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**Research Article**

# The Interpretation of Contemporary Additions in Reuse Practices Through Semiotics: The Case of the Louvre Pyramid

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**ABSTRACT**

This study focuses on analyzing contemporary additions in the reuse of cultural heritage through the lens of architectural language and semiotics. The reuse process is a complex one, aiming to preserve the cultural value of heritage while adapting it to contemporary use and ensuring its future sustainability. When the original structure is insufficient to meet modern functional requirements, contemporary additions become necessary, which raises questions about the integration of old and new. Semiotics, a discipline centered on the study of signs and symbols, offers a systematic approach to understanding how meaning is created through architectural interventions. The research examines the Louvre Pyramid as a case study, applying the theoretical frameworks of semioticians and architectural theorists such as Fischer, Zevi, and Eco. The analysis focuses on three key aspects: context, function, and symbolic value, aiming to explore how contemporary additions communicate with the historic fabric of the building and how they contribute to the overall architectural narrative. A comprehensive literature review revealed that there is a gap in the study of architectural language within the context of heritage reuse, particularly in relation to contemporary additions. The findings of the study suggest that when contemporary additions are thoughtfully integrated with historic structures, they contribute not only to the aesthetic and functional quality of the spaces but also reinforce the cultural, historical, and social sustainability of the heritage. The successful blending of old and new can enhance the cultural legacy, ensuring its relevance for future generations.

**Keywords:** semiotics, louvre pyramid, adaptive reuse, contemporary additions

## 1. INTRODUCTION

Ensuring cultural continuity and establishing a link between the past and the future is ensured through the protection of historical cultural heritage. In addition to being an action against deterioration, conservation is defined as an effective tool for transferring messages from the past to the future in the natural and cultural environment [1]. The concept of reuse, which is a component of the concept of conservation, emerges as the evaluation of an architectural formation that has been produced with traditional techniques and materials that we no longer use today [2].

With the perspective of conservation by use, it is aimed to ensure the sustainability of historical buildings through transformations realized within the process of 'adaptation to the current situation'. The concept of reuse, which is a method applied in buildings that have lost their original function and can be adapted to new functions, especially in the inclusion of cultural heritage buildings into contemporary life [3], is essentially a 'change in performance' and is the process of transforming a building for a new use different from the original purpose of its construction [4]. This transformation can take many forms, from simple decoration to reconstruction. If a change in the existing function of the building is desired, or if the building can no longer serve a specific function, it can be used for a completely new purpose [5].

Reused historic buildings and contemporary additions to historic buildings as a result of reuse are seen as reflections of society, social life, cultural values and technological developments of the age. It is possible to use semiotics as a tool in analyzing, reading and interpreting the architectural and symbolic values of cultural heritage buildings and contemporary additions used outside their original function. Semiotics is a language-centered discipline that examines communication through signs and symbols. The fact that architecture has its own language and is also accepted as a mass communication tool allows architectural products to be read using semiotics. With the readings made, it is possible to both make sense of the existing values of historical buildings and their contemporary additions and to predict the semantic associations they may create for perception.

By examining the relationship between semiotics and architectural language, this study aims to analyze contemporary additions in the reuse processes of buildings and to read the relationship established with the context. In this direction, the Louvre Museum in Paris, France and its entrance addition were chosen as the study area due to the different messages it conveys to the environment and users with both the historical building itself and its new function.

## 2. CONCEPTUAL FRAMEWORK

The reuse of buildings is a multidimensional process that adapts to the transformations of the future while preserving the traces of the past and requires a combination of functional, symbolic and socio-cultural needs [6]. The meanings that people attribute to spaces enable them to become carriers of social habits and cultural memory, which necessitates the adaptation of space to new functions in reuse processes [7]. Space is considered not only as a physical entity but also as a dynamic and multi-layered system that integrates with the environment, life and culture [8]. In this context, the dynamic structure and multidimensional meaning of space reveals the necessity of comprehensive interventions for spatial needs in the reuse of buildings.

### *A. Reuse and Contemporary Addition Concept*

The process of adaptive reuse of historic buildings involves the loss of their original functions and the assumption of new functions in accordance with changing user needs and the conditions of the period [3], [9]. This process aims to preserve the historical, architectural, economic, social and cultural values of buildings by ensuring both physical and cultural continuity [9]. The continuity of cultural heritage can only be ensured if the building can respond to the needs of different periods. Some spatial inadequacies may arise at the point where cultural heritage can take on new functions in line with different needs, and in this case, the formation of additional spaces to the historical building becomes inevitable [10].

