oluşturmaya yönelik daha açık, katılımcı yaklaşımlara da giderek daha fazla vurgu yapılmaktadır (Kansa vd. 2011; Bevan vd., 2014).

Bu tez, kent arkeolojisi, kültürel miras yönetimi, mirasın korunması ve halka erişim arasındaki etkileşimi sorunsallaştırarak, dijital arkeoloji ve dijital haritalamanın çok katmanlı kentsel bağlamlardaki rolünü, potansiyelini ve katkısını tartışmayı

amaçlamaktadır. Araştırma, dijital toplum arkeolojisi perspektifinden ve kentsel yerleşim kapsamında tasarlanmıştır. Ortaya çıkan araştırma soruları sırasıyla şunlardır: Dijital haritalama, tarihi kentleri anlamada işbirlikçi modelleri kolaylaştırmaya nasıl yardımcı olabilir? Dijital haritalama kentsel yerleşimlerin çok katmanlılığını hangi yollarla gösterir/temsil eder? Dijital haritalama, şehir planlamasında kültürel mirasın entegrasyonuna ve korunmasına yardımcı olabilir mi? ve Dijital haritalama, kültürel mirasın sahiplenilmesi için kamu bilincini ve halka erişimi artırmaya yardımcı olur mu?

Tartışmayı somutlaştırmak için çalışma, Ankara'nın tarihi kent merkezi Ulus'taki kentsel arkeolojik miras üzerine CBS tabanlı bir pilot haritalama çalışması sunmaktadır; bir yüksek lisans tezi araştırmasının sınırlamaları göz önünde bulundurularak, analize yalnızca Frig ve Roma dönemleri dahil edilmiştir. Web tabanlı bir CBS platformunun içgöruları, mirasın korunması, muhafazası ve kamu erişimine yönelik tamamlayıcı ve kapsamlı bir platform elde etmek için web tabanlı bir CBS platformu fikri önermek üzere bağlamsallaştırılmıştır.

Ankara, kapsamlı ve sürdürülebilir bir kentsel miras koruma planının eksikliği nedeniyle tarihi kent dokusunu koruma konusunda önemli bir zorlukla karşı karşıyadır. Ankara'nın kentsel dokusuna parça parça yapılan müdahaleler çoğu zaman uzlaşmadan ziyade tartışmalara ve anlaşmazlıklara yol açmıştır. Bu durum sadece bölgesel kalkınma ve kültür turizmi üzerinde değil, aynı zamanda kentin kültürel mirasının, kimliğinin ve imajının tanımlanması ve korunmasının yanı sıra güçlü bir vatandaşlık ve aidiyet duygusunun oluşturulması üzerinde de olumsuz bir etki yaratmıştır.

Ankara'da, Türkiye Cumhuriyeti'nin başkenti olarak ilan edilmesinin ardından 1920'lerin başından bu yana birçok kentsel gelişim projesi hayata geçirilmiştir. Ancak Ulus'un kentleşmesi, özellikle İkinci Dünya Savaşı'ndan sonra, kırsal kesimden kent merkezlerine kitlesel göçlere tanıklık eden, konut sıkıntısına ve kontrolsüz şehirciliğe yol açan benzeri görülmemiş ve yıkıcı bir sürece dönüşmüştür. Ulus'un tarihi ve arkeolojik varlıklarını ve kimliğini koruma kaygısı olmaksızın birçok kentsel yenileme projesi hayata geçirilmiştir. Alanın arkeolojik, tarihi,

kültürel, coğrafi ve sosyal özelliklerinin kentsel gelişim projelerine entegre edilememesi nedeniyle bölge ve arkeolojik varlıklar, uygun olmayan koruma politikalarının ve kentsel planlamanın hedefi haline gelmiştir. Böylece, her uygulamada Ulus'un kültürel mirası daha fazla zarar görmeye maruz kalmıştır.

Bölge, özellikle çok katmanlı kentlerde alan sınırlarının, tarihsel katmanların, dönemlerin, türlerin ve özelliklerin tanımlanması açısından sorun yaratan kültürel mirasın yasal bağlamına ilişkin belirsizliklerden ve tanımlanmamış prosedür ve süreçlerden de muzdarip olmuştur (Bilgin Altınöz, 2002). Koruma yönetmelikleri alana ulaşana kadar birçok katman zaten yok olmaktadır. Bu nedenle, kültürel mirasın korunması ve planlanmasının gelecekteki etkilerinin değerlendirilmesinde kullanılabilir mekânsal bir miras haritası üreterek görünmeyen ve görünen kültürel mirasın düzenlenmiş bir envanterini oluşturmak kaçınılmaz hale gelmektedir.

