Importance of International Treaties and Declarations for Adaptive Reuse in Historical Buildings: Berlin Parliament Building and Santral Istanbul Examples

Abstract

Today, a number of historical buildings, which lost their original functions that were relevant in the period they were built, are subject to the process of "adaptation for reuse" with a new function or an addition. The aim of adaptive reuse is to allow those buildings meet the prevailing needs that emerge as a result of the social, economic, political, and cultural factors of the time. There are international treaties, statutes, declarations, and standards, which specify the fundamentals and principles of conserving historical buildings during adaptive reuse process. The “conservation principles and principles” provided in the aforementioned documents are important in the context of serving as a guide for additions and new functional applications to historical buildings.

The present article aimed to discuss the issue of intervention by additions and new functions based on the two public buildings selected from Germany and Turkey. The study first investigated the extent to which historical buildings were integrated with their surroundings on a contextual scale and what factors determined the said integration. International agreements, declarations, and directives were used as the determining framework for the purposes of the study. In the context thereof, the provisions governing additions and new functions as specified in international treaties, which were entered so far, were reviewed. The articles governing the additions and new functions stipulated in the international treaties and declarations from the “Carta del Restauro” of 1931 to the “Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013” were compiled. Those provisions were adopted as the determining criteria in the assessment of the two historical buildings, including Berlin Parliament Building and Santral Istanbul. While working with examples, the concepts of addition and new function were examined with a historical perspective and in a historical context. It was seen as a result of the study that both historical buildings, which received additions and new functions upon adaptive reuse intervention, complied with the criteria provided in international treaties. The two examples both maintained their values associated with historical heritage and became a focal point across their location, thanks to the adaptive use, which adhered the relevant provisions of the international treaties.

Keywords: Historical Building, Addition, New Function, Conservation principles

1. Introduction

There are a number of ways to protect historical buildings in physical terms, nevertheless, to enliven a historical building and ensure that the spirit of the period is felt is the most challenging part.

The most fundamental way to enliven historical buildings before they are worn out is to ensure the continuity of their use. In case the building can no longer perform its function in its surroundings and thus is not used, the emerging needs of the time can be met by means of additions and new functions. This allows a coexistence of the buildings from yesterday and today. The main purpose of conservation should be the transfer of both physical and cultural heritage to the next generations. The approach aimed at renovation and incorporating additions and new functions in historical buildings is important at this point and plays a role in saving the historical building in question. A number of buildings with both historical and cultural values are abandoned to their fate over time due to various reasons, and ultimately they would worn out or be destroyed. There are a number studies on international regulations, declarations and principles, which specified the fundamentals and principles as regards architectural sustainability of the buildings in historical surroundings and the development and improvement of the restoration concept. The above-mentioned efforts aim to keep the common heritage alive with the most accurate methods by eliminating the subjective opinions regarding restoration as a guide for the experts, who will assume the restoration work. The present study used a total of ten criteria compiled from international treaties and declarations, to assess two important historical buildings from two countries, namely Berlin Parliament building and Santral Istanbul. The case study aimed to analyze to which extent the international treaties were adhered to, and to which extent the results of the restoration were in parallel with the criteria.

1.1. Purpose of the Study

The present study aimed to review the additions and new functions as incorporated to historical buildings in order to enliven them in a changing and transforming world. The additions and new functions incorporated to the historical building were tested pursuant to the relevant provisions of the international treaties to comply with the principles of an objective observation. All the articles of international treaties were reviewed, and accordingly, a total of ten criteria were compiled upon literature review and an analysis of articles governing additions and new functions. Therefore, the study aimed to analyze to which extent the additions and new functions incorporated into the two historical buildings in question, which carried values associated with physical and cultural heritage, were in compliance with the articles stipulated in the relevant international treaties. Accordingly, it was aimed to objectively review the integration of the historical building with its surroundings in the light of the above articles.

1.2. Scope of the Study

The new function and addition concepts in historical buildings and the resolutions taken with the treaties, declarations, and bylaws published by international platforms for these concepts were investigated within the scope of this research. Two historical buildings built during the early 20th Century were selected for the purposes of the present study. Therefore, the Berlin Parliament building and Santral Istanbul projects were reviewed and an assessment was made as regards integration.

1.3. Methodology of the Study

The present study aimed to investigate the valuable buildings with historical significance and the additions and new functions incorporated into the buildings in question. Two exemplary historical buildings were selected in the case study on the basis of the following criteria:

- Both examples were built during the early 20th century in the historical context of the two important cities, namely Berlin and Istanbul.
- The buildings were selected from different countries to investigate different approaches and design ideas. A European city in Germany and a Turkish was included in the case study with an aim to review the compliance with the relevant articles of the international treaties during adaptive reuse process. Different building typologies and programs were reviewed to gain insight into the various projects.

A literature review was conducted on important international treaties, declarations, and bylaws as regards the addition and new functions in historical buildings to take the same as a basis for an analysis of the selected examples.

- A qualitative study of important international treaties, principles, and resolutions was made to highlight the key points and issues. The important points of the relevant articles of the said documents were tabularized and the criteria required for a historical building could be considered to have been integrated to its surroundings with the additions and new functions were determined.
- While working with examples, the concepts of addition and new function were investigated with a historical perspective and in historical context.
- The selected examples were then analyzed and reviewed against the criteria compiled from international treaties, declarations, and bylaws, to obtain the study results.

2. Addition and New Function Concept in Historical Buildings

2.1. Addition and New Design Criteria for Historical Buildings

It is important to adapt historical buildings to the requirements of present uses. The most accurate approach is to carry out the least intervention in historical buildings. However, in certain cases, this may not be possible due to the existing massive structure of the historical building. In such cases, an addition can be designed based on the requirements so that the historical building can be put into use once again. There are certain standards in place for the implementation of the additions. Those standards include harmony of mass in between the addition and the historical building, and harmony

with the surroundings. Ahunbay (2019) suggested that additions should be implemented in historical buildings so as to ensure the least possible impact on the appearance, to adhere the principle of harmony of mass, and to fit the surroundings. So far, a number of international bylaws and declarations mentioned the above issue. For example, pursuant to Article 13 of the International Charter for the Conservation and Restoration of Monuments and Sites (ICOMOS, 1964), additions are allowed only if "they do not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relation with its surroundings" (ICOMOS, 1964).

The additions reflect the characteristics of the time and are clearly represented as a contemporary design as the name suggests per se. An addition is primarily aimed at solving functional as well as design issues. It is complementary to modern requirements, context-specific, detailed, and versatile. (Sağlam & Tavşan, 2019).