Designing additional buildings in harmony with the historic fabric, with minimal intervention and in a way that reflects the character of the period in a way that can be read from the outside is critical in terms of preserving the cultural and symbolic values of historic buildings. In reuse processes, it is necessary to make sense of these buildings by taking into account their environmental, cultural and historical contexts, and to make them suitable for user needs by analyzing their existing features correctly. This evaluation through architectural language ensures that the meaning and value of buildings and spaces for societies are carried into the future. In this way, historic buildings can be revitalized as a sustainable asset that reflects the heritage of the past while responding to modern needs.

### *B. Semiotics and Architecture*

Architecture is an existential anchor for human beings and provides this through symbols that appeal to perceptions [11]. While interpreting architectural products; social, psychological, economic, technical, aesthetic and functional factors should be taken into consideration. These factors that make up an architectural whole are gathered under three main headings that Vitruvius characterized as function, structure and form (fig. 1) [12]. Ching [13] argues that form and space can be considered as the vocabulary of the architect and that architecture is expressed through this medium of forms. After the first communication with form, users begin to perceive the architectural whole by interacting with function (fig. 2).

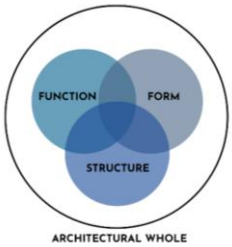



**Fig 1.** Components of architecture (schematized from Erkman, 1973)

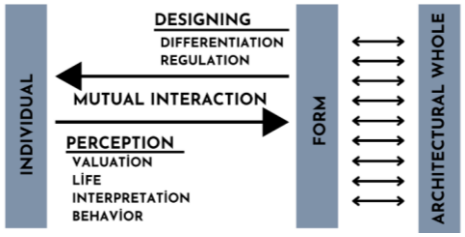



**Fig 2.** The schema of the relationship between the architectural whole and the individual (schematized from Erkman, 1973).

In this context, analyzing form and space as components of architectural language is important in the processes of conservation and transformation of historic buildings. In addition to preserving existing values, supporting and carrying them into the future, and even bringing new meanings to the existing context requires a strategic approach to the contemporary addition in reuse practices. In this process, it is important that the buildings maintain their connections with the past while adapting to current and future needs. The success of reuse projects is measured by preserving the identity and cultural values of historic buildings while at the same time transforming them into functional, aesthetic and sustainable structures. In this way, reuse and contemporary additions both respect the history of the buildings and offer the potential to create new values in the transformation process.

Stone [14] states that the existing context, structure, function and history offer important conceptual opportunities for the reuse of buildings, and that their evaluation and interpretation can provide inspiration for redesign and contemporary additions. Buildings are evaluated not only in terms of their identity and 3surroundings, but also in terms of the perception, character and scale of a particular building or place. Therefore, as Ching [13] states, reuse processes need to be analyzed in terms of form and space (function). However, the relationship between symbol and meaning should also be examined in order to understand human values in this process.

Symbols in architecture are important communication tools that contain multi-layered meanings within their environmental contexts, and for this reason, analyzing the relationship between form and space in reuse processes through architectural language plays a critical role in the preservation of the historical and cultural values of buildings as well as the success of the design [15]. The fact that architecture is a discipline based on visual communication makes perception a determining factor in this process [16]. Symbols and spatial relationships not only create an aesthetic narrative, but also shape the layers of meaning of the bond established with users.

In this context, Fiske's [17] semiotics model offers a powerful tool for analyzing symbolic meanings. This model, which allows the analysis of architectural structures on the axis of signs, codes and culture, combines the narrative dimension of space with its substance, enabling the strategic planning of the transformation of historical buildings in accordance with modern requirements while preserving their identity. Through semiotic analysis, architectural monuments become not only static entities that carry the past into the future, but also dynamic structures that generate new meanings and establish a continuous relationship with the social and cultural context. This relationship strikes a balance between continuity and innovation in both the physical and meaning dimensions of space.

*C. Reading Architectural Products*

Architectural products have the power to direct human behavior by being influenced by the social, economic, cultural and religious factors in their environment. Over time, this interaction results in a mutual communication between architectural structures and society and creates effects at the level of thought and behavior. For this reason, architectural structures can also be considered as a mass communication tool. Architecture is shaped by certain genres and movements, such as language-centered literature; the reflection of form and function through certain semantic values forms the basis of this relationship [18].

