

Problems of Conservation of Defense Structures in Türkiye

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Abstract

Defense structures emerged to provide security to communities and protect them from attack. Over time, it has been seen that it is used for the purpose of regulating the city management and economy, ensuring the continuity of peace when necessary, and auditing. Defense structures are the documents of the social, cultural, economic, political, systematic, and social characteristics of the society that created the work. Considering that it provides access to information about human history, wars, cities, and civilization in the examination of artifacts, all kinds of monetary, physical, technical, community, and scientific efforts should be made to protect and transfer their assets to future generations. This article focuses on evaluating the current state of defensive structures located within the borders of our country throughout historical processes, identifying the problems encountered due to climate, environmental factors, and human impacts, and developing sustainable conservation proposals. Within the scope of this study, it was aimed to contribute to raising awareness on the subject by drawing attention to the history, change, and architectural importance of the defense structures and to the protection problems.

Keywords: Defense structure, immovable cultural heritage, restoration, urban planning, re-evaluation.

Türkiye’de Savunma Yapılarının Koruma Sorunları

Öz

Savunma yapıları topluluklara güvenliği sağlama ve saldırıya karşı koruma amacıyla ortaya çıkmıştır. Zamanla kent yönetimi ve ekonomisinin düzenlenmesi, gerektiğinde barışın sürekliliğinin sağlanması ve denetim amaçları içinde kullanıldığı görülmektedir. Savunma yapıları, eseri meydana getiren toplumun sosyal, kültürel, ekonomik, siyasal, bilimsel ve toplumsal özelliklerinin belgesi niteliğindedir. Eserlerin incelenmesinde, insanlık tarihi, savaşlar, kentler ve uygarlığı hakkındaki bilgilere ulaşılmasına olanak sağladığı düşünüldüğünde koruma ve varlıklarını gelecek nesillere aktarabilmek için gerekli her türlü ekonomik, fiziksel, teknik, çevresel ve bilimsel çabanın gösterilmesi gerekmektedir. Bu makale, ülkemiz sınırları içerisinde yer alan savunma yapılarının tarihsel süreç içerisindeki mevcut durumlarının değerlendirilmesine, iklim, çevresel faktörler ve insan etkileri nedeniyle karşılaşılan sorunların tespit edilmesine ve sürdürülebilir koruma önerilerinin geliştirilmesine odaklanmaktadır. Bu çalışma kapsamında savunma yapılarının tarihi, değişimi, mimari öneminin belirlenmesi ve koruma sorunlarına dikkat çekilerek konuyla ilgili farkındalığın artırılmasına katkı sağlamak hedeflenmiştir.

Anahtar kelimeler: Savunma yapısı, taşınmaz kültür varlıkları, restorasyon, kentsel planlama, yeniden değerlendirme.

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1. Introduction

Defense is an expression of one of humanity's most fundamental instincts: the desire to remain safe. Throughout history, societies have sought and developed various defense methods to protect their values against external threats and dangers. In the earliest periods of human history, defense methods provided by equipment such as stones, weapons, spears, and armor evolved over time with the formation of communities, the establishment of cities, and the transition to a permanent lifestyle. With the shift to a sedentary life during prehistoric times, the aim of ensuring the security and continuity of regions led to the emergence of defensive structures. Factors such as the importance of the place to be defended, the technological levels of the civilizations that would build the structures, the structural properties of the materials, and the topographic conditions influenced the development of various forms of defensive architecture.

With the emergence of city-states, wall systems began to develop, and military structures such as castles, walls, watchtowers, bastions, and citadels were built for this purpose. For many years, walls were the most important means of defense. Towers constructed adjacent to defensive walls provided visual flexibility and strategic advantages, particularly at roads, passes, and locations adapted to topographical features, offering the opportunity to withstand prolonged sieges with their high and thick walls. Castles strengthened with towers, bastions, and embrasure systems, designed according to the principles of warfare, were structures with thick and high walls suitable for sheltering and protecting people and soldiers against enemy attacks and external threats. When examining defensive structures and their dynamics, it is observed that walls, towers, and castles provided resilience against sieges.

An analysis of the defensive structures and settlements of ancient cultures reveals the use of materials such as stone, wood, earth, adobe, and clay. When the development of defensive structures is examined from the periods of Ancient Egypt, the Hittites, Babylon, Ancient Greece, and Rome up to the end of the Middle Ages, it is understood that these structures underwent significant architectural transformations. During the Middle Ages, city defense systems first evolved into new forms and subsequently became entirely obsolete from the late 17th century onwards due to the rapid advancement of weaponry systems, particularly cannons (Efeoğlu & Eyüpgiller, 2021, p. 394).

Technological developments and industrialization that emerged with the industrial revolution ushered in a new era in the world. While there were important developments in scientific, technological and industrial fields, in this period rapid urbanization, rapid population growth and the transition from a production society to a consumption society are important factors that have caused problems (Yalçinkaya & Karadeniz, 2022, p. 751). Industrialization and economic changes brought about large-scale migrations, leading to the expansion of cities beyond their historic walls and the construction of new buildings. As walls lost their original function, they began to serve as reflections of the cultural and architectural heritage of past civilizations. However, with the city's growing need for new transportation networks, combined with natural causes, disasters, and various interventions, the walls and gates were strained; the addition of new structures in their vicinity resulted in significant damage to the defensive structures (Arabacıoğlu & Aydemir, 2010).

In this article, the definition, historical background, architectural features, and transformations of defensive structures over time are discussed. Subsequently, the conservation of defensive structures is addressed under the headings of urban planning, restoration, and adaptive reuse. In the final section, a general classification of the conservation problems of historical defensive structures, which must be transmitted to future generations, is made, and their scope is outlined.

2. Material and Method

This study has been undertaken to interpret the current conditions of defensive structures within the borders of our country throughout historical processes, to identify the problems they encounter due to climate, environmental, and human impacts, and to develop sustainable conservation proposals related to their preservation. The research has been designed based on the qualitative (qualitative)

research method, utilizing academic literature published in the field of cultural heritage, conservation reports, field observations, and expert opinions as the primary materials.

