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Assessment of the Erzurum Kudaka (Old Tekel) Building in Light of Modern Architectural Principles Using the Example of Villa Savoye

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Abstract: Modernism in architecture with being exhibited new architecture principles by Le Courbusier, took hold of the whole world by starting from Europe. While this process progressed rapidly in some geographies and the acceptance of new architecture and modernism by the society was faster, in some geographies, it was accepted more slowly due to different reasons such as the lifestyle, culture, and aesthetic understanding of the society. Erzurum is one of the cities where new architecture is interpreted and modernism is seen. In addition to this, how much modernism and new architecture effects are seen in Erzurum is a separate issue. In this study too, the effects of new architecture on Erzurum have been discussed over the KUDAKA (Old Tekel) building which is built in 1939, after 10 years after the Villa Savoye which is the first example of the new architecture. Within the study, the principles of New Architecture which is put forward by Le Courbusier, Villa Savoye, the Tekel building, and KUDAKA with its current transformation, It is scrutinized with the help of painting. As a result of the scrutinization, it was discussed which principles were put forward in the Tekel building and it was analyzed which principles were continued in the building's current situation. In conclusion, over the KUDAKA (Old Tekel) Building which is one of the first modern architecture examples, the effects and changes of the New Architecture in Erzurum, which continues its influence by taking the whole world under its influence, are revealed.

Keywords: Villa Savoye, New Architecture, Le Courbusier, KUDAKA Building, Tekel Building.

1. Introduction

In the history of architecture, significant developments have occurred in interaction with inventions, progress in human history, and societal changes. In this context, one of the most pivotal turning points for both human history and architectural history is the Industrial Revolution. Following the Enlightenment, there were first the Scientific Revolution and then the Industrial Revolution. The Industrial Revolution brought about a major change in societal structure, transitioning from an agrarian society to an industrial one. During this period, industrial cities emerged around factories, and the growing railway network accelerated this urban concentration. However, industrial cities that were unprepared for a rapid wave of migration experienced decline in certain areas.

On the other hand, the experiences of individuals in industrial cities of the industrial society contributed to the French Revolution] (Kulözü-Uzunboy and Kocabaş, 2021). The Enlightenment and subsequent developments, including the Scientific, Industrial, and French Revolutions, led to the emergence of modern industrial society and modernity itself. The evolving and changing needs of individuals in modern industrial society gave rise to a demand for new architectural solutions. Furthermore, the industrial production's enabling of new building materials and construction techniques led to the construction of various architectural structures with different functions, such as Courthouses, Stock Exchanges, Opera Houses, Exhibition Halls, and Art Galleries (Birol, 2006; Aslanoğlu, 1983).

In short, as Lewis Mumford expressed, industrial cities characterized by railways, factories, and decline areas became centers for producing architectural solutions to the evolving and changing needs of modern society **(**Mumford, 2013). As Birol also stated, modern architecture emerged in response to the social, technical, and cultural changes that occurred during this period (Birol, 2006). Modern architecture, in this sense, introduced a wide range of principles encompassing technical, societal, and formal aspects **(**Dostoğlu, 1995; Kırıcı, 2013).

When considered in formal terms, the foundation of the modern architecture movement was laid in the 19th century, with movements like Art Nouveau led by John Ruskin and Henry Van de Velde on one hand, and the simplification and formal purification in architecture led by Louis Sullivan in America on the other hand **(**Yaldız and Sayar, 2016). However, modern architecture, with its transparent, linear, pure geometric forms, flexible spaces, well-lit interiors, and the use of modern materials and technology, reached its peak in the 1920s. Renowned designers like Walter Gropius, Le Corbusier, and Mies Van der Rohe became prominent for their innovative designs **(**Aslanoğlu, 1988).

Among the representatives of the modern architecture movement, Le Corbusier played a significant role in shaping the face of modern architecture **(**Dilaveroğlu, 2020). His Five Points of Architecture outlined a clear theory for modern architecture, emphasizing (1) the use of pilotis to elevate buildings, (2) an open floor plan, (3) a separation of the structure from the facade to achieve free facades, (4) horizontal strip windows for even light distribution, and (5) the use of rooftop gardens **(**Butini, 2015).