Architectural products are products born from social relations with their physical and social dimensions [19]. These structures, which are shaped as a result of the interaction of user needs and culture, gain identity according to the

values and needs of individuals and gain a semantic depth by enriching with historical, cultural and social layers. The context, architectural principles and symbolic associations of the buildings can be interpreted through architectural language in the evaluation of the additional structures that come to the agenda with the reuse of historical buildings.

Fischer [20] evaluates the meaning creation of architectural structures through value criteria such as location, size, form, arrangement and material. These criteria allow for analyzing the aesthetic, historical and social value of buildings and establish a hierarchy between similar typologies. Fischer's approach proposes an important method in architectural analysis by allowing the context and historic fabric of buildings to be examined from a sustainable perspective.

In the history of architecture, there is a broad framework ranging from Vitruvius' classical architectural principles focused on robustness, functionality and aesthetics to Zevi's innovative approaches in modern architecture. While Vitruvius [21] aims for aesthetic integrity based on order, proportion and symmetry, Zevi [22] emphasizes the interaction between the user and the space with modern elements such as temporality of space, asymmetry and integration with the environment. These two approaches create a bridge between traditional continuity and modern interpretation, allowing us to understand the relationship of buildings with the user and the environment.

Eco [23] analyzes the meaning of architectural elements through the cultural and symbolic values of formal elements. By analyzing architectural structures from a semantic perspective, he establishes a link between language, architecture and meaning. This connection contributes to the enrichment of buildings with aesthetic, scientific and cultural references and to the formation of different thoughts and feelings through symbolic values (fig 3-4). Eco's approach allows for a deeper understanding of the relationship between form and context in contemporary architecture and guides the processes of preserving and enhancing the symbolic, cultural and functional values of buildings.

**Fig 3.** Transfer of meaning within the architectural concept (Fischer, 2015)

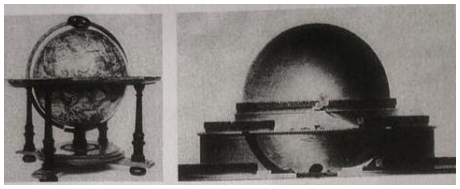


**Fig 4.** Transfer of meaning outside the architectural concept (Fischer, 2015)

When we analyze a building through its language with the different approaches of these theorists, we see that each architectural element (signifier) points to various semantic values. It is thought that these values will be useful in determining the design approaches to be followed in order to protect the sustainability of a building, especially in the process of reuse. Because after symbolizing phenomena through language, we begin to define and perceive them as signs. Then, the process of producing concrete forms is started in order to create new meanings and give depth to the building in abstract terms (fig. 5). Thus, it is thought that many values emerging due to changing architectural styles and human life requirements will make it possible to protect the sustainable values of historical cultural heritage buildings through new forms produced, as well as supporting them and making gains through the building.

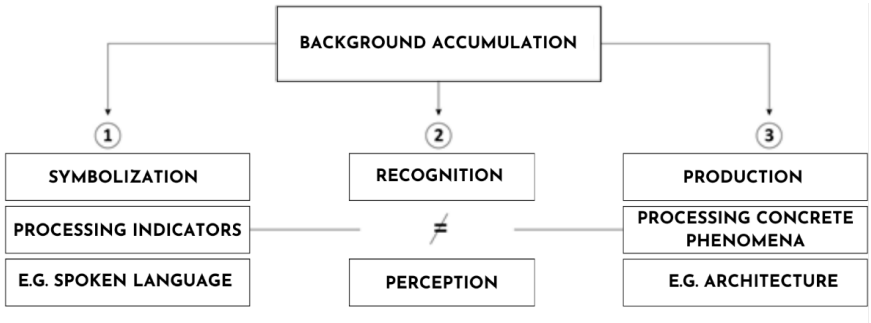



**Fig. 5.** Indicator production process (Fischer, 2015)

## 3. METHOD

The aim of this study is to analyze the historical, cultural and social sustainable values of the reused contemporary additions through the symbolic data in the context. With this analysis, it is aimed to create a road map for designers in terms of adding value to the context of the relationship to be established between the old and the new. For this purpose;

- It has been used with many different functions in the historical process.

- Of global historical and architectural significance

- The contemporary additions were built during the modern architectural period and

- Containing many symbolic elements in the context

- Originally a palace, reused as a museum

Louvre museum and its contemporary additions were selected as the sample. In this study, the reuse process of the historic Louvre Museum will be evaluated and analyzed. For this purpose, the historical development and transformation of the Louvre Museum will be analyzed. In this process, interventions and repair works to the architectural product, changing functions and architectural features will be taken into consideration.