In the first stage, academic studies focusing on the historical development of defensive structures in Turkey, the causes of their deterioration, and current conservation practices were examined. The theoretical framework of the study was established based on information obtained from these sources. Accordingly, the problems encountered in the conservation of defensive structures have been examined under four main categories: physical problems arising from environmental impacts, issues caused by incorrect restoration practices, problems related to unplanned and uncontrolled urbanization, and administrative and legal deficiencies.

Proposals developed according to the identified problems were made by considering UNESCO's cultural heritage conservation principles, ICOMOS declarations, and the current conservation legislation in Turkey. Examples such as the restoration projects of the Istanbul Land Walls and the Diyarbakır Walls have also been evaluated as references.

3. Findings and Discussion

The transition of humans from hunter-gatherer societies to settled life required the development of certain protection and defense strategies to secure the areas they inhabited, to defend against external attacks, and to launch counterattacks when necessary; these strategies were generally formed by taking advantage of topography (Kök & Sayar, 2022). It is accepted that these structures were established in locations suitable for defense, that cities developed within defensive walls, and that ports and strategic points were separated from the outside world through castles and bastions, thus facilitating urbanization.

Military structures were built to ensure the security of cities and their inhabitants. Certain measures taken out of security concerns included the construction of living spaces either clustered together or stacked atop one another, providing access and transportation via rooftops, the excavation of moats or the building of walls, and the construction of stone barricades (Efeoğlu & Eyüpgiller, 2021, p. 400). With territorial expansion, surrounding cities with walls remained a method used for a long time to protect and control boundaries. Enclosing cities with defensive walls to define their limits and to take precautions against dangers became one of the effective defense methods.

It is observed that until the end of the Middle Ages, defensive structures not only served to protect cities from external threats but also played roles in regulating city governance and economy, ensuring the continuity of peace, and controlling urban expansion. Structures such as castles, walls, and citadels, possessing common characteristics, became prominent to secure settlements and transportation routes of strategic importance, and to protect the wealth of rulers against external threats (Keçici, 2008). The primary purpose of constructing castles and fortified walls was to protect against enemy attacks and to resist powerful forces approaching from outside. Castles are military structures with thick and high walls, built in strategically important cities, passes, and routes expected to experience enemy advances for defensive purposes.

In addition to their military functions, castles also served as administrative, political, and economic centers. Castles were typically built at locations such as riverbanks, hilltops, mountains, coastlines, straits, islands, crossroads, main roads, or strategic passage points (Togan, 1981). The most common castle plans include a courtyard surrounded by high and thick fortifications and towers (bastions). Towers are generally square or cylindrical in shape and are at least twice as high as their width. Towers are important for detecting the enemy early and taking precautionary measures (Sevgen, 1959).

With the evolution and development of warfare systems, the construction of assault towers also began. Defense structures create concrete documents that represent the wealth and power of their location to the outside world and explain the defense strategies, history, and developments along with the military attack. As seen in the example of the Istanbul Land Walls, the city wall and its immediate surroundings can be said to be an open historical military museum. Especially because of these values, the walls are registered as an important "architectural and military cultural heritage" that needs to be protected today (Perouse, 2003, p. 31).

Defense structures are the documents of the cultural, economic, political, scientific, and social characteristics of the society that created the work. Considering that the works document, the history of humanity, wars, cities and civilization, all kinds of economic, physical, technical, social, and scientific efforts should be made in order to protect and transfer their assets to future generations. Defense structures are generally assets that need to be preserved in situ and cannot be transported from one place to another. While examining, the structure of the material used in the construction of the work, the conditions of the topography, as well as the social, cultural, political, economic characteristics, techniques, and lifestyles of the society should be taken into consideration. Strategic plans should be developed for the protection of historical monuments that define the historical city boundaries and survive until today, such as the city land and sea walls, whose duty is to defend the city (Ricci, 2013).

3.1. Defensive Structures in Türkiye

Our country holds a strategic position that has been the center of many civilizations throughout history. It is observed that numerous defensive structures classified as castles, walls, citadels, redoubts, towers, watchpoints, shelters, and underground cities are present in Turkey. These structures, where the traces of many civilizations can be read, bear great importance as cultural heritage fulfilling military, political, economic, and social functions. Built to meet all the needs of their time, strengthened over the centuries, they have been preserved today as historical heritage (Köprülü, 2023). Defensive structures can be found across the entire geography of Anatolia. The defensive structures left by each civilization were reorganized according to the needs of subsequent civilizations. It is observed that these reorganizations sometimes involved rebuilding, sometimes repairing, and sometimes expanding, resulting in physical changes.

Castles are structures built in strategic regions for defensive purposes. Many castles were constructed during the Roman, Byzantine, Seljuk, and Ottoman periods in Anatolia. For example, the Alanya Castle (1221-1227), one of the significant defensive structures of the Seljuk period, was built by Seljuk Sultan Alaeddin Keykubad I. Located in a strategic position against potential attacks from the sea (Figure 1), this castle is one of the unique examples of Seljuk architecture (Ertuğrul, 2018). The Konya Alaeddin Hill Castle, built to protect the Seljuk capital, also served as one of the major administrative centers of its time (Köprülü, 2023). In the east, Van Castle, with roots going back to the Urartian period, was later utilized by the Seljuks and the Ottomans as well (Küçük, 2022).



Figure 1. Located of Alanya Castle (Google Maps, 2024)

Walls are structures surrounding cities built for defense purposes. They are important as they express measures taken to ensure the safety and continuity of settlements or regions and to protect them from external attacks. These include military structures such as castles, fortified zones, walls, and bastions. Such defense fortifications can generally be divided into two categories based on the construction materials and geographical features: permanent and temporary structures. Permanent fortifications

were built by engineers using durable materials funded by state resources, whereas temporary fortifications were made during campaigns with labor and materials sourced locally to meet short-term needs (Ülkü, 2007). The Istanbul Land Walls were constructed during the Byzantine period and continued to be used during the Ottoman period (Eyice, 2001). The Diyarbakır Walls, initially built in the Roman period and later expanded during the Byzantine period (Yalman, 2014), were strengthened and preserved by the Seljuks and the Ottomans (UNESCO, 2024).