Contemporary additions are products of new design and are shaped based on the conditions of the building and its surroundings to which they are integrated. Therefore, the relationship between the historical building and the addition is effective with a view to the perception of the contemporary addition in different ways, including to be prominent in the existing fabric or to be in harmony therewith. Since the decisions that inform the design inputs are shaped within the framework of the historical building, it is possible to identify and define the existing building, and to determine the factors that would drive the design on the basis of the original building. Those factors are intended for creating and improving the functional, perceptual, and aesthetic perceptibility and quality of the new design. In the framework thereof, design approach, type of space organization, formal criteria, and conceptual criteria guide new designs and thus included in the present study as reference.

Architects employ design concepts (proportion, color, fabric, etc.) related to historic buildings and additions in order to express the design method on a spectrum ranging from imitation to contrast during implementation of an addition design. Upon literature review, it was seen that the design elements and principles were considered differently by various scholars, and therefore, the same were tabularized to provide a general overview (Ching, 2015; Düzgün,2010; Güngör, 2005; Kaçar & Semerci,2022; Sağlam & Tavşan, 2019; Soosani, 2013; Yavuz & Yıldırım 2020) (Table 1).

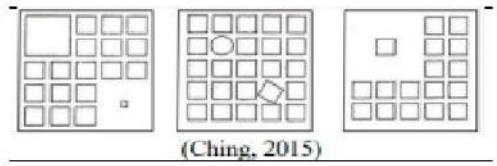
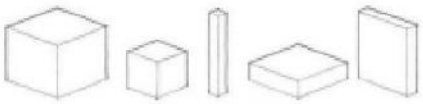
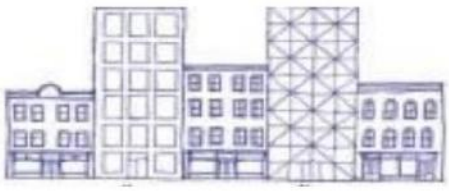
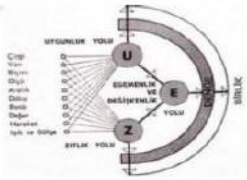
Basic Design Concepts		
Location Relation	 (Ching, 2015)	
Proportion Relation	 (Ching, 2015)	
Color Relation	 (Ching, 2015)	
Fabric Relation	 (Ching, 2015)	
Form Relation	 (Ching, 2015)	
Rhythm Relation	 (Ching, 2015)	
Material Relation		
Sustainability	 (Güngör, 2005)	

Table 1. Expression of Design Concepts (Compiled from relevant literature by the authors)

Additions can be classified into a number of categories in historical buildings. For example, an addition can be classified based on the design style, or based on the location of the additional structure. Certain classification approaches for additions as compiled upon literature review are summarized in Table 2 below.

Violet Le Duc, 19th Century	**Camillo Boito, 1883 Gustavo Giovanni, 1930 as cited in Ahunbay (2019)**	**Düzgün, (2010)**	**Zeren (2010)**	**Sağlam & Tavşan (2019)**
Integrate the building using additional structures, different from the original version	Avoiding additions to the structure Adopting a Subtle and Neutral approach	Imitation Harmony Contrast	Imitation of Style Emulating the Traditional Respectful Approach Contrary Approach	Replica Similar Neutral Abstract Reference Opposite

Table 2. Opinions of different experts for the concept of addition (Compiled from literature by the authors)

2.2. Factors in Selecting Additions and New Functions in Historic Buildings

It is important to repair destroyed or abandoned historical buildings, in such a way to meet the shifting requirements as a result of social, economic, political, and cultural factors and to ensure their integration into the modern life with a new function (Hasol, 2019). As there are buildings that are able to adapt to today's conditions, there are also buildings that are potentially suitable for adaptation. Reuse of buildings that can no longer fulfill their purposes for which they were originally built, is not only an environmentally sensitive approach but it is also associated with creating great economic input for it allows the use of available building stock. It is also very important and invaluable for cultural sustainability.

Before the introduction of the annex and new function, the architectural structure of the building should be analyzed very well and the parts that must be conserved and others that can be saved should be determined in the historical building. Care should be taken to select the new function as close as possible to the existing architectural structure of the building. Decisions that would push the limits of the building should not be taken.

Kocabıyık (2014) categorized the factor, which would have an impact on the selection under three main headings:

- Volumetric and spatial construct of the building
- Functional construct of the building, and
- Location of the building.

3. Principles regarding Additions and New Functions in a Historical Context

3.1. International Treaties and Declarations

The restoration as practiced today is associated with the modern restoration theory. In fact, the contemporary restoration theory was built upon an assessment and review of long-term experiences from and real problems associated with the previous restoration model, i.e., the historical restoration. The contemporary restoration first emerged, when Italian Camillo Boito (1836-1914) brought together the personal perspectives and different theories then present in historical restoration and made a harmonious combination therefrom. The principle he issued in 1883 is regarded as the foundation and pioneer of contemporary restoration.

Later, the principles of Boito were further developed by Gustavo Giovannoni (1873-1947), which were debated and adopted at the First International Congress of Architects and Technicians of Historic Monuments, Athens 1931. The Athens Charter for the Restoration of Historic Monuments was published as a result of the above congress and introduced the concept of Carta del Restauro to indicate “architectural works” as “monuments” that needs to be conserved. The Contemporary Restoration was adopted in Italy as of 1932. (Ahunbay, 2019). The Venice Charter dated 25-31 May 1964, was adopted as a result of the Second International Congress of Architects and Technicians of Historic Monuments held in Venice. The above charter has contributed to the development of a broad international movement, and its principles have been concretely embodied in the works of the International Council on Monuments and Sites (ICOMOS) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) and especially the establishment of an international center for UNESCO's activities for the restoration and preservation of cultural values, namely the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM).

The articles governing the additions and new functions stipulated in the international treaties and declarations from the “Carta del Restauro” of 1931 to the “Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013” were compiled and presented in Table 3.