These principles, especially the use of pilotis, free plan, and free facade, radically transformed architectural design and contributed to the development of a new architectural language. Le Corbusier, through his work, emphasized the use of standard elements and efficient design to create simple, economic, and functional buildings **(**Mehmeti, 2014).

In the first of these principles, pilotis, which are like columns that raise a building above the ground or water, serve as supports. Beyond their supportive function, pilotis help elevate architectural volume, lighten it, and create space for circulation underneath the structure **(**Mehmeti, 2014). Elevating the building on pilotis on the ground floor allows for vehicle circulation and other services, freeing up space within the structure (Benjamin, 1998).

The second principle, known as the free plan, is expressed as a focal point of the 5 principles [13]. With the free plan, the interior space form is determined according to function, evolving from the inside to the outside on columns and uninterrupted floors.

Thirdly, by differentiating the building's structure from its facade, free facades are achieved. The structure on pilotis separates the facades from the columns. Facades serve no other purpose than separating interior and exterior spaces with doors and windows (Benjamin, 1998).

Fourthly, by separating the facade from the structure, strip windows running along the entire facade can be used in architecture. Strip

windows ensure that all rooms benefit from daylight and natural ventilation equally and to the maximum extent (Hebly, 1991).

The last of Le Corbusier's defined principles, roof gardens, allow the integration of the ground-level garden with the house while serving a different function. Roof gardens can also be designed to accommodate recreational areas or provide space for wildlife in addition to domestic functions **(**Mehmeti, 2014). Roof gardens offer many advantages, including climate benefits, insulation of the upper part of the house, and the creation of different functions and volumes through the use of materials and space.

Modern architecture had a profound impact on Turkey as well, particularly during the early years of the Republic. During this period, the country witnessed a significant transformation in its architecture, with the emergence of what is known as the First National Architectural Movement. However, the principles of modern architecture, as outlined by Le Corbusier and other pioneers, influenced the design and construction of various buildings in Turkey during this era.

The multifaceted process of societal change known as modernization found its reflection in art and architecture through the modernist movement. The influence of this movement, which developed under the leadership of renowned architects like Le Corbusier, who are considered representatives of modern architecture, has been felt on architectural products produced all around the world, just as the rapid spread of the modernity project itself.

Within the framework of the modernist movement, the concept of a new architecture and principles presented by Le Corbusier has accelerated the spread of modernism. As a result, the effects of modernism began to be observed not only worldwide but also in Turkey. In other words, modernism found its best expression in Europe in architecture and urban development. Similarly, in Anatolian lands, modernism became a space where a profound cultural change that encompasses architecture and urban development is reflected, and this change is read from the space itself.

In this context, the process of modernization in Turkey is analyzed in four stages: (1) Shy Modernity (1850-1923), (2) Radical/Radical Modernity (1923-1950), (3) Populist Modernity (1950-1980), and (4) Overcoming the Modernity Project (1980-) (Kulözü, 2016; Tekeli, 2005; Tekeli, 2009).

It is evident that the process of modernization began in the late Ottoman Empire. However, after the establishment of the Republic of Turkey, modernization was conceived as a project during the era of radical modernity. According to the approach followed during this period, a modern society must live what modern life demands, and the success of the regime became represented by the production of the capital city where these experiences would take place (Tekeli, 2010; Tankut, 1988; Kulözü, 2016). Accordingly, the Republic administration believed that the radical modernity project could only be achieved through planning and initiated a planned development process, especially in Ankara.

Nonetheless, the developments were deemed insufficient, and measures were taken to counter the I. National Architecture movement that emerged parallel to the nationalist discourse against Westernization during the Shy Modernity period. Thus, in Turkey, the Modern Architecture Era, which would prevail from 1927 until 1939, began.

In Turkey, the New Architecture, a part of the modern architectural era, was interpreted in the context of the early Republican period's "renewal" goals. During this period, the interpretation of modern architecture can be observed in many buildings constructed in Turkey (Ergut, 2009). In the field of architectural history in Turkey, this period, known as the Modern Architecture Era (1927-1939), is divided into three sub-periods. The first of these is the Foreign Architects Period, which lasted from 1927 to 1933. During this period, a building that is considered the country's first significant modern structure was

designed by Theodor Jost and is known as the Ministry of Health Building, which was designed in 1926-1927. Among the most influential foreign architects of this period were Clemens Holzmeister, Ernst Egli, and Bruno Taut. Notable architectural structures of the period include the Central Bank Building (Clemens Holzmeister, 1931-33), Ismet Pasha Girls' Institute (Ernst Egli, 1930), and Ankara University Faculty of Language and History-Geography Building (Bruno Taut, 1936-38).