Although the Hattusas City Walls date back to the Hittites, they have continued to play multiple roles throughout Turkish history and maintained their importance (Küçük, 2022), (Figure 2).



Figure 2. Hattusas City Walls (Google a, 2024)

Citadels are structures like castles but built on a smaller scale for the purpose of protecting specific regions. Redoubts, especially during the Ottoman period, were designed as artillery placements and constructed as resistant structures against enemies. In the 19th century, with the advancement of firearms, redoubts became prominent elements in defensive systems (Ülkü, 2007).

During the Ottoman period, the Rumeli Fortress (1452) and the Anadolu Fortress were built to control the Bosphorus Strait. Kars Castle and Gaziantep Castle played significant roles in the defense of the eastern and southern frontiers of the Ottoman Empire (Küçük, 2022). Moreover, the Kilitbahir and Seddülbahir Castles at the Dardanelles Front during World War I are among the important defensive structures, holding both military and symbolic value (Ertuğrul, 2018).

Today, these structures, beyond their military functions, stand out with their historical and cultural significance. The Diyarbakır Walls, for instance, are listed on the UNESCO World Heritage List (UNESCO, 2024). These works reflect both the historical richness and the strategic importance of Turkey. Towers are structures usually built at elevated locations to monitor the surroundings. They function to observe enemy movements and ensure communication in times of danger.

In Anatolia, towers are frequently found particularly in frontier regions and at strategic passes (Türkmenoğlu, 2021). Shelters are structures created to provide refuge for people during dangerous periods. The underground cities in the Cappadocia region have allowed for defense and the continuation of life. These underground structures, with their hidden passages and tunnel systems, served defensive purposes for years and have survived to the present day (Kuban, 2010), (Figure 3). The preservation of these works has become increasingly important due to the threats posed by modern urbanization, climate change, and human-induced damage.

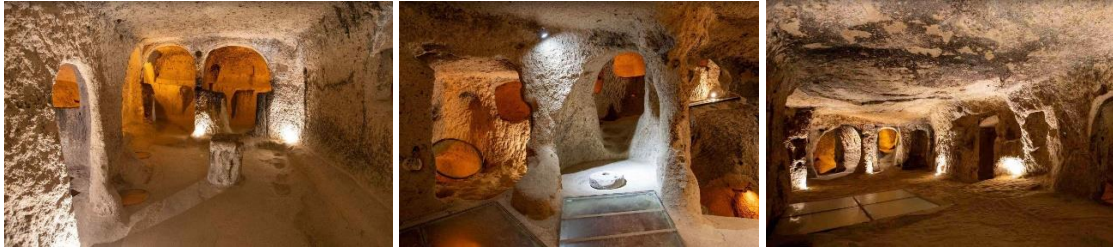


Figure 3. Underground Structures in Cappadocia (Google b, 2024)

3.2. Temporal Transformation of Defensive Structures

Throughout history, defensive structures have undergone significant transformations in parallel with changing warfare technologies, social structures, and urban developments (Keegan, 1995). The earliest examples were usually simple earthen walls, moats, and wooden palisades. Later, with the advancement of construction techniques, stone was widely used, and complex structures like multi-layered fortifications, bastions, and towers emerged. In medieval Europe and the Middle East, city walls, citadels, and castles became the symbols of urban identity, security, and power (Yalman, 2014).

While defensive structures initially developed primarily to counter siege warfare, changes in weapon systems, especially the introduction of artillery and gunpowder in the 14th and 15th centuries, caused major transformations in fortification techniques.

As a result, new wall designs such as star-shaped bastions, low and thick walls, and angled structures that could better withstand cannon fire were adopted (Büyükçam, 2021).

During the Ottoman period, significant fortification projects were undertaken, including the strengthening of castles, the repair and expansion of city walls, and the construction of coastal fortifications along strategic waterways (Köprülü, 2023). With the Industrial Revolution and modernization movements in the 19th century, the importance of classical defensive structures diminished. Instead, more mobile armies and different military strategies came to the forefront.

Consequently, defensive structures largely lost their military functions and began to serve historical, cultural, and touristic purposes. In the 20th century, especially after World Wars I and II, many defensive structures were neglected due to new urbanization needs or destroyed by various interventions. However, with the increasing importance of cultural heritage conservation in the 21st century, defensive structures have been re-evaluated as crucial assets that reflect historical identity, urban memory, and architectural heritage.

3.2.1. Temporal transformation of defensive structures in Türkiye

When examining the evolution of defensive structures in Anatolia, it is observed that developments occurred in parallel with the general evolution of world defense architecture, while also bearing unique regional characteristics. The defensive structures from the Hittite, Urartian, Phrygian, and Lydian civilizations often consisted of earthen ramparts, stone walls, and fortified settlements adapted to the natural topography (Küçük, 2022). During the Hellenistic period, cities were surrounded by high stone walls with towers at regular intervals (Figure 4).



Figure 4. Hellenistic Period Towers (Google c, 2024)

City planning began to be shaped based on defense strategies. Structures such as city gates, fortified acropolises, and citadels became prominent (Yalman, 2014). In the Roman period, defensive structures evolved with more regular and geometric plans.

The Romans made significant advances in building technologies, constructing durable walls, gates, and fortresses (Eyice, 2001). During the Byzantine period, city walls were reinforced with double or triple lines and moats.

The Istanbul Land Walls, completed in 413 AD during the reign of Emperor Theodosius II, stand as an outstanding example of this era's defensive systems (UNESCO, 2024) (Figure 5).



Figure 5. Theodosius II Land Walls in İstanbul (Google d, 2025)

With the Seljuks, the construction of castles adapted to the topography became widespread.