International Treaties	Related Articles
Carta del Restauro (1931)	Additions and/or new functions should adopt ***a respectful approach*** towards the historical building and its surroundings.
The Athens Charter of the Congress Internationaux d'Architecture Moderne (CIAM) (1933)	As regards the new buildings, replication, copy, and emulating the ***building typologies in the historical surroundings under the pretext of aesthetics should be avoided***.
Venice Charter (1964)	Additions and/or new functions should be incorporated as ***distinguishable from the original***. Modern techniques can be used as necessary.
The Declaration of Amsterdam (1975)	Since the addition and/or new function as a product of contemporary architecture will be the heritage of tomorrow, it should be of a ***high quality***.
The Declaration of Nairobi (1976)	Additions and/or new functions ***should be in harmony with the spatial organization and composition*** of the original building.
The Convention for the Protection of the Architectural Heritage of Europe (1985)	Additions and/or new functions ***should improve the use of the building and promote its adaptation***.
Washington Charter (1987)	Additions and/or new functions ***should preserve the relationship and order of the surroundings*** and the original historical building.
Charter for the Protection and Management of the Archaeological Heritage (1990)	Additions and/or new functions must be distinguishable from the original building and ***should be easily removable when desired.***
Charter on the Built Vernacular Heritage (1999)	Additions and/or new functions ***should be in harmony in every aspect with the materials of the original historical building.***
The Bristol Accord as agreed at an EU Ministerial Informal Council (2005)	Additions and/or new functions ***should be in harmony with the original historical building in terms of size, scale, density, and design.***
Québec Declaration on the Preservation of the Spirit of Place (2008)	Additions and/or new functions, should preserve the ***physical, social, and cultural relationship and order*** of the original historic building and its surroundings.
ICOMOS New Zealand Charter (2010)	Additions and/or new functions ***should preserve the original form and fabric.***
The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas (2011)	Additions and/or new functions ***should be in harmony in every aspect with the materials of the original historical building.***
Burra Charter (2013)	Additions and/or new functions should be applied to the original historical building only when there is no other option and with minimal impact on its surroundings and special consideration should be taken for the ***preservation of historical and cultural continuity.***

Table 3. The articles of international treaties governing additions and new functions [URL-1], [URL-2], Compiled by the authors)

3.2. Assessment Criteria Based on the Relevant Articles of the International Treaties

The relevant provisions of international treaties and declarations on additions and new functions are compiled and presented in Table 3. A set of criteria for the assessment of additions and new functions of historical buildings was developed on the basis of the foregoing data:

- ***Respectful Approach:*** The design approach should not detract or overshadow the cultural values and traditional character of the historical building and its surroundings.
- ***Distinguishable:*** The additions and/or new functions must be clearly distinguishable from the original in order not to mislead future researchers by intervening in the documentary nature of the original building.
- ***Harmony in terms of Mass, Form, and Rhythm:*** The additions and/or new functions should not diverge much from the original historical building and its surroundings in terms of mass, form, and rhythm. It should not overshadow the historical building.
- ***Reflecting the technology of the period:*** The additions and/or new functions should reflect the technology of the period and should not imitate the techniques of the past.
- ***Structural and Aesthetic Value:*** The quality and the structural and aesthetic value of the historical building should not be detracted by the additions and/or new functions.
- ***Harmony with Spatial Organization and Composition:*** The additions and/or new functions should be in harmony with the spatial organization of the historical building, and the addition but not the original building, should be adapted to resultant composition. In other words, it is necessary to choose an addition and/or function that would fit to the historical building during the design phase.
- ***Harmony in terms of Color and Material:*** Care should be taken to ensure that the materials and colors used in the historical building are in harmony and do not overshadow the original.
- ***Originality:*** The additions and/or new functions should be original and considered that the same would become the heritage for the future generations. Due to its documentary nature, it should not mislead future researchers by detracting the original.
- ***Improved Usability:*** Regardless of the application in the historical building, it should improve the use of the building vis a vis its current state and enhance its quality.
- ***Physical, Social and Cultural Sustainability:*** The historical building should retain its historical value subsequent to the interventions.

4. Case Study

In the study, two historical buildings, one from Europe and the other from Turkey, were chosen as an example for adaptive reuse. A framework was developed based on the assessment criteria compiled from the international treaties with an aim to analyze the additions and new functions incorporated into the two examples. The international treaties and the criteria derived from them were

chosen because they were directly related to the additions and new functions to the historical buildings.

A three-stage work was carried out for each example of the case studies. In the first stage, the historical background of the example building was reviewed; in the second stage, the renovation/restoration works were explained, and finally in the third stage, the additions and new functions upon restoration were analyzed.

4.1. Berlin Parliament Building (Reichstag)

4.1.1. Historical Background

Expressing democracy and unity of Germany, the Berlin Parliament building is one of the most important buildings in Germany. Originally built in 1894 as the parliament of the German Empire, this important building has become a focus of attention of international politics. An architectural design competition was opened in 1872 for the construction of the Berlin Parliament building, which would serve as the parliamentary building of the Empire, in Berlin, the capital of the German Empire founded in 1871. Although the design of the German architect Ludwig von Bohnstad was chosen, the construction did not start due to the property issues of the land. In 1882, the competition was renewed. Architect Paul Wallot's clear and functional design featuring a glass dome indicative of monumentality and four towers representing the four pillars of the German Empire (Prussia, Bavaria, Saxony, and Württemberg), was chosen. The construction of the building was commenced in 1884, yet it could have been completed in ten years due to several changes in the project inflicted by Kaiser Wilhelm II, and opened for use in 1894 (Figure 2), (De Haan, 1988; Chametzky, 2001)

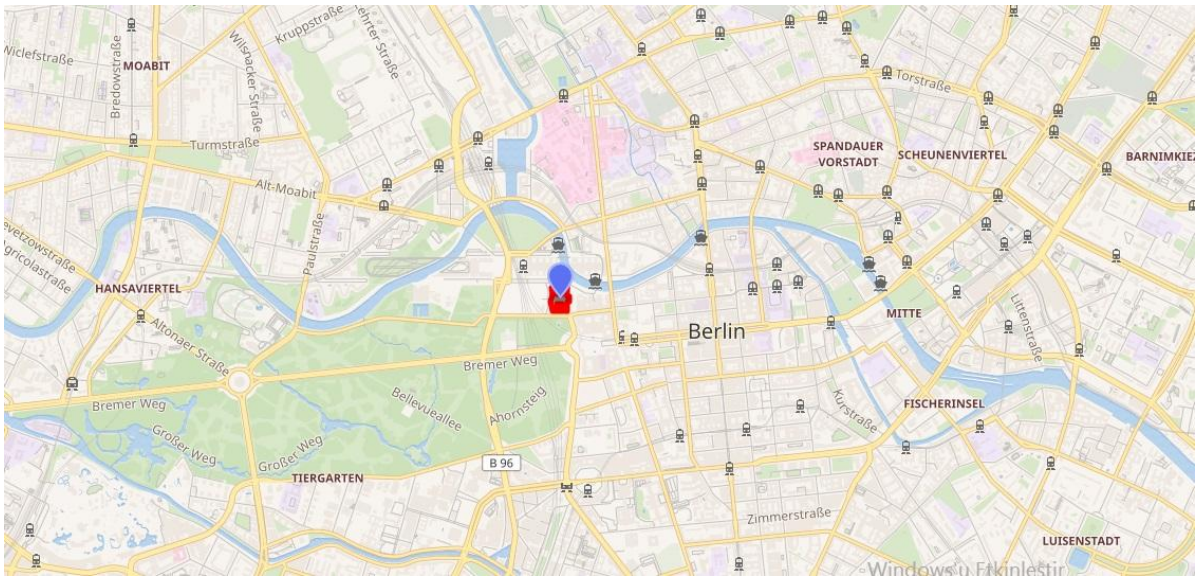


Figure 1. Location of the Berlin Parliament building on the map [URL-9]