The second phase of the modern architecture era in Turkey, which took place between 1933 and 1937, was characterized by the dominance of local architects. Prominent architectural structures of this period include Florya Mansion (Seyfi Arkan, 1934), Florya Beach Facilities (Seyfi Arkan, 1936-37), Çemberlitaş Palace (Seyfi Arkan, 1937-38), Istanbul University Observatory (Arif Hikmet, 1934-36), and Ankara Railway Station (Şekip Akalın, 1935-1937). The third phase of modern architecture in Turkey occurred between 1937 and 1939 (Karasözen, 2013). As noted by Karasözen, this period in Turkish architectural history was marked by the diminishing dynamism that characterized the beginning of the modern architecture era and the gradual abandonment of the distinct features of the architectural understanding of that time.

Within the context of the modernization project in Turkey, which is an important part of modern architecture, it was also considered as an urban development project (Kulözü, 2016). Following the planned development of Ankara to give it a modern urban appearance after the success of the Turkish Republic was associated with the era of Radical Modernity, the obligation to plan cities, particularly Istanbul, was introduced. This was aimed at spreading the process of modernization spatially to every corner of Anatolia. Consequently, planned development, or in other words, planned modernization, also began in Erzurum in 1938-1939.

With the modernization and industrial improvements of Turkey; there were many companies established from government. One of the most important company is Tekel, manufacturing and marketing tobacco and alcohol. This company had got many buildings constructed in different cities of Turkey. office building were constructed in Erzurum.

The focus of this study is the KUDAKA (Old Tekel) Building, which was produced in Erzurum's planned modernization process in 1939 and is considered an early modern structure in a traditional Anatolian city (Kulözü, 2016). When evaluated in the context of Turkish architectural history, it should be emphasized that it was produced in the third

Figure 1: *Turkey's first modern building: Ministry of Health Building (1926-1927) (Gürdağ, ve Koca, 2020).*

phase of modern architecture, the last stage of modern architecture.

Therefore, within the scope of this study, the focus will be on the KUDAKA (Old Tekel) Building, one of the modern structures in Erzurum, which was one of the first cities in Anatolia to undergo planned development in the context of Turkish modernization. The aim of the study is to examine the KUDAKA building, one of Erzurum's early modern structures, based on Le Corbusier's 5 principles of modern architecture. This way, the modernity of the Old Tekel Building, one of the first modern architectural structures in Erzurum that entered a planned modernization process, will be discussed in accordance with Le Corbusier's criteria for modern architecture. Furthermore, the impact of the changes the building has undergone from its construction in 1938-1939 to the present on its modernity will also be explored.

Le Corbusier's 5 principles, first applied and considered one of the first examples of modern architecture, can be seen in the Villa Savoye, located in Poissy, a town 33 km outside Paris (Özcan ve Ürük, 2019). Construction of the building began in 1929 and took 2 years, completing in 1931 (Murphy, 2002). Although used as a residence, Villa Savoye was recognized as one of the symbolic structures of modern architecture in the 1960s (Murphy, 2002). In the 1970s, the building was protected by the French Ministry of Culture (Samuel ve Jones, 2012), and in 2016, it was included in the UNESCO World Heritage List (Url-1., 2021). This significant work of modern architecture remains open to visitors as a museum to this day.

In the following sections of this study, in line with the study's objective, the modernization story of Erzurum and Erzurum's modern architectural products will be presented. Subsequently, the study's material and methodology will be introduced. The following section will present the findings obtained in the research with the KUDAKA Building as an example, and the study will be concluded with the results and discussion section.

2.Erzurum's modernization process and modern architectural structures

With a history of settlement dating back to 4000 BC, Erzurum has been one of the significant settlement centers in Anatolia throughout every period of history **(**Kulözü**,** 2016). In line with the subject of this study, when we examine the history of Erzurum's spatial development from the perspective of modernization, it becomes apparent that Erzurum had a traditional Turkish city appearance until the proclamation of the Republic **(**Kulözü**,** 2016) (Figure 2).