Seljuk castles, using rubble stone, cut stone, and brick materials, often employed angular and circular bastions, embracing the advantages offered by natural elevations (Efeoğlu & Eyüpgiller, 2021).

During the Ottoman period, defense-oriented structures such as castles, city walls, coastal fortifications, redoubts, and bastions were developed based on the empire's needs and expanding borders (Kuban, 2010). Important structures such as Rumeli Fortress, Anadolu Fortress, Kilitbahir Castle, and Seddülbahir Castle were built to control straits and critical passages (Ertuğrul, 2018) (Figure 6, Figure 7).

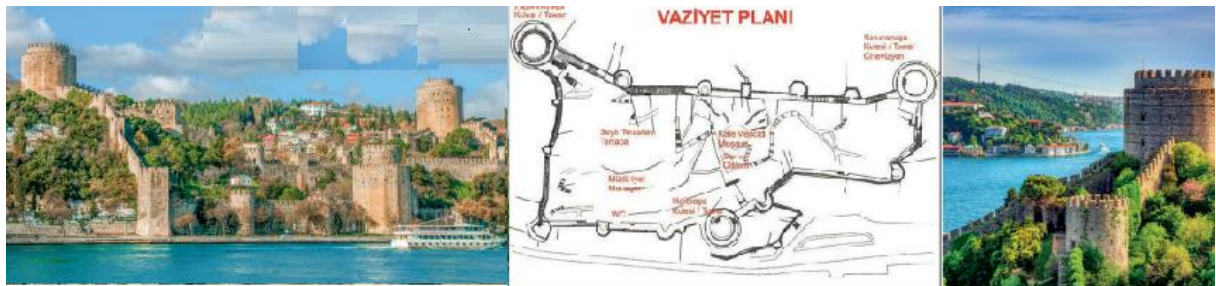


Figure 6. Rumeli Fortress (Google e, 2025)

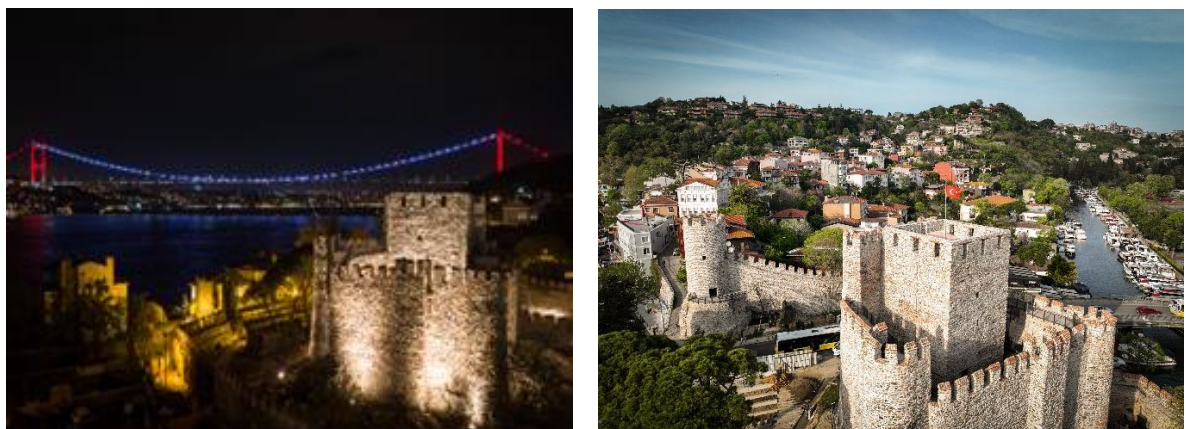


Figure 7. Anadolu Fortress (Google f, 2025)

In the 19th century, with the impact of modernization movements, traditional defensive structures lost their former importance. Accordingly, forts were designed as structures buried underground or camouflaged to be resistant to cannon fire. The Aziziye and Hamidiye forts around Istanbul are the products of this transformation (Ülkü, 2007).

As the nature of warfare changed during the Republican era, the need for castles or walls in the classical sense decreased and was replaced by underground shelters, radar stations and modern military base structures (Babul, 2021). Today, many historical defense structures are preserved as cultural heritage, and their sustainability is ensured through functions such as tourism or museums. The transformation of defense structures in Turkey can be described as the reflection of socio-economic and technological changes on space. The understanding of protection in these structures, which are cultural heritage, is of international importance due to the storage and maintenance of cultural memory.

New urbanization movements led to the demolition or transformation of many walls and castles. Nevertheless, defensive structures continued to survive as elements that preserve the cultural and architectural memory of cities. In contemporary times, defensive structures in Turkey have been recognized as cultural assets that must be preserved. Within the scope of both national legislation and UNESCO World Heritage efforts, many defensive structures have been documented, restored, and opened to tourism.

3.3. Problems in the Preservation of Defensive Structures

Defensive structures, due to their historical and architectural importance, must be preserved and transmitted to future generations. However, today, numerous problems are encountered in the conservation of these structures. The primary issues can be categorized under four main headings:

3.3.1. Physical problems caused by environmental factors

Defensive structures, being exposed to natural conditions over the centuries, have suffered deterioration due to climatic factors such as temperature changes, precipitation, wind, humidity, and biological factors like plants, moss, and microorganisms. Cracks, pores and slippage are observed especially in the stones in the exposed sections, and if the necessary intervention is not made, it leads to the deterioration of the integrity of the structure (Yalman, 2014).

Earthquakes, floods, landslides, and other natural disasters also cause serious physical damage to the structures.

3.3.2. Problems arising from incorrect restoration practices

Incorrect or insensitive restoration interventions can lead to the irreversible loss of original materials and designs of defensive structures.

Interventions that disregard the authenticity and historical integrity of the structures, the use of inappropriate materials, poor workmanship, and incompatible architectural approaches constitute major threats to preservation (Kuban 2010).

3.3.3. Problems related to unplanned and uncontrolled urbanization

Rapid urbanization and population growth, especially in developing countries, cause historical structures to remain under intense construction pressures.