Figure 2. Berlin Parliament building (Sirel, 2015)

Featuring a combination the Renaissance and Baroque styles, the building consisted of rustic stone walls, massive columns, a glazed cloister vault, and four towers on the corners. The main entrance, designed on the western façade, formed the official entrance of the building with the appearance of a temple with columns and a pediment. The eastern entrance was reserved for the emperor, the prime minister, members of the government, and members of parliament. The rectangular entrance hall accessible from the main entrance, and the 400-seat council meeting hall were located in the center of the building. Large spaces, including the library, reading hall, assembly hall, and resting hall, and smaller offices in-between the foregoing were placed in the four corners of the symmetrical plan facing the exterior (Figure 3). The assembly hall with a 75-meter-high rectangular base featuring a steel and glass dome could be described as progressive for its period, aimed to demonstrate the superiority of the Germans in modern materials and construction techniques (Chametzky, 2001); Sirel & Sirel, 2021).

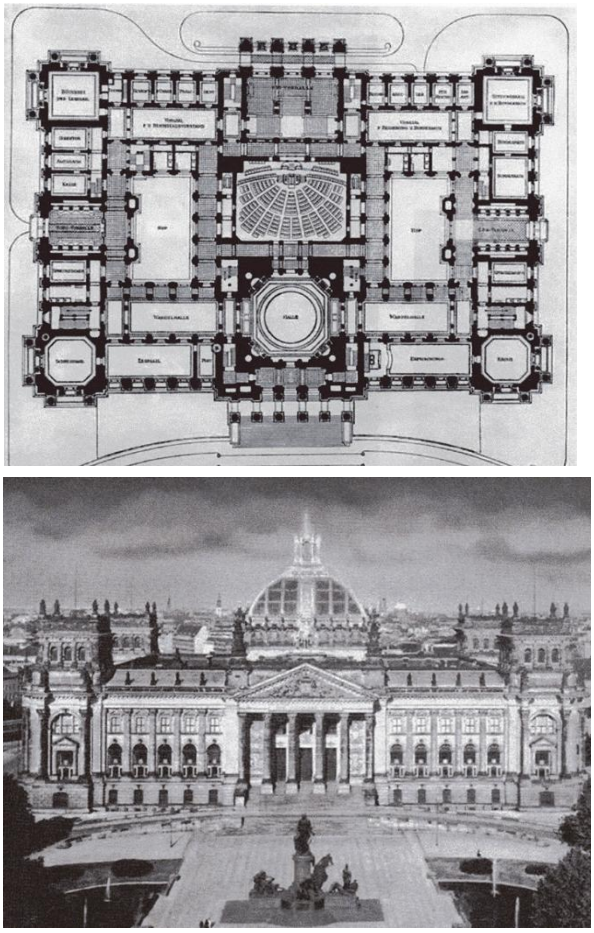


Figure 3. Berlin Parliament building original plan and front view (Sirel & Sirel, 2021)

The Berlin Parliament building was the most important building of the Otto von Bismarck period (1862 - 1890) in Germany, thereafter experienced a number troubles due to political reasons. The building (Figure 4.) was heavily damaged during the Second World War, remained within the borders of the German Democratic Republic, to the west of the 'Berlin Wall' built in 1961, when Germany was divided into two. In the same year, certain changes were made in the interior of the building, which was restored by the architect Paul Baumgarten. The political capital of Germany was moved from Bonn to Berlin after the Berlin Wall fell in 1991 and East and West Germany were reunited. After the reunification, it was decided to use the Berlin Parliament building as the Parliament Building of the 'Federal Republic of Germany' (Sirel & Sirel, 2021).

Figure 4. View of the Berlin Parliament building after World War II [URL-3]

4.1.2. Renovation Work

A design competition was held for the third time for the renovation of the worn-out Berlin Parliament building in 1992. British architect Norman Foster won the competition. The renovation work started in 1995 and completed in 1999. Foster built his concept upon four principles in his project to renovate the Berlin Parliament building. The importance of the Bundestag as a democratic forum, sensitivity to history, public accessibility, and a strong environmental agenda. In the design, it was aimed to preserve the outer shell of the historical building and to improve some important areas in the interior (Sirel & Sirel, 2021).

The 1990s were the years when environmental awareness was at its peak in Germany. In the context thereof, Foster introduced e a design, which optimized the use of passive systems in the building, minimized active systems, and provided savings in economic terms by the use efficient environmental technologies. To bring natural light and air into the building, he placed a large, navigable steel-glass dome on the roof over the assembly hall, replacing the old rectangular-bottomed steel-glass dome by Paul Wallot, the previous architect of the building, which was progressive for the time when it was built (Figure 7). In the center of the added transparent dome, the mirrors were placed on the funnel-shaped pillars to direct the natural daylight towards the assembly hall. The meeting room can be seen when looking down from the foot of the dome. The fact that the German parliamentary hall is visible through the glass dome is important in terms of demonstrating the transparency and vitality of the German democratic process. With the placement of the glass dome (as different from the original) on the roof of the imperial building, which represented absolute authority for its period, Foster added a contemporary interpretation to the building and made it accessible. At the same time, Foster expressed in the language of architecture by means of energy efficient design that the Berlin Parliament building was a symbol of both Germany's understanding of democracy and freedom 21st century and her commitment to renewable energy. Foster enriched the building with the new uses while preserving the original character (Figures 5,6,7) (Sirel & Sirel, 2021).