Ankara ve çevresi, Paleolitik Çağ'a kadar uzanan erken tarihi ile çeşitli kültürlerle ev sahipliği yapmıştır (Erzen, 1946; Aydın vd., 2005). Ankara'nın eski merkezi Ulus'un kentsel bir alana dönüşmesi ise genellikle MÖ 8. yüzyıla tarihlendirilmektedir (Kadioğlu vd., 2011: 13). Dolayısıyla, görünür ve görünmez birçok kültürel kalıntı bu alanda yoğunlaşmıştır. Ankara, Roma döneminden itibaren önemli bir kent haline gelmiştir. Ancak ne Frig kalıntıları ne de Roma mirası etkin bir şekilde korunabilmiştir. Bu bağlamda çalışma, ilk kentsel yerleşim dönemi olan 8. yüzyıla ve MS 5. yüzyıla kadar süren Roma dönemine odaklanmaktadır. Yakın zamanda gerçekleştirilen iki proje, tezin kapsamı açısından önem taşımakta ve örnek teşkil etmektedir. Bunlardan ilki, Orta Doğu Teknik Üniversitesi Mimarlık Bölümü'nden Ela Alanyalı Aral tarafından koordine edilen ve Ankara'daki Frig tümülüsleri ile bilinmeyen kuzey Frig tümülüslerini hava ve topografik fotoğraflar ve haritalar üzerinden inceleyen araştırmadır. Tezin Frig dönemi bölümü bu projeden yararlanmıştır. İkinci çalışma, Ankara Üniversitesi Arkeoloji Bölümü'nden Musa Kadioğlu ve Kutalmış Gökay tarafından Roma Ancyra'sının arkeolojik ve epigrafik açıdan incelenmesi ve arkeolojik buluntularla ilgili mevcut birincil (birinci elden bilimsel bilgi) ve ikincil (antik kaynaklar) verilerin araştırılmasıdır. 2002-2007 yılları arasında yapılan bu çalışmada, yayınlanmış ve yayınlanmamış arkeolojik yapılar

tespit edilmiş ve antik kent planını gösteren dijital bir harita oluşturulmuştur. Tezin Roma dönemi bölümü bu kapsamlı araştırmaya dayanmaktadır. Bu tez, her iki çalışmada hazırlanan ve yayınlanan haritaları bir araya getirerek, çok katmanlılığı ve bunun kamusal farkındalık için sunumunu gösterecek bir CBS platformu önermektedir.

Çalışmanın ilk bölümü, Coğrafi Bilgi Sistemleri (CBS) odaklı kentsel arkeoloji, kamu arkeolojisi ve dijital arkeoloji ile ilgili literatür araştırmasına dayanmaktadır; Türkiye'de miras yönetiminin yasal çerçevesi ve kent planları ile bunların Ankara'daki kültürel miras üzerindeki etkileri de bu bağlamda tartışılmaktadır. Ankara'nın Frig ve Roma katmanlarına ilişkin veriler literatür araştırmasından toplanmış ve buluntular, bulunan kalıntıların ve incelenen verilerin bütünlüğünü göstermek için tablo formatında düzenlenmiştir. Tablolaştırılan verileri ifade etmek ve bir pilot çalışma oluşturmak için iki CBS platformu kullanılmıştır: Buluntuların ve miras yapılarının yerini belirlemek ve mekânsal bilgileri anlamak için *QGIS* ve CBS ile toplumsal katılım potansiyelini daha fazla araştırmak için *ArcGIS StoryMaps*. Görünür Frig ve Roma kalıntılarının miras rotası ve görünmez mirasın sunumunu keşfetmek için Hacı Bayram Tepesi vaka çalışması *StoryMaps* kullanılarak tasarlanmış ve hazırlanmıştır.

Ulus'taki Frig ve Roma mirası haritası *QGIS* yazılımı kullanılarak oluşturulmuştur. *QGIS*, jeo-uzamsal bilgi üzerinde çeşitli veri ve analizlerin uygulanmasına izin veren açık ve erişilebilir bir platformdur. Görünürlük analizi, en düşük maliyetli yol analizi, ağ analizi ve arazi analizi gibi farklı analizler için çok sayıda eklenti sunmaktadır. Ancak arayüzü, bu çalışmada kullanılan diğer CBS platformlarına kıyasla genellikle daha karmaşık olarak algılanmaktadır.