Unplanned settlements, infrastructure projects, transportation networks, and modern structures constructed near historical defensive structures threaten the integrity, visibility, and historical context of these works.

3.3.4. Administrative and legal deficiencies

Inadequacies in conservation legislation, the lack of effective control mechanisms, insufficient resources and budgets allocated to conservation activities, the absence of specialized personnel, and the failure of coordination between responsible institutions hinder the conservation of defensive

structures. In some cases, despite legal protections, effective implementation cannot be achieved. (Çelik, 2016).

3.4. Solution Proposals for the Preservation of Defensive Structures

In order to ensure the preservation of historical defensive structures and to transmit them to future generations, the following solution proposals have been developed.

3.4.1. Urban planning and conservation plans

It is necessary to establish integrated urban development and conservation plans that prioritize the conservation of defensive structures and their surroundings (Kuban, 2010).

Urban transformation projects, transportation and infrastructure investments, and new constructions should be planned in a manner that preserves the historical and physical context of these structures. (Marino, 2001). Planning solutions should be created that ensure the preservation of elements such as wind corridors, plant elements, and sunlight, which were considered to have an impact on the structure during the period when the cultural asset was built, in the same way. Cultural heritage needs to be protected from the pressure of growing settlement areas through planning. The basic solution to do this is to direct the population to other regions. The specified plan level is the social plan at the national scale. Social plans provide data for the sustainability of natural and cultural resources to the physical plans at the lower level. Therefore, plans need to be made in a hierarchical order (Suri, 2019). The purpose in the phenomenon of conservation is to preserve the old with correct and scientific methods. Repairing artifacts requires both money and time. Money is needed for repair; time is needed for research. From these perspectives, antiquities conservation is a process that cannot be rushed (Tapan, 2007).

3.4.2. Proper restoration and intervention principles

In restoration projects, adherence to scientific principles and international conservation charters such as the Venice Charter and the Burra Charter should be ensured.

Original materials should be preserved as much as possible, interventions should be reversible, and authenticity and historical integrity should be respected. All documents should be archived with written and digital records (Ahunbay, 1996). Care should be taken to ensure that interventions are carried out at a minimum level and with the principle of original materials. The load-bearing system of the structure should be strengthened without damaging its original structure, and elements that were added later and disrupt the integrity of the structure should be eliminated (Kuban, 2000). In these processes, it is necessary to work in cooperation with expert architects, restorers, material engineers, art historians and many related disciplines.

With the decision numbered 5738 published in the Official Gazette, the “Procedures and Principles Regarding the Procurement of Goods and Services for the Repair and Restoration of the Cultural Heritage to be Protected and for Landscape Arrangements” were determined (Official Gazette, 2022). It was stated that the purpose of the decision was to determine the procedures and principles regarding the evaluation of cultural properties with surveying, restitution, restoration projects, street improvement, landscaping projects and their applications, and the procurement of goods and services for preservation, transportation, and excavation works. The new regulation covers the procurement of goods and services related to the protection, repair, and restoration works of cultural properties within the scope of Law No. 2863 on the Protection of Cultural and Natural Assets (Official Gazette, 1983). In this way, the relevant historical buildings were separated from other construction work tenders and handled with a different arrangement. Due to the absence of a special law on the protection of defensive structures, it is necessary to conduct an examination within the scope of the Law on the Protection of Cultural and Natural Assets No. 2863, the Regulation on the Detection and Registration of Immovable Cultural Heritage and Sites to be Protected (Official Gazette, 2012), and the Regulation on the Construction Principles and Control of Immovable Cultural Heritage to be Protected (Official Gazette, 2005).

3.4.3. Legal and Administrative Regulations

Raising Public Awareness: For conservation to be sustainable, the local population must embrace and take ownership of the cultural heritage.

Educational programs, public information campaigns, cultural events, and tourism activities can help increase awareness about the historical value of defensive structures and the necessity of conservation.

Administrative and Legal Strengthening: Conservation legislation should be strengthened, and clear definitions regarding the conservation of defensive structures should be included.

Specialized personnel should be trained, technical and financial resources should be increased, and inter-institutional cooperation should be enhanced.

The application of legal protection should be effectively monitored.

Documentation and Risk Management: Detailed documentation (mapping, photography, 3D scanning, etc.) of defensive structures should be conducted. Risk analysis should be carried out to evaluate the threats posed by natural disasters and human impacts, and emergency action plans should be prepared.

3.4.4. Adaptive reuse and re-evaluation

In cases where appropriate, the reuse of defensive structures for cultural, touristic, or educational purposes without damaging their authenticity can contribute to their conservation (Aydın & Okuyucu, 2009, s. 36).

However, adaptive reuse projects must be designed with great sensitivity to the original values of the structures. Historical buildings with cultural, economic, and symbolic value can be reused with a contemporary function (Aydın & Okuyucu, 2009, p. 36). It can be said that throughout history, palaces have been converted into residences, Roman and Greek temples into churches, churches into mosques, and today, caravanserais and complexes have been converted into hotels and restaurants. In terms of sustainability, it is necessary for the building to be reused because of changing or transforming by taking some new functions as a result of not meeting its old function on an urban and structural scale, keeping up with the current time. While doing this, it ensures that it is reintegrated into society, that it is beneficial to people, and that the environment benefits from it (Zorlu, et al., 2018). Materials that continue to function structurally in their current state can be reused by rehabilitation of others (Emekçi, 2021, p. 541).

Heritage buildings, which are bridged between the past, present, and future, contributes to the formation of social belonging and identity of cities. Preserving and sustaining the architectural cultural heritage and integrating it with contemporary life support, and cultural and environmental development, ensures the continuity of traditional knowledge (Büyükcım, 2021, p. 570).

In the specified scope, starting with the urban planning studies developed because of social, cultural, anthropological, and archaeological studies, restoration should be carried out if the protection and therapeutic conservation methods that should be done before the restoration decision are not sufficient. Reconstruction, the process of determining the old form of a building with the help of its remains and other documents, should not be confused with restoration and preservation. It should not be intended to destroy the historical structure and it should be stated that the structures were reconstructed in order not to mislead history.