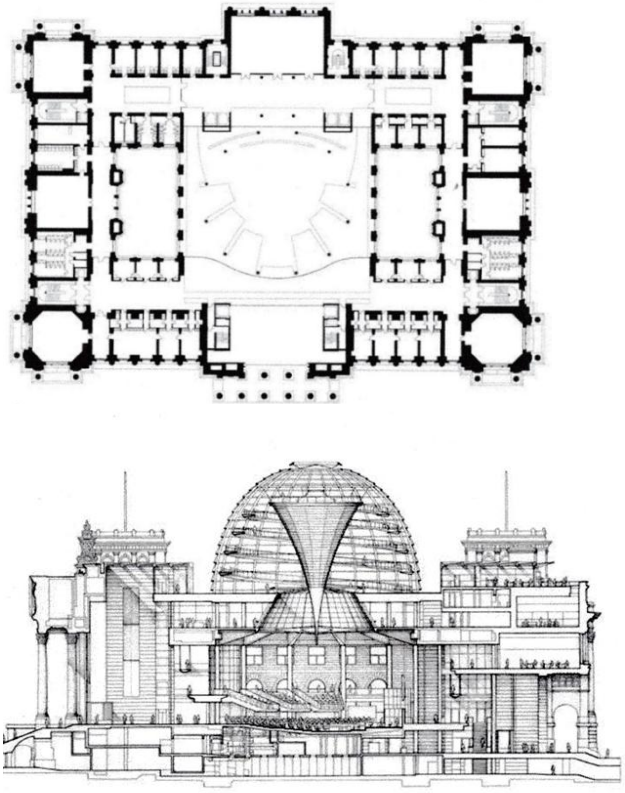


Figure 5. The renewed plan and transparent roof attachment of Berlin Parliament building [URL-4]

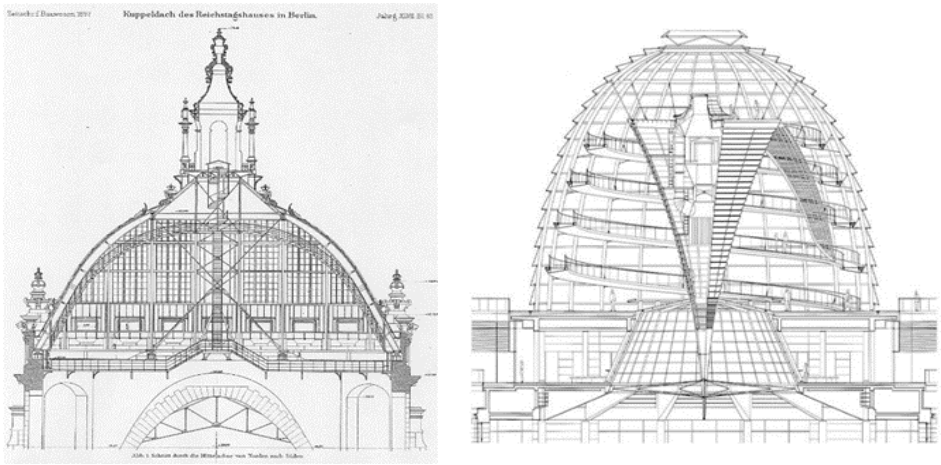


Figure 6. The original roof of the Berlin Parliament building and the added transparent dome [URL-4]

Figure 7. Interior and exterior views of the added transparent dome above the parliamentary hall [URL-4] (Sirel, 2015)

4.1.3. Analysis of the Berlin Parliament Building

The Berlin Parliament building was heavily debated both during the period it was built and after the restoration works. The fact that it witnessed a number of historical events and became a significant landmark of a country, it was important to keep it alive and bring it to the present day. A respectful approach was adopted by making as few changes as possible in the building during the restoration stage. In order to preserve the perceived form of the building, which was left without a dome for many years, a new one was added and a distinctive appearance was achieved by the use of the contemporary materials. Continuing its original function today, the building has achieved cultural sustainability upon preservation of historical traces. Apart from providing a transparent parliamentary environment, the Berlin Parliament building also welcomes visitors to its transparent dome and roof terrace. Two steel spiral ramps wind up towards the top of the dome, allowing the visitors to enjoy a 360-degree view of Berlin. While the Berlin Parliament building has become a touristic destination in Berlin's cityscape, it is actually seen as a symbol of Germany's economic and political power (Sirel & Sirel, 2021).

The assessment criteria compiled from international agreements and declarations and the results of the analysis based thereupon are presented in the Table 4 below.

Historical Building	Type of Restoration				Criteria as derived from treaties									
Berlin Parliament Building	Functional Modification		Addition		Respectful approach to historical building	Distinguishable from the historical building	Harmony in terms of mass, form, and rhythm	Reflecting the technology of the period	Structural and aesthetic value	Harmony with spatial organization and composition	Harmony in terms of color and material	Originality	Improved usability	Physical, social, and cultural sustainability
	Yes	No	Yes	No										
	No		Yes		√	√	√	√	√	√	√	√	√	√

Table 4. Analysis of the Berlin Parliament building pursuant to the criteria derived from international treaties

Upon the analysis based on the assessment criteria derived from the international treaties, it was seen that the additions and new functions as incorporated into the Berlin Parliament building were positive in terms of architecture, social, cultural and environmental aspects.

4.2. Santral Istanbul (Silahtarağa Power Plant/Istanbul Bilgi University Campus)

4.2.1. Historical Background

Located in the Golden Horn region of the historical peninsula in Istanbul, the Silahtarağa Power Plant was established by Ganz, an Austro-Hungarian company, to supply electricity to the city. It was built in 1914 when the effects of Westernization were observable across the Ottoman Empire. The operations of the powerplant were halted in 1983, and the same was registered as cultural heritage by the Istanbul Cultural and Natural Heritage Preservation Board in 1991 (Aksoy 2007; Sadri, 2008).