*ArcGIS* ve *StoryMaps* özelliği, web tabanlı bir CBS miras platformu yapısını analiz etmek ve önermek için kullanılmıştır. *ArcGIS*, mekansal analiz, veri toplama ve yönetimi ve 3D coğrafi bilgi gibi çeşitli özellikler sunan ücretli bir haritalama platformudur. *ArcGIS*'in bir özelliği olan *StoryMaps*, bir hikaye anlatmak için interaktif haritaların multimedya içeriği ve metinlerle birleştirilmesini sağlar. *StoryMaps* uygulaması, günümüz dijital çağında zengin ve etkileşimli deneyimler

yaratmak için haritaları ve multimedya içeriğini birleştirme fikri olarak 2011 yılında başladı. Şu anda platformda 2,2 milyon harita barındırılmaktadır. Birçok uluslararası şirket ve kuruluş *StoryMaps*'in mevcut kullanıcılarıdır. Google Analytics ile de entegre olduğu için, platformun erişilebilirliğini ve kullanımını anlamak için kullanıcı istatistiklerine bu özellikten kolayca ulaşılabilir. Bilgisayar, tablet ve telefonlarda da kullanılabilir. Tasarımı ve hizmeti kullanıcı dostu olup, yapısı mekansal verilerin kolayca oluşturulmasına ve takip edilmesine olanak sağlamaktadır. Ayrıca, herhangi bir web sitesiyle uyumlu olması, daha geniş bir kitleye ulaşma kapasitesini artırıyor. Öte yandan, *StoryMaps*'in önceden eklenmiş üç tasarım stiline sahip olması, ek yaratıcı tasarım öğeleri potansiyelini sınırlıyor. Ayrıca, konsept başına en fazla beş fotoğraf yükleme kısıtlaması, kapsamlı bilgi sunumunu engellemektedir. Tezde kullanılan bilgiler, haritalar, fotoğrafik veriler ve diğer görseller yayınlardan ve arşivlerden toplanmıştır. Çalışmada Ela Alanyalı Aral (2017) ile Musa Kadioğlu ve Kutalmış Görkay'ın (2011) çalışmalarından geniş ölçüde yararlanılmıştır. Yerinde inceleme, gözlem ve fotoğrafik belgeleme, toplanan malzemeyi tamamlamıştır. Multimedya bilgilerinin bir kısmı Anadolu Medeniyetleri Müzesi, VEKAM (Koç Üniversitesi Ankara Çalışmaları Araştırma Merkezi) ve Atılım Üniversitesi Ankara Dijital Kent Arşivi'nden derlenmiştir.

*ArcGIS StoryMaps* tarafından hazırlanan tur rotası, Frig ve Roma tarihi katmanlarını kendi miraslarıyla birlikte bir araya getirmektedir ve bu nedenle, kamuya açıklık için örtüşen noktaları kapsamayan önceki çalışmalardan farklı olarak yeni bir konsept olarak durmaktadır. Mevcut envanterler Frig mirasını tanımakla birlikte, genellikle yapılar, eserler ve bunların konumları hakkında detaylı bilgi vermemekte ve bu bulguları diğer kültürel katmanlar ve potansiyel yerleşim alanlarıyla ilişkilendirememektedir. Bu nedenle, bu çalışmada kentin peyzajında neredeyse tamamen gizlenmiş olan Frig katmanının daha kapsamlı bir şekilde dahil edilmesi, Frig mirasına ve korunmasına dikkat çekmek ve bu konuda farkındalık yaratmak için dikkate değer bir fırsat sunmaktadır.

Ayrıca, önerilen bölümlere gerekli eklemelerin yapılmasıyla platform, arkeolojik kalıntıların ve özellikle de günümüzde görünmeyenlerin mevcut konumları hakkında belirli ayrıntılar sağlayabilir. Örneğin, Frig tabakasına ait ortostatlar ile çok sayıda

seramik ve küçük buluntu Anadolu Medeniyetleri Müzesi'nde sergilenmektedir. Benzer şekilde, Roma tabakasına ait buluntular da müzenin Ankara'ya ayrılmış bölümünde sergilenmektedir. Bu bilgiler dijital platform aracılığıyla buluntuların orijinal lokasyonlarında belirtildiğinde, buluntu alanlarının tarihsel önemi hakkında bilgilendirici bir araç olarak hizmet edebilir ve ayrıca kişileri şehir müzesi ziyareti için de teşvik edebilir. Bu entegrasyon, nihayetinde tarihi alanlar ve müze koleksiyonları arasında bir bağlantı kuracak ve Ankara'nın mirasını daha derinlemesine anlamak isteyen ziyaretçiler için genel deneyimi zenginleştirecektir.