In the ICOFORT charter of ICOMOS, it aims to contribute to the preservation of the tangible and intangible cultural values of the fortifications as unique examples as places of memory. He stated that defensive structures provide the purpose of protecting and improving the quality of the human environment through urban landscape and regional studies, that structures and cultural landscapes can contain important archaeological information and can provide information about the past uses of these places that cannot be obtained from historical sources. Historical structure it only gains meaning when it is arranged together with its environment (ICOFORT,2020, Ertay Besir et al., 2022, p.44).

It also states that fortifications are not typical buildings, their architecture varies from simple structures to complex multi-structure defense systems developed over time, depending on topography and defensive techniques, and has certain characteristics and values that are completely or partially different from other types of architectural cultural assets. It is stated that the recognition of the values of these structures is necessary for the success of the conservation efforts and interventions. These values are listed in order of importance as follows:

Military values: Defense structures respond to a particular war technology. These structures, with their architecture, developed depending on the attack and defense strategies used and the development of weapons, have very important values to understand and explain the developments in military science and engineering.

Regional/geographical values: Defense structures also have important values as a system that regulates the morphology of the region and city they defend.

Cultural landscape values: The cultural artistic landscape values provided by the majestic and dominant image of the defensive structures or complexes over their surroundings should also be considered.

Memory/Identity/Educational values: Defense structures can play an important role in society's memory. They reflect the conflicts, and social and economic structures experienced at the time of their creation. They provide an intense, even personal, learning experience from events that have played a role in the history of communities. By integrating with the urban landscape, they can create a collective imagination in individuals and communities. In this respect, it is seen that they have educational values and can provide a stimulating and enriching environment for the development of individuals in connection with the cultural experiences brought by the reading of military heritage.

Historical document value: The events that led to the construction of the walls, the traces of the wars that took place in time extending to the present day, the historical values associated with their use, and their current meanings and associations are the whole.

Social and economic values: In addition to the value they bring for the country and the people of the region, they are the common heritage of humanity, as well as their social and cultural relations for different communities and especially their contribution to tourism, it is very clear that they create economic wealth and have a stimulating effect for the recognition of social and cultural values.

Principles of intervention in defense structures: ICOFORT foresees considering the "values" stated in the definition of the parameters of the intervention. Therefore, the recognition of these values by the research team constitutes the first methodological step of the interventions to be made. This team should be multi-disciplinary and at least include military history, architecture, art history, construction materials and should consist of experts in the fields of technology, archeology, and landscape architecture. These experts should work with community leaders to ensure that any response is acceptable to the local community. The guidelines produced by this preliminary working group should be considered in any response project related to the structure and its environment, and the team should support the monitoring, development, and implementation of the current response.

a) Defence structures, as part of our cultural assets, should be addressed primarily with upper-level plans and protection areas should be determined at regional and urban scales. Each level plan prepared within the framework of the plan hierarchy should take the principles of protecting cultural assets at the spatial and structural scale from the upper level. In other words, plans should convey to the lower-level plan, in clear and plain language, the information that will enable the environmental and spatial protection of cultural assets.

b) All interventions should be based on a holistic integration of defense systems and environmental values.

c) All interventions should be respectful and appropriate to the military heritage elements and features of the building, the choice between "traditional" and "innovative" techniques should be evaluated on

a case-by-case basis, and those that show the least spread among the structural original architectural heritage values of the building and are most compatible with them should be preferred.

d) All interventions must be respectful and appropriate to the cultural heritage elements and characteristics of the building. The choice between “traditional” and “innovative” techniques must be evaluated on a case-by-case basis. Techniques that conflict least with and are most compatible with the original architectural heritage values of the building should be preferred

e) Harmony between the historical materials and the materials used for structural restoration should be sought, they should be at least impressive to the original building, and the intervention should be aesthetically sensitive and compatible with the original building and environment.

4. Conclusion and Suggestions

The most important and effective way to preserve and sustain the values carried into the present day by defensive structures is, first and foremost, to define the place of cultural heritage assets within higher-level planning frameworks in a holistic manner and to evaluate their significance within historical and archaeological contexts. This evaluation includes defining the functions surrounding the monument in a way that is appropriate to its historical background and meaning, arranging the environment accordingly, ensuring accessibility, visibility, and walkability, providing information about the monument, and fully considering its significance within the urban landscape. Museums protect cultural heritage values in the best possible way, present the works and ensure their up-to-datedness. It is one of the most effective tools for it includes its components (Eyvazova, 2018, p.84).

The expectations of the people of the environment, especially the land and building owners, and the municipalities from these areas may differ from the objectives of the conservation development plans. It should be preferred to resolve these differences by creating mutual discussion platforms, go deeper into the subject, produce the right solutions by informing and consulting the environment by conducting research and investigations, sharing the projects with the public, and choosing qualified solutions. It is possible to protect the city walls and the context they are in, open the policy of the planning activity to participation, explain the projects to the public, support creative efforts and research by the public, discuss the projects, and adopt them by the public, the people of the city and those living in the immediate vicinity.

Interventions on defensive structures do not differ from the general restoration principles and rules. However, the most important issue to be noted about restoration is the management of the restoration activity. International norms are suitable for structuring experience sharing and participation and project management and reveal a background. The framing and scope of interventions according to these norms must be open to participation and have a public character. The architect, who undertakes the task of restoring a historical monument, should be more attentive and sensitive to the features of the monument that fall within the scope of art, except for an arrangement that can be seen as a structural activity. This responsibility cannot be left solely to practitioners. This sensitivity is not limited to the restorer architect only. It should cover the whole team, especially working workers and craftsmen, who are involved in this activity. As stated by ICOFORT, the project authors, who should be consultants to the administration in practice following the approval of the projects, are required to supervise every stage of the intervention undertaken by the contractor in order to ensure the correct implementation of the project after the tender.