Figure 2: *Before modernization: Taş Mağazalar District in Erzurum at the beginning of the 20th century (Kulözü, 2016).*

After the declaration of the Republic in 1923, Erzurum embarked on a radical modernization period, initiating a significant modernization process. Within this framework, in 1938-1939, French urban planner J.H. Lambert prepared a plan for Erzurum. This plan aimed to guide the interventions in the socio-spatial development process systematically and transform the traditional Turkish city appearance of Erzurum into a modern city image **(**Kulözü**,** 2016).

This comprehensive cultural transformation, referred to as Erzurum's modernization, was seen as a urban development project due to the nature of modernization, and architectural structures played a crucial role as the most important agents, as was the case across the entire country. Following the declaration of the Republic and Erzurum's entrance into a planned modernization and development process, significant architectural structures were constructed in the city.

In this context, the Republic Square, designed as a modern public space in the Lambert Plan, played a pivotal role in the transformation of Erzurum into a modern image that incorporated Western forms and elements (Kulözü, 2017). The architectural structures that defined the Republic Square and formed a square with the Halkevi building, symbolizing the cultural transformation of the period, included the Officer Lodging Building, the 29th Division Command Building, and the 9th Corps Command Building. In addition to these structures, at a distance from the square along the Hospitals Street, Erzurum High School, designed by Lambert, and at a similar distance from the square along the Republic Street, the Tekel Building, were positioned. Apart from Halkevi, four other structures defined the square. In summary, the Old Tekel Building, which is currently used as the KUDAKA building, gained its significant position within the city, which it still maintains today, through the Lambert Plan.

Detailed information about the Tekel Building, designed during Erzurum's radical modernity period and serving as the focus of this study, which has not been the subject of an academic study before, and its current use as the KUDAKA Building, will be presented in the following section under the material heading.

Figure 3: *Plan of Lambert (Kulözü, 2016).*

3.Material and Method

3.1.Material

This study's material is primarily the Tekel Building, which is currently used as the KUDAKA Building, one of Erzurum's pioneering modern structures. On the other hand, in this section of the study, KUDAKA Building will be analyzed in terms of modernity based on Le Corbusier's five principles, along with Villa Savoye.

Erzurum's contemporary urban development has been significantly influenced by the implemented Lambert Plan (1938-1939) (Kulözü, 2017). The KUDAKA Building, which comprises the material of this study, has gained its prominent position within the city due to the Lambert Plan. The KUDAKA Building is located on Cumhuriyet Caddesi, just one building's distance from Cumhuriyet Meydanı, which lies at the western border of the city as per the Lambert Plan. Cumhuriyet Caddesi terminates at Cumhuriyet Meydanı and is designed as the city's backbone, connecting Erzurum's modern and traditional textures (Kulözü, 2017).

The Tekel Building, currently used as the KUDAKA Building, was constructed in 1939. The building is approximately centered within the plot and has a rectangular form with a basement + ground floor + 1st floor layout. It is created by combining two rectangular prismatic blocks of different sizes, covering an approximate area of 550 m2. A protruding mass with four supports is located at the western end of the long side of the building's south façade, which provides the entrance to the building. Access to the building's entrance is reached through five steps and then passing through two columns. There is one window on each side of the door. For the KUDAKA building, an area outside the historical development zone of the city, where construction activities were observed in the 1930s and where construction was taking place at the time, was chosen. Located one building distance from Cumhuriyet Meydanı and on Cumhuriyet Caddesi, defining

