ARCHITECTURE CIVIL ENGINEERING ENVIRONMENT
The Silesian University of Technology No. 3/2022

doi: 10.2478/ACEE-2022-0028

DOCUMENTING AND CONSERVING MODERN ARCHITECTURAL HERITAGE: ÇAĞLAYAN APARTMENT BUILDING İZMİR-KARŞIYAKA

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Received: 26.01.2022; Revised: 25.05.2022; Accepted: 2.09.2022

Abstract

The conservation and transferring of cultural heritage to future generations have been facilitated by the increasing development of digital modeling and architectural visualization software. With the help of a virtual environment, heritage data can be archived more permanently and accessed by numerous users. This paper aims to put forward how heritage from a certain period can be documented, analyzed, and transferred using different digital techniques. Additionally, it claims that as a method, digital documentation is a practice that also contributes to different areas including culture, education, and tourism. Within the scope of this paper, Çağlayan Apartment Building from Karşıyaka, İzmir was selected as a case study for applying the digital documentation method. The methodology of the research comprises the following steps: literature review, on-site observation, identification of the period, area and specific case(s), photo shooting, having measured drawings, archive scanning, oral history studies, 2D architectural drawings in CAD medium, 3D modeling/rendering, illustration and poster preparation, website, e-catalog, and social media designs. In conclusion, it has been revealed that digital documentation of modern architectural heritage including interior elements has a positive impact on three interrelated areas: cultural sustainability, educational activities, and touristic popularity.

Keywords: **Apartment buildings; Digital documentation; İzmir-Karşıyaka; Modern architectural heritage.**

1. INTRODUCTION

The conservation and transferring of cultural heritage to future generations have been facilitated by the increasing development of digital modeling and architectural visualization software. With the help of a virtual environment, heritage data can be archived more permanently and accessed by numerous users.

Modernism emerged as a response to the changes in production, circulation, and consumption in the West whereas modern architecture is a representation without the roots of modernism, real tangible and social values. In Turkey, modern architecture is not actually a change coming from inside, but a movement that is imported. In other words, modern architecture is an

architectural discourse of modernism. When it is analyzed in an international context, modernism leaves three main traces in architecture as follows: the construction of public buildings, the emergence of the circulation network, and the construction of residential buildings which change the ontology of dwelling and sheltering very dramatically [1].

When the timeline of modern architecture and the role of residential buildings are analyzed, it can be divided into some main time periods with important breaking points to see what is happening in both national and international contexts [2]. For understanding the residential texture in İzmir modern architectural heritage, the national context should be analyzed in detail. In the 1920s, with the establishment of the Turkish Republic, there was also a rapid increase in multi-story residential buildings. Also, the traces of the First National Style started to be seen. Between the 1930s and 1940s, urban apartment buildings emerged as a standard residential type. Also, apartments 3-4 stories high were seen with cubic architectural style. The modernization program of the new state for housing was also initiated with mass housing projects, lodgment houses, cooperatives, public housing, and rental houses which were originally adapted from the West. With the enactment of the Civil Servants Law in 1944, a new public housing construction model for employees was constructed. The first example of this model is Saraçoğlu Neighborhood in Ankara, designed by Paul Bonatz. The 1945s are the adaptation process of modernism from both Europe and the US with universal modernization and industrialization. Starting from the 1950s and 1960s, there was a rapid increase in the population. As a response to that increase, mass housing blocks started to be constructed. Also, some small-scale apartment buildings can be seen which are the symbols of the Western mode of living. In facades, the traces of the Modernist aesthetic can also be easily seen with facade elaboration and new facade treatments. With the introduction of the Flat Ownership Act in 1965, each flat started to be defined as an independent unit. At the same time period, there was also a rapid transition from individual apartments to multi-apartment blocks and an increase in apartment heights. Starting from the 1960s, the effects of modernism also started to be seen in the housing interiors.

Within the scope of this paper, which is a part of a scientific research project, the Çağlayan Apartment Building located in Karşıyaka, İzmir in Turkey was selected as a case study to represent the importance of digital methods being used for documentation and conservation. For better understanding in detail, a comprehensive detailed literature review is conducted by means of digital technologies and methods used for documentation and conservation of architectural heritage. Following, the methodology of the paper is introduced with the focus on İzmir and Karşıyaka as selected regions for the case study and a specific time that contains the modern architectural heritage. Textual and visual information about Çağlayan Apartment Building is also given. In conclusion, the way digital methods are being used in the documentation and the conservation of modern architectural heritage are mentioned as cultural sustainability, educational benefits, and touristic popularity.