On the other hand, as organizations such as EUROPA NOSTRA and UNESCO constantly draw attention to, there should be a mission-oriented structure and a research center that can cooperate with national and international scientific circles, develop experience, and establish ties in the protection of defense structures in our country. With its defense structures dating back to the Middle Ages in this geography, it can lead the world like a center, a laboratory in this field. It should be obligatory to establish an independent center that can carry out material, workmanship, construction technology, documentation, inventory, and typology studies, as well as provide training and formation on these issues. At the same time, it will ensure environmental sustainability through appropriate material selection by combining energy and building technologies (Emekçi, 2021, p. 541).

This organization will make a great contribution to the restoration and environmental design studies to be carried out as well as the solution to the problem of governmentality. Since the beginning of the 2000s, the recommendations regarding governmentality, which have been repeatedly voiced at international meetings held in Istanbul on this issue and conveyed to responsible and authorized institutions and persons in declarations, have been severely damaged, but it is still not too late and should be considered. Since defense structures are a historical document and an important heritage, their original values should be preserved and evaluated in international status.

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References

- Ahunbay, Z. (1996). Tarihi Çevre Koruma ve Restorasyon. İstanbul, YEM Yayını.
- Arabacıoğlu, F. P. & Aydemir, I. (2010). About the Contemporary Problems of Preservation and Revalorization of the Istanbul City Walls, *Europa Nostra* 58, 9-16. İstanbul, Access Adress (06.09.2021): https://www.academia.edu/33368066/ISTANBUL_LAND_WALLS_AND_THEIR_ENVIRONS_WITHIN_THE_CONTEXT_OF_REVALORIZATION_OF_THE_CITY_WALLS
- Aydın, D. & Okuyucu, Ş. E. (2009). Yeniden Kullanıma adaptasyon ve sosyokültürel sürdürülebilirlik bağlamında Afyonkarahisar Millet Hamamının değerlendirilmesi. *Megaron*, 4, 1, 35-44. İstanbul, Access Adress (05.11.2022): https://jag.journalagent.com/megaron/pdfs/MEGARON_4_1_35_44.pdf
- Babul, E. (2021). 19. yüzyıl savunma yapıları: Trabzon Tabyaları üzerine bir inceleme, *Karadeniz Araştırmaları Enstitüsü Dergisi*, 7/13, 215-247. DOI: 10.31765/karen.1010617 Access Adress (05.11.2022): <https://dergipark.org.tr/tr/download/article-file/2030330>
- Büyükçam, S. (2021). Kültürel mirasın sürdürülebilirliğinde bir yaklaşım olarak yeniden kullanım: Samsun Taşhan, *The Journal of International Social Research*, 14/77, ss569-579. ISSN: 1307-9581; 9doi prefix:10.17719/jisr Access Adress (12.11.2022): <https://www.sosyalarastirmalar.com/articles/reuse-as-an-approach-to-sustainability-of-cultural-heritage-samsun-tahan.pdf>
- Çelik, Z. (2016). Kentsel Dönüşümün Tarihi Yapılar Üzerindeki Etkileri. *Mimarlık Dergisi*, 387, 22–29.
- Efeoğlu, M. & Eyüpgiller, K. K. (2021). Çatalca bölgesi savunma yapıları üzerine bir değerlendirme. *Sanat Tarihi Dergisi*, 30 (1) , 391-433 . DOI: 10.29135/std.834017 Access Adress (19.12.2022): <https://dergipark.org.tr/tr/download/article-file/1424523>
- Emekçi, Ş. (2021). Çevreye duyarlı mimarlık arayışında insan ve doğa ile uyumlu yapı üretme süreci, *Journal of Architectural Sciences and Applications*, 6 (2), 538-554. DOI:10.30785/mbud.935715. Access Adress (02.10.2023): <https://dergipark.org.tr/tr/download/article-file/1762421>
- Ertaş Besir, S., Sönmez, E., Taş, A., Tomar, E. Z. (2022). Tarihi yerleşimlerde kültür turizmüne yönelik somut kültür varlıklarının incelenmesi: Konya/Sille örneği. *Journal of Architectural Sciences and Applications*, 7(1), 42-71. <https://doi.org/10.30785/mbud.939739> Access Adress (28.09.2023): <https://dergipark.org.tr/en/pub/mbud/issue/69153/939739>