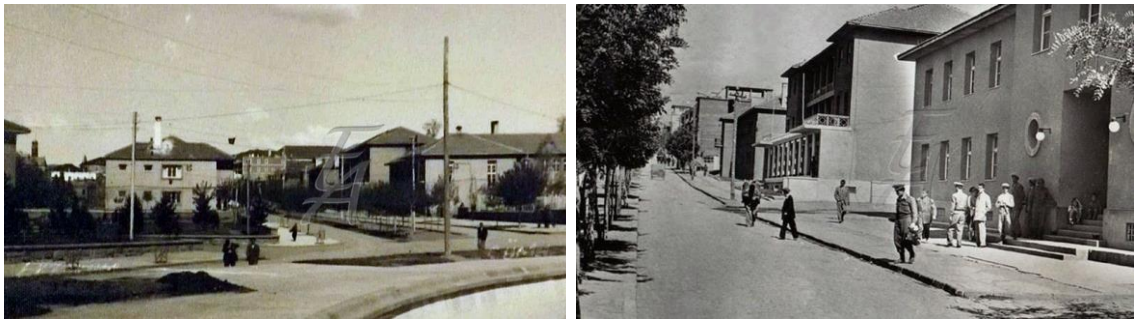
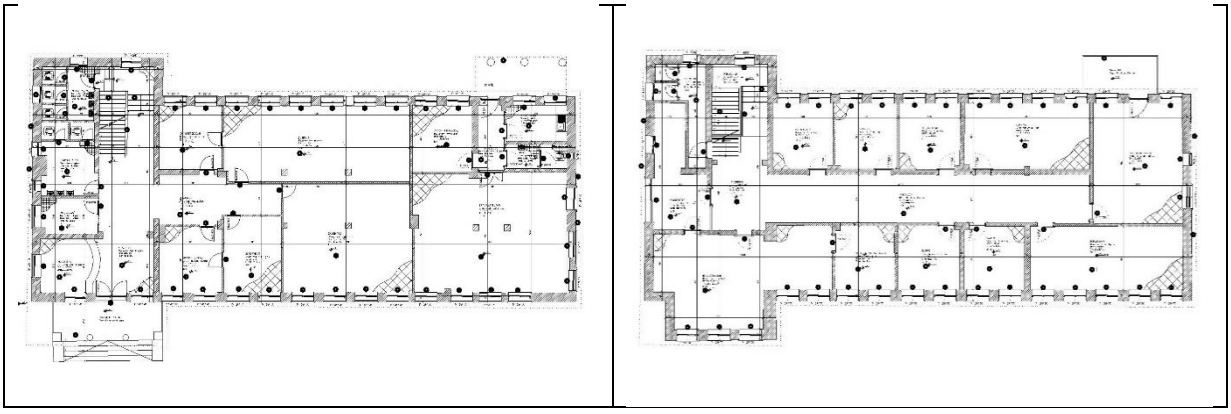


Figure 4 *(Left) View from Cumhuriyet Meydanı to Cumhuriyet Caddesi in the 1950s (Tekel Building on the left, PTT Building on the right) (Url-2., 2021). (Right) The Old PTT Building and the Police Station (former Orduevi) next to it. (Url-3., 2021).*

Table 1: *KUDAKA Building Plans*



the city's backbone, the building was positioned opposite the Old PTT Building (demolished) constructed during the same period.

The building, which served as the Tekel Erzurum Coordinator Directorate for many years, was registered on 13.11.2008 with the decision number 1081 of Erzurum Cultural and Natural Heritage Preservation Regional Board. In 2009, a survey, restitution, and restoration work were carried out for the building (Table 1). Located in the Gez Mahallesi, 281 Parcel, 9 Parcel, the building has been used as the KUDAKA Building since 2011.

3.2.Method

This study focuses on KUDAKA Building, one of the pioneering modern structures in Erzurum, and it will be examined through the lens of the five principles defined by Le Corbusier for new architecture. The principles detailed in the introduction of the study are as follows: (1) Raising the building on pilotis, (2) Free plan or open floor plan, (3) Free facade, (4) Horizontal strip windows, and (5) Roof garden (Etlin, 1987). The primary method used for this study aligning with its objectives will be a descriptive analysis. Furthermore, to demonstrate how these five principles were manifested in architectural structures, the Villa Savoye structure, where these principles were first applied (Jeffrey, 1998), will also be presented through these principles. In this way, it will be possible to scrutinize how the KUDAKA Building, constructed a decade after the definition of the five principles of modern architecture, corresponds to these principles in the context of the 3rd phase of modern architecture in Turkish architectural history.

When examining the Villa Savoye structure before analyzing the modernity of the KUDAKA Building, it can be observed that the building consists of a ground floor and two upper floors. The floor plans of the building are presented in Table 2, and images of the building are provided in Figure 6.