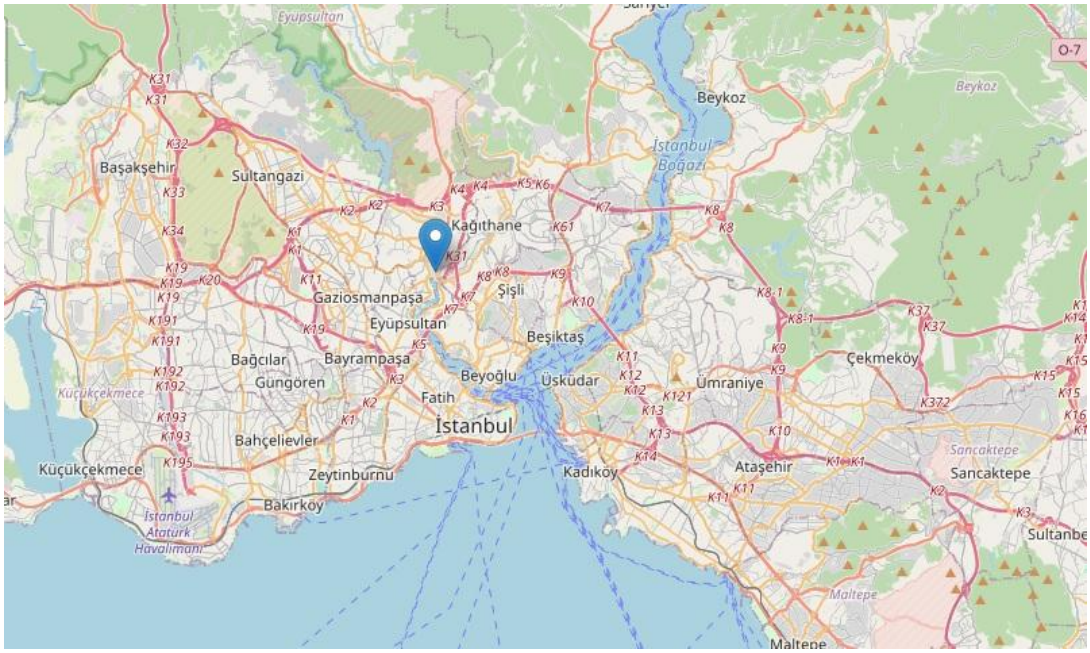


Figure 8. Location of Santral Istanbul on Istanbul map [URL-10]

Figure 9. Santral Istanbul building [URL-5]

The building was allocated to the use of Istanbul Bilgi University in 2004 (Kaşlı, 2009). It is one of Turkey's most important industrial buildings and one of the most distinctive industrial archeology monuments because its integrity is intact. The building was transformed into the Contemporary Arts Museum, becoming the first industrial archeology museum in Turkey. Although it is not very old, when compared to its counterparts in the West, it is important in terms of its historical value in the eastern geography (Figure 9,10).

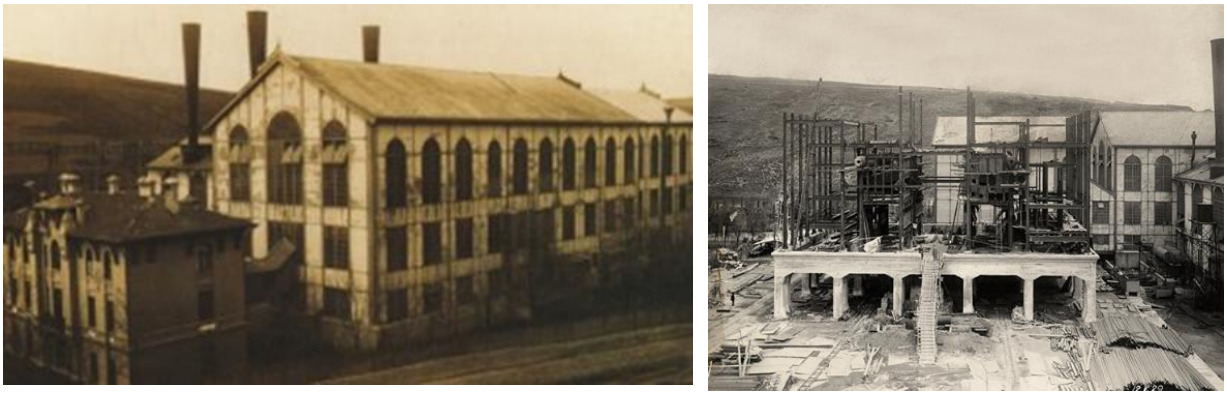


Figure 10. Original view of Silahtarağa Power Plant [URL-6], [URL-7]

4.2.2. Renovation Work

Santral Istanbul, which was brought back to urban life in 2017, is a restoration project carried out by architects Nevzat Saygın, Emre Arolat, and Han Tümertekin. The design of the original building was adhered to during the planning stage. The frames on which the turbines fit, one of the first examples of reinforced concrete use and included in the original plan scheme of the building were

preserved together with the engine rooms inside. The boiler rooms 2 and 4 were converted into the Museum of Contemporary Arts without losing their masses, where the engine rooms 1 and 2 were used as Energy Museums upon minimum intervention. A new perforated outer shell was designed to minimize interference with the original mass of the building. This shell, covered with semi-permeable metal tulle, is seated on reinforced concrete pillars. Two out of six boiler rooms in the building were restored and adapted as a library. The reinforced concrete walls and floors added to create the reading halls were supported by steel columns. Restoration was completed by preserving the form of the old building on an area of 120,000 m² (Tabak & Sirel, 2022).

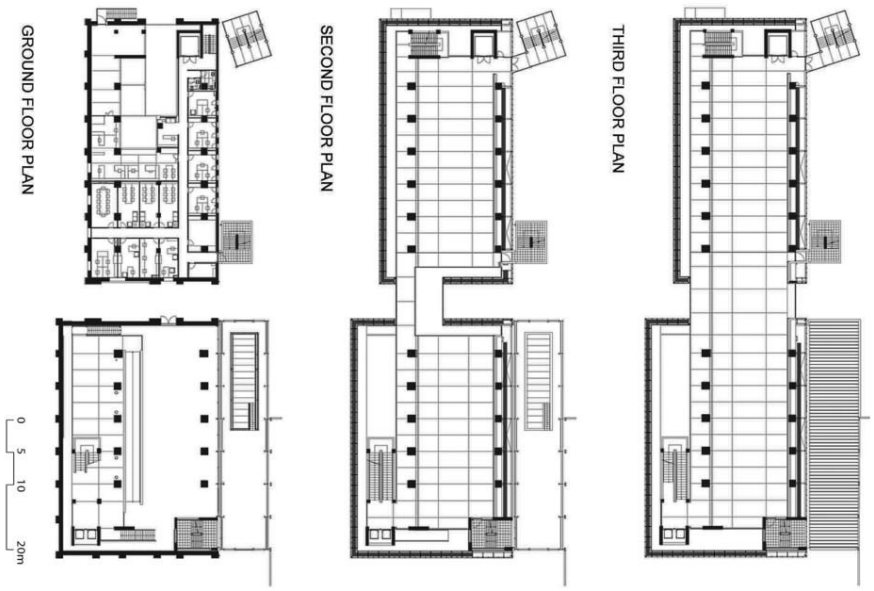


Figure 11. Santral Istanbul floor plans [URL-8]