In the research process, the Louvre Museum will be interpreted by applying the approaches and methods of different theorists. In this context;

1- Based on Fischer's criteria, the historical and architectural values of the building and its context will be analyzed.

2- A spatial reading of the contemporary culture will be realized through the architectural principles of Vitruvius and Zevi and the social needs and action relations of the users will be analyzed.

3- Through Eco's semiotics approach, the formal and semantic elements of the Louvre Museum will be analyzed and the cultural values attributed to the building and its context will be interpreted. In this context, the symbolic meanings of the building and the space, cultural and historical references and the effects of the building on its users will be examined in detail.

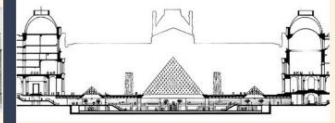
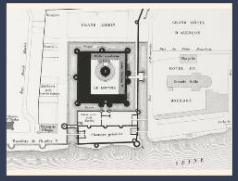
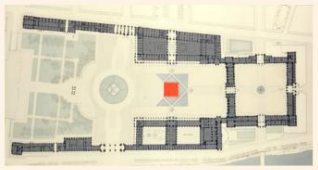
In the last stage, existing literature and academic publications on the Louvre Museum, which was selected as a field study, were analyzed. Architectural observations and spatial analyses were made on the contemporary additions and the spatial organization, functions and symbolic meanings of the museum were evaluated.

At the end of the research process, a reading of the historical, social and cultural values of the Louvre Museum will be presented using evaluation criteria and evaluation methods based on the architectural approaches of theorists. It is expected that this research will make significant contributions to academic studies and practices for the adaptive reuse of historical buildings.

## 4. HISTORICAL AND ARCHITECTURAL CHARACTERISTICS OF THE LOUVRE MUSEUM

The Louvre was built as a castle at the end of the XII. century during the reign of Philippe Auguste and started to be used as a palace in the late XIV. century as a result of certain needs [24]. The building, which embodies both the political and architectural history of France and has been restored and renovated many times [25], has been used as a castle, palace, barracks, prison and even haystack [26]. Opened in 1793 as a museum, the Louvre Palace is home to many famous paintings and sculptures, as well as being one of the largest and most established palaces ever built [25] (table I).

TABLE I THE REUSE PROCESS OF THE LOUVRE MUSEUM

| | ORIGINAL USE | REUSE | CONTEMPORARY ADDITION |
|---|---|---|---|
| BULDING |  |  |  |
| PLAN |  |  |  |
| FUNCTION | CASTLE | PALACE - HEADQUARTERS, PRISON, HAYSTACK - MUSEUM AND MINISTRY | MUSEUM |
| PERIOD | XII-XIV. CENTURY | XIV. CENTURY - 1793 - 1989 | 1989 - TODAY |

The Louvre, a medieval building, which has been used as a museum after the additions made for different purposes in different centuries and the demolition of the section (fig. 6 and fig. 8-A) belonging to the Tuileries Palace (table 1), today bears the traces of Renaissance (fig. 8-B and C), Neoclassical (fig. 8. 8-D) and modern architectural styles with contemporary additions.

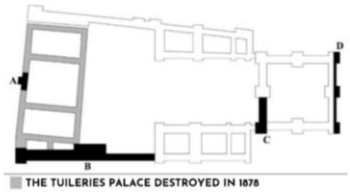



**Fig. 6.** The historical continuity of the Louvre and Tuileries. (Schematic representation based on Mansbridge, 1967)

**Fig. 7.** View from the Louvre courtyard towards the Tuileries Palace

**A-**Central Pavilion (1570-1592)

**B-** Renaissance period (1600-1609)

**C-** Renaissance period (1546)

**D-** East façade (1667-1670), Neoclassical period

**Fig. 8.** Locations of styles from different periods on the Louvre Palace (Mansbridge, 1967)

Following the cultural awakening in France in the 1980s, a number of needs emerged for the Louvre to function better as a museum. The fact that there are many different points of entry to the museum and that many artifacts are kept in storage has caused the Louvre to fail to function at the desired level. In line with the main problem and the needs to be met, Ieoh Ming Pei, one of the famous architects of that period, was commissioned to add a new value to the rich identity of the Louvre [25; 27].