As evident in the floor plans of the building, half-open spaces are created on the ground floor by elevating the pilotis. Moving to the first floor

Table 2: *Villa Savoye Plans (Url-4., 2021), (Url-5., 2021).*

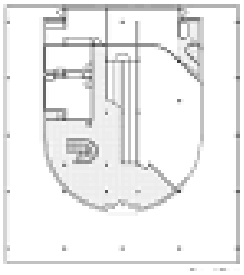
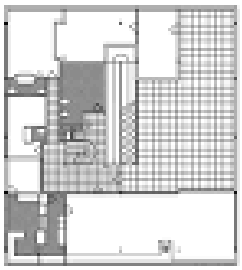
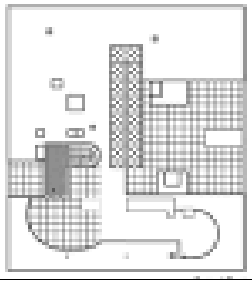
		
Ground Floor Plan	First Floor Plan	Second Floor Plan

Figure 5: *Villa Savoye (Url-6., 2021).*

through the stairs located in the entrance area, the living area of the residence is situated on this level. The second floor of the building features a characteristic element of modern architecture, the roof garden.

4.Findings

This part of the study involved a comparative analysis of the "KUDAKA Building," the focus of the study, with Villa Savoye structures using Le Corbusier's 5 principles of modern architecture (Table 3).

In the context of the first principle of elevating the building on pilotis, it can be observed that the lower floor of Villa Savoye is elevated on pilotis. However, the Tekel Building does not elevate the structure on pilotis as seen in Villa Savoye. Still, the column design in the entrance area of the Tekel Building serves a similar function. Over the years, changes in the exterior cladding material have diminished the visual and aesthetic impact of the elevation effect in the entrance area of the KUDAKA Building.

In the second principle of free or open floor plan, Villa Savoye's floor plan consists of walls designed according to function. Therefore, the walls in the structure are used mainly as dividers and separators without a load-bearing function. The same principle is applied to the Tekel Building and subsequently the KUDAKA Building. However, it should be noted that the flexible plan approach found in Villa Savoye is not present in the Tekel and KUDAKA Buildings.

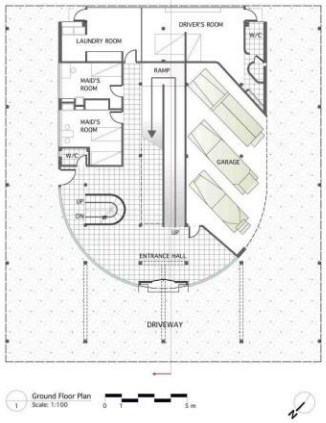
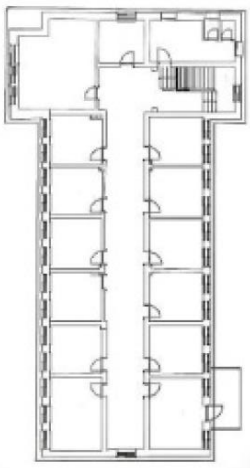
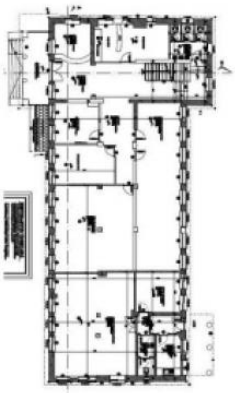
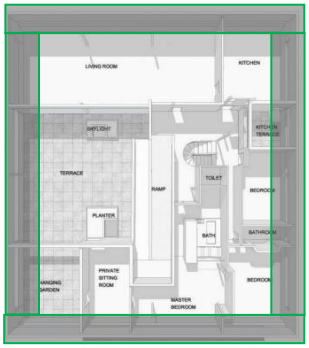
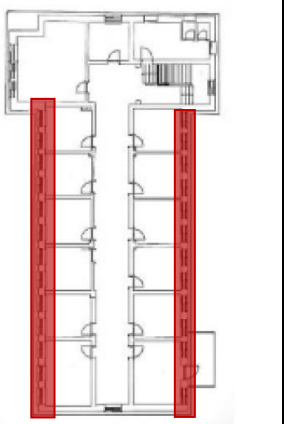
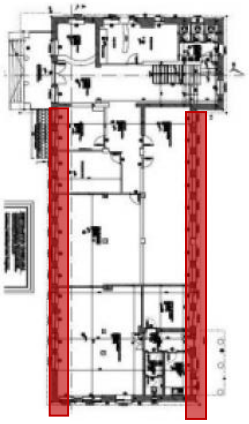
Le Corbusier's third principle of free facade, which allows for maximum daylight and natural ventilation, was successfully applied in Villa Savoye. However, this principle is not implemented in the Tekel Building and subsequently the KUDAKA Building, as the facade's window openings are interrupted by columns. The changes in the facade material over the years have also affected the facade character and building characteristics.