Figure 12. Santral Istanbul sectional and facade view [URL-4]

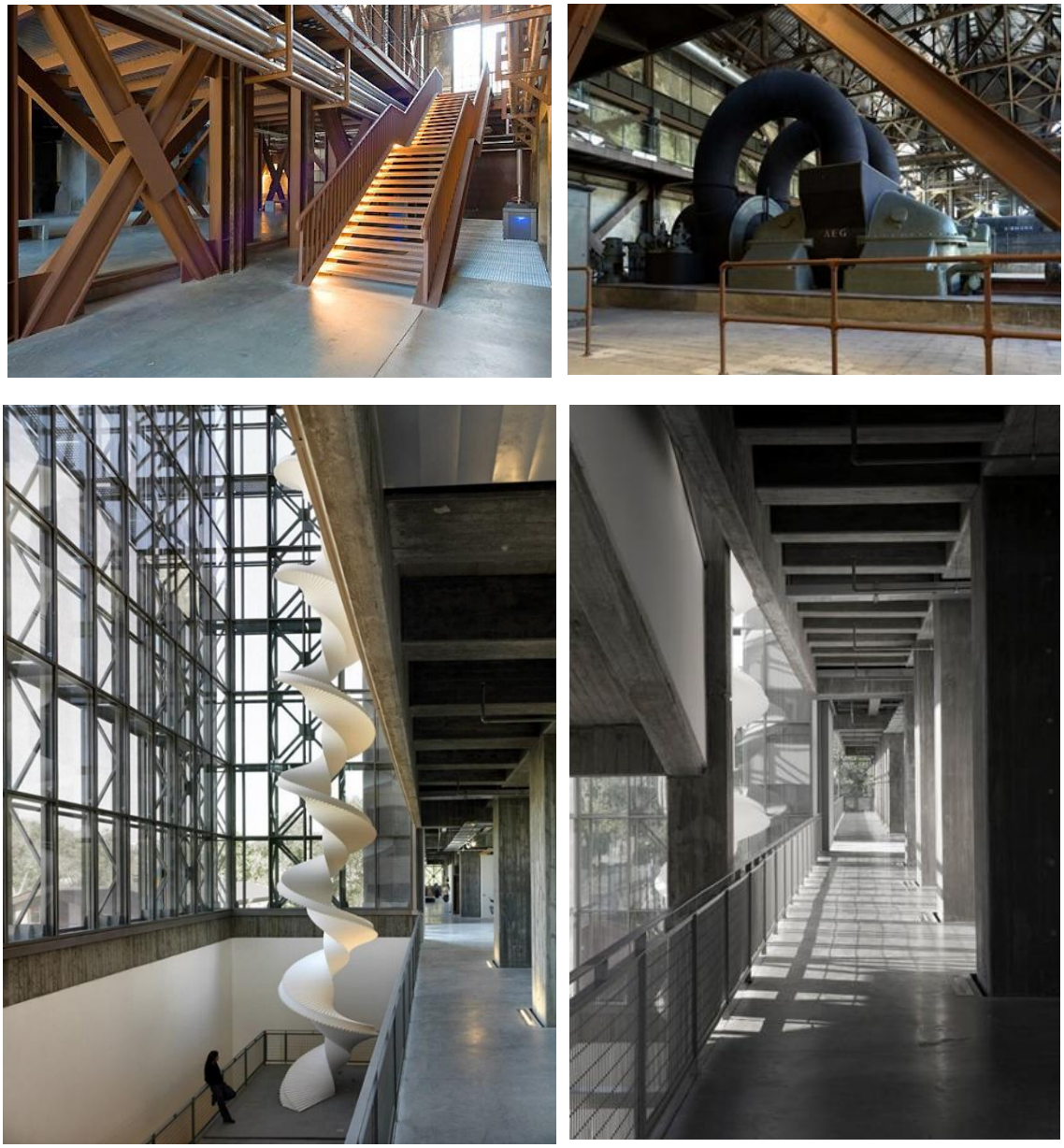


Figure 13. Interior views after restoration [URL-5]

4.2.3. Analysis of Santral Istanbul

Santral Istanbul project is a restoration work that was recently implemented as a very important renovation project vis a vis Turkey's industrial structures and historical process. It is an example, where famous architects were also involved in the design process and strived for preserve the historical significance of the building at every stage. It is a large field work that was adapted to today's conditions upon both a change in function and an addition. During the design process, a respectful approach was taken in planning stage by being highly faithful to the existing building. With the reorganization of the building, which was unoccupied and not operational, tailored to the needs under today's conditions, not only it was reopened to use, but also allowed an opportunity for cultural transfer in terms of the preservation of existing historical materials and their use with an artistic expression. A general assessment is presented in Table 5 below.

Historical Building	Type of Restoration				Criteria as derived from treaties									
	Functional Modification		Addition											
	Yes	No	Yes	No	Respectful approach to historical building	Distinguishable from the historical building	Harmony in terms of mass, form, and rhythm	Reflecting the technology of the period	Structural and aesthetic value	Harmony with spatial organization and composition	Harmony in terms of color and material	Originality	Improved usability	Physical, social, and cultural sustainability
Santral Istanbul	Yes		Yes		√	√	√	√	√	√	√	√	√	√

Table 5. Analysis of Santral Istanbul in line with the criteria derived from international treaties

Upon the analysis based on the assessment criteria derived from the international treaties, it was seen that the additions and new functions incorporated into the Santral Istanbul building were positive in terms of architectural, social, cultural, and environmental aspects.