Before starting his design work, Pei conducted research on the Louvre and its surroundings and studied the techniques of France's famous landscape architect André Le Nôtre's use of open space, geometry, light and water, aiming to reflect these elements in the contemporary additional design of the Louvre [26]. The Glass Pyramid, which is compatible with a symmetrical building stock and landscaping extending from the Tuileries gardens to the Louvre, was designed in line with this understanding. Taking into account the historical context, Pei referenced the

Renaissance and Neoclassical forms of the Louvre in his design and created a pyramid form in the proportions of the Giza pyramid, referring to 'Napoleon's Battle of the Pyramids' [28]. This design, while preserving the historic fabric, integrates the Louvre into its urban environment with a modern touch, and manages to highlight both itself and the historic building by making the historic visible with a contemporary interpretation. This example demonstrates the importance of developing sustainable and harmonious strategies for the reuse of buildings, taking into account historical and cultural contexts.

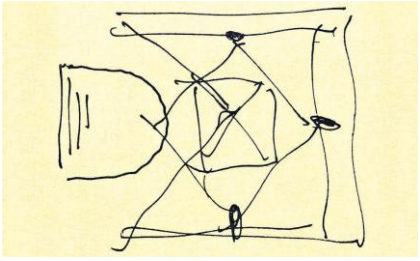


**Fig. 9.** Plan sketch of Pei's pyramid (Rubalcaba, 2011)

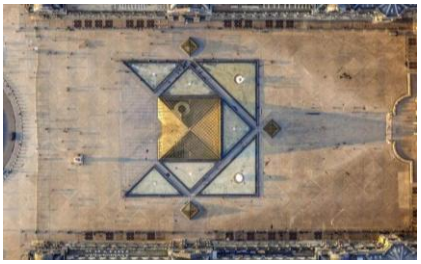


**Fig. 10.** Top view of the glass pyramid in the courtyard. Source: Pinterest, accessed on [20.05.2022], URL: https://tr.pinterest.com/pin/72128031523006313/.

The pyramid is surrounded by triangular pools and three small pyramids are used adjacent to these pools. Together with the diagonal tiles used on the courtyard floor, the design and its surroundings have become the symbol of a geometric unity (fig. 10). This unity is reinforced by the pools around the glass pyramid. In addition, the pool application is one of the factors in preventing the contemporary planting from having a rigid, hard and concrete appearance like the Egyptian pyramids in the minds. By supporting the use of transparent and lightweight materials with the landscape application, the cultural context of the pyramid form is physically eliminated and the architectural historical texture of the courtyard is preserved by obtaining reflective and transparent surfaces.

In order to solve the problem of reception and circulation, which is the biggest problem of the museum in the pyramid design, Pei took the visitors from the courtyard underground and created connection routes through wide corridors that provide access to all three wings of the museum (fig. 9). The use of glass in the design not only supports the function and illuminates the underground reception area with natural light, but also creates a unity through contrast in the relationship with the historical building in line with conservation approaches.

In conclusion, the architectural transformation process of the Louvre Museum reflects the changes the building has undergone from the Middle Ages to the present day. While preserving its historical texture, the museum has been modernized with Pei's design. Therefore, the Louvre Museum represents an important milestone in the history of architecture and has become a popular tourist attraction worldwide.

*D. Evaluation of the Louvre Museum Contemporary Addition with the Approaches of Architectural Language Theorists*

In this part of the study, the 'context', 'function' and 'symbolic value' of the Louvre Museum and its contemporary addition are examined respectively with the approaches of theorists such as Fischer, Zevi and Eco, who conduct language-centered studies by bridging the concepts of semiotics and architectural language.

*Evaluation through Fischer's value criteria:* The Louvre Museum is located on the banks of the Seine River, on an area of approximately 210,000 square meters and is ideally located in the historical fabric of Paris to show the power and splendor of the palace. The historic building, built in classical style on medieval architectural features, is the largest integral structure in the fabric. The contemporary addition of the museum was built in the center of the courtyard of the historical building, in harmony with the mass integrity of the museum, without exceeding its width, at the right proportion and distance. The contemporary addition was designed in a modern architectural approach according to the art perception of the period. The modern influence can be seen both formally in the mass of the contemporary addition and in the spatial approach in which it provides functional gain to the historic

building.

The whole building serves only as a museum in a new context formed by the combination of classical architecture and modern architectural style. In the new design, the visibility of the historical texture has been preserved and people's attention has been drawn to this point by using contemporary materials. In this way, the existing values of the context were not only supported, but also increased the awareness of the region by arousing curiosity and offering people the opportunity to have a new experience. In addition to these, the functional problems of the building have been eliminated and the museum has a spatial arrangement with strong interaction. All these contrasts created with the architectural language have increased the architectural values and enabled the building to witness a much wider period in the timeline.