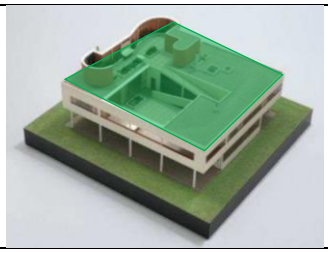
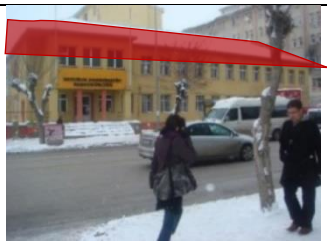
The fourth principle, the use of horizontal strip windows, can be clearly observed in Villa Savoye, thanks to the free facade principle. However, in the Tekel Building and subsequent KUDAKA Building, the facade's continuous window pattern is disrupted by columns, rendering the horizontal strip window principle unattainable.

The last principle defined by Le Corbusier is the use of a roof garden, successfully applied in Villa Savoye. In contrast, the Tekel Building, now used as the KUDAKA Building, does not have a roof garden. Instead, the building has a gabled roof structure, which can be attributed to Erzurum's climate and its associated challenges.

Moreover, while Villa Savoye was designed for residential use, the Tekel Building was initially planned as an administrative structure and is still used as such today. The Tekel Building was strategically located near the Cumhuriyet Meydanı (Republic Square), a symbolic public space representing modern Erzurum.

Table 3: *Mutual Analysis of Villa Savoye and Tekel (KUDAKA) Buildings in the Context of New Architectural Principles*

New Architecture Pirnciples	Villa Savoye	Tekel Binası	KUDAKA Binası
Elevating the building on pilotis			
Open floor plan or open floor layout			
Free facade			
Horizontal ribbon windows			

Roof garden			

5.Discussion and conclusion

After the introduction of the new architecture concept and principles, a multitude of structures were built worldwide, as well as in our country, that embodied one or more of these principles. When we examine the early Republican buildings, it becomes evident that the majority of them are public structures. Given that these buildings are public in nature, it can be assumed that the full application of the new architectural principles during that era was challenging, especially when considering Le Corbusier's assertion that the structures designed within the framework of the new architecture concept were predominantly residential.

Another challenge encountered in the implementation of the new architectural criteria was climatic conditions. Particularly in the case of the fifth criterion, the concept of a roof garden, it can be argued that open-space utilization is as crucial as structural loads.

In conclusion, through the study of Erzurum's Tekel building and its transformation into the KUDAKA building, it can be stated that some of the criteria of the new architecture principles were partially applied in a public building in the early Republican period, approximately ten years after the construction of the iconic Villa Savoye. Within the scope of the "raising the building on pilotis" criterion, specific modifications were made to the building's entrance area. Under the "free plan or open floor plan" criterion, the building's walls were detached from the load-bearing system and used solely as dividers.

Furthermore, the criteria of "free facade," "horizontal strip windows," and "roof garden" were not applied due to design, structural, or climatic reasons. The failure to implement these criteria can be attributed to designer decisions made during the interpretation of the new architectural principles in the early Republican period. Structural reasons include considerations related to factors such as snow and wind, while climatic reasons run parallel.

Although the time elapsed since the introduction of these principles has seen their adoption across many regions in Turkey, Erzurum and various other places still showcase the use of one or more of these principles, and sometimes almost all of them, in most buildings. This observation implies that the influence of Le Corbusier's architectural philosophy and designs extends beyond his era, spreading rapidly across the world and continuing into the 21st century. It serves as a testament to the timelessness of the philosophy he articulated and the buildings he designed.

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