- Ertuğrul, M. (2018). "Castles in Anatolia and Their Architectural Features." *Journal of Turkish Cultural Heritage*, 5(2), 123–138.
- Eyice, S. (2001). *Byzantine Art and Architecture in Istanbul*. Istanbul University Press.
- Eyvazova, Y. (2018). Kültürel mirasın müzeler aracılığıyla hayata geçirilmesi, *Yegâh Mûsikî Dergisi* Cilt I, Sayı 1, p.79-92. Access Adress (22.09.2023): <https://dergipark.org.tr/tr/download/article-file/565623>
- Google a. (2024). Hattusas City Walls. Access Address (07 11 2024): Link Address: <https://turkisharchaeonews.net/object/reconstructed-walls-hattusa>
- Google b. (2024). Underground Structure in Cappadocia, Access Address (10 12 2024): Link Address: <https://turkishmuseums.com/museum/detail/2207-nevsehir-kaymakli-yeralti-sehri/2207/1>
- Google c. (2024). Hellenistic Period Towers. Access Address (10 12 2024): Link Address: <https://uzuncaburc.mersin.edu.tr/page3.html>
- Google d. (2025). Theodosius II Land Walls in İstanbul. Access Address (20 01 2025): Link Address: <https://www.thebyzantinelegacy.com/theodosian-walls>
- Google e. (2025). Rumeli Fortress. Access Address (20 01 2025): Link Address: <https://kvmgm.ktb.gov.tr/Eklenti/90953,istanbul-rumeli-hisari-muzesipdf.pdf?0>
- Google f. (2025). Anadolu Fortress. Access Address (20 01 2025): Link Address: <https://ataturkkitapligi.ibt.gov.tr/tr/Kitaplik/Muzelerimiz/Anadolu-Hisari-Muzesi/15>
- Google Maps. (2024). Location of Alanya Castle. Access Address (08 10 2024): Link Address: https://www.google.com.tr/maps/search/alanya+castle/@36.5388332,31.9826189,15z/data=!3m1!4b1?entry=tту&g_ep=EgoyMDI1MDYxMC4xIXMDSOASAFQAw%3D%3D
- ICOFORT. (2020). Charter on Fortifications and Military Heritage, ICOMOS International Scientific Committee on Fortifications and Military Heritage. Access Adress (06.09.2021): https://www.icomos.org/images/DOCUMENTS/Charters/AGA_202111_6-1_ICOMOS_Guidelines_Fortifications_MilitaryHeritage_2021_EN.pdf
- ICOMOS. (2013). ICOMOS Türkiye Mimari Mirası Koruma Bildirgesi. Access Adress (06.09.2021): http://www.icomos.org.tr/Dosyalar/ICOMOSTR_tr0784192001542192602.pdf
- Keçici, S. (2008). *The Concept of the Castle in the Middle Ages and Its Architectural Features*. Istanbul: Literature Publishing.
- Keegan, J. (1995). *Savaş Sanatı Tarihi*, (çev. Füsun Doruker), İstanbul: Bilgin Yayıncılık.
- Kök, D. & Sayar, Y. (2022). Savranda Kalesi mimari değerlendirmesi, *Online Journal of Art and Design* volume 10, issue 3, July 2022, 14-133. Access Adress (04.02.2023): <http://www.adjournal.net/articles/103/1038.pdf>
- Köprülü, Ö. (2023). *Castles and Walls in Anatolia*. Ankara: Turkish Historical Society Publications.
- Kuban, D. (2000). *Mimarlık Eğitiminde Koruma*, İTÜ Yayınları.
- Kuban, D. (2010). *Anatolian Civilizations and Architecture*. Istanbul: Yapı Kredi Publications.
- Küçük, B. (2022). *Defense Structures in Anatolia: An Archaeological and Historical Perspective*. Istanbul: History and Architecture Press.
- Official Gazette, (1983). Law on Conservation of Cultural and Natural Assets. (1983, July 23). (Number: 18113). Access Adress (12.01.2023): <https://www.resmigazete.gov.tr/arsiv/18113.pdf>
- Official Gazette, (2005) Regulation on Construction Principles and Supervision of Immovable Cultural Assets in Need of Protection (Number: 25842). Access Adress (14.04.2025): <https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=8322&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5>

- Official Gazette, (2012), Regulation on the Identification and Registration of Immovable Cultural Assets and Sites in Need of Protection (Number:28232). Access Adress (14.04.2025): <https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=15958&mevzuatTur=KurumVeKurulurulusYonetmeligi&mevzuatTertip=5>
- Official Gazette, (2022). Law on Conservation of Cultural and Natural Assets. (2022, June 16). Number: 31868). Access Address (12.01.2023): <https://www.resmigazete.gov.tr/eskiler/2022/06/20220616.pdf>
- Marino, L. (2001). Conservation et Valorisation d'Architectures fortifiées réduites à l'état de ruine 55, 169-174.
- Perouse, J. (2003). La muraille terrestre d'Istanbul ou l'impossible mémoire urbaine, *Rives nord-Méditerranéennes*, 16, 27-44.
- Ricci, A. (2013). Intangible Cultural Heritage in İstanbul: The Case of the Land Wall's Byzantine Orchards, Anadolu Medeniyetleri Araştırma Merkezi, Koç Üniversitesi, İstanbul.
- Sevgen, N. (1959). Turkish Castles and Architectural Features. İstanbul: Turkish Historical Society.
- Suri, L. (2019), Kentsel Alanlarda Barınma Sorunları ve Çözüm Arayışı, ISAS WINTER-2019, 4th International Symposium on Innovative Approaches in Architecture, Planning and Design Samsun / Türkiye, Kasım
- Tapan, M. (2007). Soru ve Cevaplarla Koruma. 1. Basım, İstanbul: TMMOB Mimarlar Odası İstanbul Büyükkent Şubesi Yayını.
- Togan, İ. (1981). Defense and Fortification in Turkish History. Ankara: Historical Research Center Publications.
- Türkmenoğlu, A. (2021). Watchtowers in Anatolia and their strategic importance. *Turkish Cultural Studies Journal*, 9(1), 88–102.
- UNESCO. (2024). "The Diyarbakır Fortress and Hevsel Gardens Cultural Landscape." World Heritage List. <https://whc.unesco.org>
- Ülkü, O. (2007). Osmanlı İmparatorluğu'nda savunma sistemi olarak Tabya Mimarisi, *Atatürk Üniversitesi İlâhiyat Fakültesi Dergisi*, Sayı: 27, Erzurum. Access Adress (04.02.2023): <https://dergipark.org.tr/tr/download/article-file/30645>
- Yalçınkaya, Ş. & Karadeniz, İ. (2022). Sürdürülebilir mimari tasarımda atık malzemenin yeri. *Journal of Architectural Sciences and Applications*, 7 (2), 750-762. DOI: 10.30785/mbud.1168291. Access Adress (22.09.2023): <https://dergipark.org.tr/tr/download/article-file/2621539>
- Yalman, S. (2014). Fortifications and City Walls in Anatolia: From Antiquity to the Ottoman Period. *Journal of Architectural History*, 18(2), 205–228.
- Zorlu, T., Engin, H. E., İslamoğlu, Ö., Aras, A., Büyükçam, S., Küçük, P., ... B., Lülecı, S. (2018). Trabzon Sürmene Aksu Köyü Kırsal Mimari Mirasının Korunması ve Turizm Odaklı Yeniden Kullanımı, Dicle Üniversitesi 1. Uluslararası Mimarlık Sempozyumu, Çevreden Mekâna, Diyarbakır-Türkiye 4-6 Ekim, 841-865.