*Vitruvius and Zevi Evaluation:* In the centre of Paris, the Louvre Museum combines the classical values of the past with contemporary architectural principles, representing a fusion of historic and modern architecture. The museum's historic palace was built in accordance with Vitruvius' principles of solidity, aesthetics and functionality. Aesthetics is emphasised by the order, proportion and symmetry of the building, while robustness is manifested in the use of high-quality materials such as stone, marble and wood. Functionality is evident in the design of the palace in accordance with the needs of the period and has been successfully reorganised to function as a museum today.

TABLE II Analyzing contextual values through Fischer's criteria

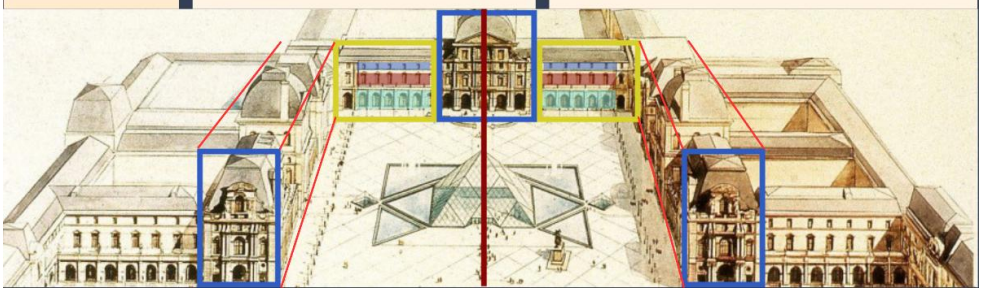
| | HISTORICAL BUILDING | CONTEMPORARY ADDITION |
|---|---|---|
| LOCATION | THE CENTRAL LOCATION OF THE HISTORICAL BUILDİNG CREATES A FOCAL POINT THAT KEEPS THE HISTORICAL MEMORY OF THE CITY ALIVE. | THE FACT THAT THE CONTEMPORARY ADDITION IS LOCATED ON A SYMMETRICAL AXIS İN THE COURTYARD OF THE BUILDING INDICATES THE PRESERVATİON OF THE SPATIAL CONTEXT AND THE PROVISION OF A HARMONIOUS ADDITION. |
| SIZE | IS THE LARGEST INTEGRATED HISTORICAL BUILDING IN THE REGION. | IT HAS A DESIGN THAT WILL NOT EXCEED THE WIDTH OF THE HISTORICAL BUILDING AND HAS DIMENSIONS THAT WILL LEAVE A DISTANCE BETWEEN IT AND THE BUILDING. |
| FORM | THE GEOMETRIC AND ORNAMENTAL DETAILS OF THE RENAISSANCE AND NEOCLASSICAL STYLE, WHICH BEAR THE CHARACTERISTICS OF MEDIEVAL ARCHITECTURE, REFLECT THE AESTHETIC UNDERSTANDING OF THE PERIOD. | THE MİNIMAL AND GEOMETRIC FORMS OF THE CONTEMPORARY ADDITION CONVEY MODERN ARCHITECTURE'S EMPHASIS ON SIMPLICITY AND FUNCTIONALITY. |
| ARRANGEMENT | THE FACT THAT THE HISTORICAL BUILDING IS BASED ON THE PRINCIPLES OF ORDER, SYMMETRY AND PROPORTION IS AN INDICATION OF AESTHETIC AND SPATIAL HARMONY. | IT IS NOTEWORTHY THAT THE MODERN DESIGN IS IN HARMONY WITH THE ENVIRONMENT, BUT IS AN ORIGINAL INTERVENTION. |
| MATERIAL | NATURAL MATERIALS SUCH AS STONE, MARBLE AND WOOD IN THE HISTORIC BUILDING SYMBOLIZE THE CRAFTSMANSHIP OF THE PERIOD AND THE USE OF LOCAL RESOURCES. | THE MODERN MATERIALS OF THE CONTEMPORARY ADDITION, SUCH AS GLASS, STEEL AND ALUMINUM, ARE INDICATIVE OF TODAY'S TECHNOLOGY AND EMPHASIS ON SUSTAINABILITY. |

The glass pyramid stands out as a structure that reflects Zevi's modern architectural principles. The continuity of the space is ensured by the integration of the interior and exterior thanks to the transparent glass material. The naturalness of the materials and the shell-structure understanding are emphasised by the use of glass and steel together, while the pyramid fulfils the function of both museum entrance and lighting, supporting the principles of sequence and land-structure integration.