5. Conclusion

In addition to the importance of enlivening the historical buildings to survive the present day, it is also important how and in what way they were transferred. Since the concept of contemporary restoration was first introduced, a number of studies were carried out on the restoration of historical buildings and there was a continuous quest to find the best methods that would guide the architects in the adaptive reuse works. There are published international treaties, charters, declarations, and standards, which stipulated the fundamentals and principles of preserving historical buildings for the adaptive reuse process.

tori cal Bui ldi	ediate level provid ed ●	CRITERIA AS DERIVED FROM TREATIES

		Respectful approach to historical building	Distinguishable from the historical building	Harmony in terms of mass, form, and rhythm	Reflecting the technology of the period	Structural and aesthetic value	Harmony with spatial organization and composition	Harmony in terms of color and material	Originality	Improved usability	Physical, social, and cultural sustainability
Berlin Parliament Building	○										
	◔										
	●	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Santral Istanbul	○										
	◔										
	●	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 6. Analysis of Berlin Parliament Building and Santral Istanbul in line with the criteria derived from international treaties

The present study, first investigated the extent to which historical buildings were integrated with their surroundings on a contextual scale and what factors determined the said integration. As the determining framework of the study, the guiding articles of international treaties, declarations, and directives related to the additions and new functions were reviewed and a total of ten evaluation criteria were developed. In the present study, which aimed to investigate the additions and new functions in historical buildings based on the above assessment criteria, two historical buildings selected from Germany and Turkey were analyzed. As a result of the study, both the Berlin Parliament building and Santral Istanbul examples achieved the intended purposes prior the restoration based on a literature review and on-site examinations. Combining contemporary practices with a historic building can yield good results with many combinations. It is possible to use both contemporary materials and modern technology, while combining elements such as respectful approach, form and color harmony in design. The articles of international treaties bring together these elements and form a guide for architects (Table 6). Accordingly, restoration works carried out in accordance with international treaties provide an objective point of view and provide positive results. International treaties providing the fundamentals and principles of preserving historical buildings should continue to be a guiding source for the architects.

6. References

Ahunbay, Z. (2019). *Tarihi çevre koruma ve restorasyon*. YEM.

Chametzky, P. (2001). Rebuilding the nation: Normen Foster's Reichstag renovation and Daniel Libeskind's jewish museum Berlin. *Centropa / A Journal Of Central European Architecture And Related Arts*, 1(3).

Ching, F. D. K. (2015). *Mimarlık biçim, mekan ve düzen*. Yapı-Endüstri Merkezi Publishing

De Haan, H. Haagsma, I. (1988). *Architects in competition: international architectural competitions of the last 200 years.* Thames and Hudson

Düzgün, H. (2010). *Tarihi çevrelerde yeni yapı tasarımında kabuk-bağlam ilişkisinin temel ve güncel tasarım kavramları açısından incelenmesi* [Unpublished Master's Thesis]. Yildiz Technical University, Istanbul.

Güngör, H. (2005). *Görsel sanatlar ve mimarlık için temel tasar*. Esen Ofset Printing

Hasol, D. (2019). *Ansiklopedik mimarlık sözlüğü*. Yapı Endüstri Merkezi Publishing

Kaçar, A. & Semerci, F. (2022). *Tarihi yapılara eklemlenen yeni ek yapının uyumluluğu: Elbhilharmonie kültür merkezi. The Turkish Online Journal of Design, Art and Communication*, 12 (2), 240-257.

KAŞLI, B. (2009). *İstanbul'da yeniden işlevlendirilen korumaya değer endüstri yapıları ve iç mekan müdahaleleri Santralistanbul örneği* [Unpublished Master's Thesis]. Istanbul Technical University, Istanbul.

Kocabıyık, Y. (2014). *Yeniden işlevlendirme kavramı ve bu kavramda İTÜ taşkışla binasının incelenmesi*, (Unpublished Master's Thesis). Istanbul Technical University, Istanbul.

Sadrı, Z.S. (2008). *Kentsel dönüşüm ve kent hakkı: Fener-Balat rehabilitasyon programı ve Santralistanbul projesi örnekleri* [Unpublished Master's Thesis]. Yıldız Technical University, Istanbul.

Sağlam, K., & Tavşan, C. (2019). Tarihi çevrede çağdaş eklerin biçimsel ve kavramsal kriterlere bağlı karşılaştırılması. *Yakın Mimarlık Dergisi,* 3(1), 48-65.

Sirel, A., Sirel, O.Ü. (2021). *İlham veren binalar ve mimari yarışma öyküleri*. Istanbul Aydin University Publishers

Soosani, L. (2013). *Questioning the compatibility of the infill architecture in historic environment, case study: Walled City of Nicosia* [Unpublished Master's Thesis]. Eastern Mediterranean University, North Cyprus.

Tabak, P., & Sirel, A. (2022). Adaptive reuse as a tool for sustainability: Tate Modern and Bilgi University cases, *5th international conference of contemporary affairs in architecture and urbanism*. 11-13 May 2018, Alanya HEP University, Alanya (Online)

Yavuz, Z., & Yıldırım, M.T. (2020). Analysis of contemporary architectural desings attached to historical buildings. *Gazi University Journal of Science*, 8(4), 747-760.

Zeren, M.T. (2019). *Tarihi çevrede yeni ek ve yeni yapı olgusu*. Yalın Publishing

ICOMOS. http://www.icomos.org.tr/?Sayfa=Icomostuzukleri&dil=tr (2022, May 10).

URL1:ICOMOS. http://www.icomos.org.tr/?Sayfa=Digeruluslararasibildirgeler&dil=tr (2022, May 10).

URL2: Alan Başkanlığı. http://www.alanbaskanligi.gov.tr/uluslararasi_mevzuat.html (2022, May 10).

URL3: Deutscher Bundestag. https://www.bundestag.de/besuche/architektur/reichstag/geschichte (2022, July 1).

URL4: Douglass-Jaimes, D. (2018, Oct 26). *AD Classics: New German Parliament, Reichstag / Foster + Partners.* https://www.archdaily.com/775601/ad-classics-new-german-parliament-reichstag-foster-plus-partners

URL5: Kılıç, G. (2014, June 14). Santral Istanbul museum of contemporary arts & energy museum Design by Emre Arolat, Han Tumertekin, Murat Tabanlioglu & Nevzat Sayin. *My Magical Attic.* https://mymagicalattic.blogspot.com/2014/06/santral-istanbul-museum-of-contemporary.html

URL6: Doğan, M. (2021, March 1). Endüstriyel bir miras: Silahtarağa Elektrik Santrali – ÇSM. *GZT*. Retrieved from https://www.gzt.com/arkitekt/endustriyel-bir-miras-silahtaraga-elektrik-santrali--csm-3579238

URL7: Arkitektuel (2018, Sep 14). *Santralistanbul.* https://www.arkitektuel.com/santralistanbul/santralistanbul-eski/

URL8: Archdaily (2014, May 22). *Santral Istanbul Museum of Contemporary Arts / NSMH + Emre Arolat Architects.* https://www.archdaily.com/506692/santral-istanbul-museum-of-contemporary-arts-emre-arolat-architects

URL9: Berlin Parlamento map (2022, 3 July) In Wikipedia. https://tr.wikipedia.org/wiki/Reichstag#/map/0

URL10: Santralistanbul map (2022, 4 July) In Wikipedia. https://tr.wikipedia.org/wiki/Santralistanbul#/map/0