İnsanlar, biriktirmeyi tercih ettikleri kültürel ve tarihi bilginin derinliği ve düzeyi açısından farklı önceliklere sahiptir. Hacı Bayram Tepesi örneğinde görüldüğü gibi, farklı kültürleri barındıran bir yer, sadece tek bir kültürel açıdan deneyimlenebilir. Dijital bir miras platformu, miras alanının bütüncül bir şekilde anlaşılmasını kolaylaştırabilir, motive edebilir ve böylece bireylerin daha geniş bir bilgi birikimi geliştirmesine yardımcı olabilir. Oluşturulan *Görünür Frig ve Roma Mirası Turu* rotası, turda vurgulanan birçok miras varlığının navigasyon uygulamalarında, genel rehber kitaplarda ve Ankara'ya adanmış popüler turizm web sitelerinde keşfedilmemiş olduğu gerçeği göz önüne alındığında, mirası ortaya çıkarmak için farklı bir yaklaşım sunmaktadır.

Önerilen rota ve anlatısı, doğası gereği bu tez için incelenen literatürle ve yazarın bakış açısıyla sınırlıdır. *ArcGIS StoryMaps* bir hikaye anlatımı aracı olduğundan, ortak bir anlatı içermelidir. Çalışma, bu anlamda, alana özgü bir anlatı oluşturmaya girmemiş; bunun yerine platformun kullanımı ve kullanışlılığına odaklanmıştır. Bu nedenle, hikaye anlatımı kısmı bilinçli olarak kapsam dışında bırakılmıştır. Öte yandan, platformun farklı bölümleri kapsama kabiliyeti, farklı perspektifler çizmek ve sitenin anlatılarını oluşturmak için dahil edilebilecek her türlü hikayeye olanak tanımaktadır.

Böyle bir platformun yaygın bir şekilde benimsenmesi, kamuya erişim ve katılım için paha biçilmez bir değer taşıyacak ve genel halk arasında herhangi bir kültürel miras alanının daha derinlemesine anlaşılmasını sağlayacaktır. Bu dijital araç, Ortaçağ İslam, İslam, Osmanlı ve Cumhuriyet dönemleri gibi bu çalışmada ele

alınmayan dönemleri de kapsayacak şekilde genişletilerek Ulus için ek katmanlar oluşturulabilir. Ayrıca, Ankara'nın tarihsel açıdan kapsamlı bir incelemesi Hitit katmanını da içererek kentin tarihi dokusunun daha bütüncül bir temsiline katkıda bulunabilir.

Daha ileri araştırmalar için potansiyel yollar şunları içerebilir:

*ArcGIS* ya da CBS ile ilgili diğer platformlardaki *StoryMaps* aracılığıyla katmanlı tarihlere ilişkin benzer araştırmaların bu çalışmada belirlenen farklı yerlerde ve bu çalışmaya dahil edilmeyen başka yerlerde yaygınlaştırılması.

Ankara için tüm kültürel katmanları içeren kapsamlı bir web tabanlı CBS miras platformu oluşturmak üzere benzer bir CBS platformunun bir web sitesine yerleştirilmesi.

Bu platformun bir mobil uygulamaya entegre edilmesi, alandaki bilgi panolarında ziyaretçileri interaktif platforma bağlayan ve derinlemesine multimedya bilgileri sunan QR kodlarının yer alması.

Uygulamaya yorum ve içerik paylaşma özelliklerini dahil ederek ziyaretçi etkileşimini sağlamak, böylece kültürel miras alanıyla etkileşime girme deneyimini geliştirmek.

Bu çalışmanın zorluğu, kapsamlı veri toplama görevinde ve tüm tarihi bilgilerin eşit önemde ele alınması gerektiğini kabul ederek dengeli ve anlatı odaklı bir yaklaşımla bir platform oluşturmanın öneminde yatmaktadır. Dolayısıyla, böyle bir çalışmanın çok yönlü doğası göz önünde bulundurulduğunda, objektif, tarihsel açıdan doğru ve uyarlanabilir içerik üretmek için çeşitli disiplinlerden profesyonellerin işbirliği yapması elzemdir.

Bu vaka çalışması, mütevazı bir kapsamda da olsa, bir yerin verilerinin ve tarihi öneminin ortak çalışmaya dayalı ve çok disiplinli bir yaklaşımla etkili bir şekilde kaydedilebileceğini, paylaşılabilirliğini ve zenginleştirilebileceğini göstermiştir.

Çeşitli bilgi türlerini dijital olarak entegre eden ve toplumsal katılımı hedefleyen bu çalışma, kültürel mirasın korunmasına yönelik çok disiplinli bir yaklaşım için giriş niteliğinde bir çerçeve çizmektedir. Böylece, CBS tabanlı dijital haritaların kullanımıyla, arkeolojik, sosyal, kültürel ve tarihi verilerin varlığını ve bilgisini gelecek nesillere aktarmayı amaçlayan kapsamlı, geliştirici ve eğitici bir envanterleme fikri sunmuştur.

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### YAZARIN / AUTHOR

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**Adı / Name** : Ecem Ayşe  
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