Vitruvius' classical principles based on order and symmetry and Zevi's modern approach based on spatial continuity and functionality come together in a balanced way in the Louvre's historic structure and contemporary addition. In terms of semiotics, this combination relates the symbolic and cultural meanings of the buildings to the urban context and social interactions. Thus, the Louvre exists as a unique icon in the history of architecture, blending past and future.

TABLE III Analyzing spatial and social values through Vitruvius and Zevi principles

| | HISTORICAL BUILDING | CONTEMPORARY ADDITION |
|---|---|---|
| CLASSIC CODE | ORGANISATION<br>RATE/PROPORTION<br>SYMMETRY (INCLUDING CONTEXT) | RATE/PROPORTION<br>SYMMETRY (INCLUDING CONTEXT) |
| ANTICLASSIC CODE | | SYNTAGM<br>CANTILEVER-SHELL-MEMBRANE STRUCTURE<br>TEMPORALITY OF SPACE<br>REINTEGRATION OF BUILDING, CITY AND LAND |



The comparison in Table 3 shows that the classical architectural language is used in common in façade design in both historical and modern buildings, but modern architectural principles are not included in the historical building. While the classical understanding prioritised form over function, over time, the importance of functionality has led to the inability of historical buildings to respond to modern requirements and the need for additional structures in reuse processes. While the construction of the Louvre Palace as a royal palace suitable for individual use reflects the classical understanding of order and aesthetics, the need for transformation into a circulation-oriented structure arose after it gained the function of a museum.

The glass pyramid was designed to meet the circulation requirements of the museum and to establish a visual connection between the interior and the exterior. The transparent glass and steel materials emphasise Zevi's modern architectural principles of naturalness of materials, temporality of space and building-environment integration, while the symmetrical layout of the pyramid is designed in harmony with Vitruvian principles of order, proportion and symmetry. Beyond an aesthetic intervention, the glass pyramid offers a functional solution that adapts the historical building to modern living conditions.

In conclusion, Vitruvius' classical principles and Zevi's modern approaches come together in the context of the Louvre's historic structure and the glass pyramid, contributing to our understanding of the relationship between architectural history and contemporary architecture. This evaluation provides an important framework for analysing the transformation and functionality of buildings in context.

*Evaluation on Eco's Criteria of Value:* The Louvre's historic structure and its modern glass pyramid offer important symbols in terms of their architectural identity and contextual meaning. The historic palace has become a symbolic structure of French culture with its use as a royal palace, its regular facades and aesthetic details. Its re-functioning as a museum further reinforced the cultural qualities of the building. The glass pyramid, on the other hand, draws attention by offering a modern entrance while harmonising with the historical structure and making formal connotations.

*Architectural connotations:* Unlike traditional pyramids, the glass pyramid offers a design that directs the perception to the historical structure with its transparent and permeable structure. The structure formed by the steel skeleton with triangular modules gives a sense of strength and durability, while the modular structure provides a proportional and balanced visuality. The glass material reinforces the harmony of the pyramid with the historic building and reduces visual pressure. This design has created a harmonious relationship between the pyramid and the historic building by placing a physical and visual distance between them.

*Historical connotations:* The historic building has survived by being used in different functions and has become a symbolic part of French culture. The pyramid-shaped contemporary addition refers to the Egyptian civilisation and

the tombs of kings, referring to the deep-rooted history of the Louvre. The subterraneanisation of the spatial arrangement is seen as a contemporary interpretation of the underground structures of the Egyptian pyramids. Directing the visitors to the museum through the underground corridors starting from the pyramid establishes a historical and spatial connection.

*Aesthetic Implications:* The glass pyramid was designed with a contrasting approach in terms of form and material in order not to overpower the historic building. The use of transparent glass allows the historic building to be easily perceived from the courtyard, while avoiding imitation of identity. This design has created a visual and stylistic balance between the historic building and the modern addition, creating a symbol that unites the past and the future.

*Conclusion:* The Louvre's historic structure and glass pyramid offer symbolic, aesthetic and functional meanings within Eco's value criteria. The balance between the orderly and symmetrical structure of the historic building and the transparent, lightweight and modular design of the contemporary addition brings history and modernity together, reflecting the transformation of architectural identities in context.

TABLE IV Reading cultural values through Eco's approach

| | HISTORICAL BUILDING | CONTEMPORARY ADDITION |
|---|---|---|
| ARCHITECTURAL CONNOTATIONS | • THE DETAILED EMBROIDERY, SYMMETRICAL ARRANGEMENTS AND USE OF LOCAL MATERIALS OF THE RENAISSANCE AND NEOCLASSICAL STYLE REPRESENT THE DESIGN APPROACH AND AESTHETIC VALUES OF THE PERIOD. THE SYMMETRICAL LAYOUT OF THE BUILDING CONVEYS A MESSAGE OF POWER AND BALANCE. | • THE USE OF GEOMETRIC SHAPES AND GLASS REINFORCES THE EMPHASIS ON TRANSPARENCY AND LIGHTNESS IN MODERN ARCHITECTURE. THE GLASS MATERIAL NOT ONLY INTEGRATES THE BUILDING WITH ITS SURROUNDINGS AND REFLECTS MODERN TECHNOLOGY, BUT ALSO ALLOWS THE SUBTERRANEAN SPACES TO RECEIVE LIGHT. IN ADDITION, THE INTEGRATION OF THE PYRAMID INTO THE GROUND EMPHASISES THE FUNCTIONALITY OF UNDERGROUND SPACES IN ARCHITECTURE. |
| HISTORICAL CONNOTATIONS | • THE TRANSFORMATION OF THE LOUVRE INTO A MUSEUM AFTER THE FRENCH REVOLUTION SHOWS THAT THE BUILDING WENT BEYOND BEİNG A MERE PALACE AND BECAME A NATIONAL CULTURAL SYMBOL. | • THE PYRAMID FORM ALLUDES TO THE MYSTICAL AND MONUMENTAL IMAGERY OF ANCIENT EGYPT, WHILE AT THE SAME TIME DEMONSTRATING THAT THE MODERN WORLD CAN RECLAIM HISTORICAL HERITAGE WITH A CONTEMPORARY INTERPRETATION. THE RELATIONSHIP BETWEEN NAPOLEON AND THE PYRAMID CREATES A LAYERED NARRATIVE OF HISTORY. |
| AESTHETIC CONNOTATIONS | • THE DETAILED ORNAMENTS AND SCULPTURAL ELEMENTS USED IN THE FACADE ARRANGEMENTS EMPHASISE THE SPLENDOUR AND ARTİSTİC VALUE OF THE HISTORICAL BUILDING. THE DOME AND ARCHES REPRESENT THE TIMELESS AESTHETİCS OF TRADITIONAL ARCHITECTURE. | • THE SIMPLE GEOMETRIC DESIGN OF THE PYRAMID OFFERS A VISUALLY BALANCED AND CONTEMPORARY AESTHETIC. THE INTERIOR IS ILLUMINATED BY LIGHT THROUGH GLASS SURFACES, ENHANCING THE AESTHETİC EXPERIENCE OF THE SPACE. |

The architectural, historical and aesthetic values that the historical building has gained over time have been deepened semantically with the contemporary addition. The symbolic approach and the perceptual associations of the chosen form not only fulfil the spatial need of the historical building, but also enrich the context both functionally and culturally. The fact that the building attracts attention by creating an element of curiosity with both its mass form and its design containing contrasts is one of the strongest aspects of the design (table 4).

## 5. CONCLUSIONS

As in the case of the Louvre Museum, historical and contemporary structures interact with each other to create a spatial and semantic unity. While the old structure of the Louvre Museum reflects the historical and aesthetic values of the French royal palace, the contemporary glass pyramid emphasizes the modern functionality and innovative identity of the museum. These two structures harmoniously combine historical and contemporary architectural elements and strengthen the identity and function of the museum by considering spatial balance and proportions. For this reason, the Louvre Museum's historic structure and the glass pyramid can be considered a successful example of integration between architectural history and contemporary structures. The two buildings complement each other both aesthetically and functionally, while at the same time reflecting the architectural values of their respective periods. This integration contributes to the preservation and enhancement of architectural heritage by offering visitors and users the opportunity to experience the transition between historical and contemporary architecture.

Analyzing and understanding the symbolic and socio-cultural values of space through the approaches of theorists offers a deeper and more inclusive perspective than focusing only on the functional and physical aspects of space. This approach emphasizes the importance of sustainability and social values for the conservation and reuse of

cultural heritage buildings, but also becomes an important component of people's relationships and lifestyles with places. Therefore, paying attention to these values and building-human relationships in space design and planning will contribute to creating more sustainable and human-centered spaces.

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