2. DIGITAL DOCUMENTATION AND CONSERVATION OF MODERN ARCHITECTURAL HERITAGE

Traditional documentation methods began to be superseded by digitized and electronic drafting processes with the advent of computer-aided design in the 1960s [3]. Unlike traditional approaches, the integration of digital techniques makes it easier to document complicated buildings [4]. While still in its infancy, heritage researchers have embraced digital documentation since it is more freely available and less expensive. It's also speedier and produces more precise results, such as 3D models [3].

Nowadays, digital cultural heritage, or in other words, the digital documentation and preservation of cultural heritage research largely depends on the careful consideration of new technologies and measures developed in other fields [5]. Digital technologies play an important role in understanding them as multi-layered levels of cultural values and aspects that go farther than the concept of "historical center" or "community" [6]. They need to be combined by architects and conservators, and only careful adaptation of methods and experiments can enable the use of the latest techniques [7].

The development of software in the field of architecture and conservation area has revolutionized the way cultural heritage is experienced beyond traditional two-dimensional drawings by enabling the integration of image-based documentation with versatile user interfaces. Thanks to recent technological advances, digital documentation and conservation now have a variety of software and possibilities for recording and preserving architectural heritage. The digital heritage documentation is aiming to gain max-

imum data through recording. 3D modeling & data capture, CAD, Building Information Modelling (BIM), drones, laser scanner, structure from motion, digital stereoscopy, digital photogrammetry, artificial intelligence, GPS, Geographic Information Systems (GIS), augmented reality and many other techniques and software support the process and accelerate the efforts to record and interpret historical sites. These applications allow for city-level documentation that captures urban architectural patterns, not just a single historical building [8].

The broader discourse that addresses the digital technology impact on the conservation and documentation of tangible heritage is often the application of digital technologies in construction. This ranges from the pervasive impact of digital design to the use of digital tools and software, including digital platforms for sharing and collaboration of data. Among the benefits that digital technologies offer to the conservation of tangible heritage, saving time and money in surveying and the ability to store and share large amounts of data are often highlighted [9].

Currently, it has also evolved into a platform for cultural identity and intercultural communication, as well as a social and economic resource for local communities. The integration of digital technologies with cultural heritage conservation can lead to the regulation of cultural tourism destinations and promote research, management, and public participation [10].

Digital documentation and conservation concepts have contained enormous amounts of possibilities and they will increasingly form the basis for understanding, assessing, and managing cultural heritage buildings and areas. Digital documentation software, techniques, and tools provide the ability to document historic urban landscapes both on a small and large scale and to depict the relationship between architectural structures and streetscapes [8]. Institutions, communities, and individuals are progressively using digital technologies for heritage documentation to convey the important ones to future generations [9].

The continuity and permanence of the architectural heritage, which plays an active role in transferring the social, cultural, and economic values of the society, is increasingly getting harder. While heritage is a phenomenon that provides information transfer between periods, it plays an active role in the development of societies. Reasons such as lack of awareness of documentation, neglect, renovation works, urban policies, and natural disasters lead to the inevitable destruction of the architectural heritage. Therefore, there is a growing need for appropriate documentation and conservation of architectural heritage using digital technologies. The integration of digital technologies into architecture ensures the permanent preservation of architectural values and their transfer to the future. With the help of this technology, the architectural heritage will not only be protected in all its details, but it will also be easily accessible to large communities such as city dwellers and researchers. The information collected with the help of digital technologies can be used in the sustainability of the heritage, as well as educational activities, and tourist attractions.

Because of these benefits, there is a growing need for digital documentation. To capture building details and reach a wider audience, digital documentation (e-documentation) can be roughly described as the recording of targeted objects in digital media using computer-based and audio-visual methods [11]. Few buildings from the Modern Movement remain, particularly residential specimens, which are rapidly removed and replaced. As a result, their documentation is essential. Their significance stems from the fact that they provide us with information about prior eras' physical and social history, as well as daily practices and domestic life culture.

3. MODERN HOUSING CULTURE IN TURKEY AND İZMİR AFTER THE REPUBLICAN PERIOD

With the beginning of Turkey's modernization and Westernization process after the Turkish Republic was established in 1923, global modernization trends started in social, political, cultural, and economic fields including architecture, domestic spaces, and modes of living.

During Turkey's modernization process, several breakpoints mainly the 1929 economic depression, World War II (1939–1945), the Democrat Party's 1950 election victory following the introduction of a multiparty system in 1946, post-war Marshall Aid, and Flat Property Legislation in 1965 had significant effects on the architectural realm, especially in the residential area.

As apartment buildings convey many different meanings, such as political modernization, economic objects, social ideas, cultural reflections, domestic space, everyday life, and spatial practices, the analysis and documentation of the modernist approach can be conducted through these building types [12].

In the 1930s, Turkey's housing needs in its major cities

Figure 1.
İzmir apartment buildings between the years 1950–1980. Produced by authors (Source: authors' photo archive)

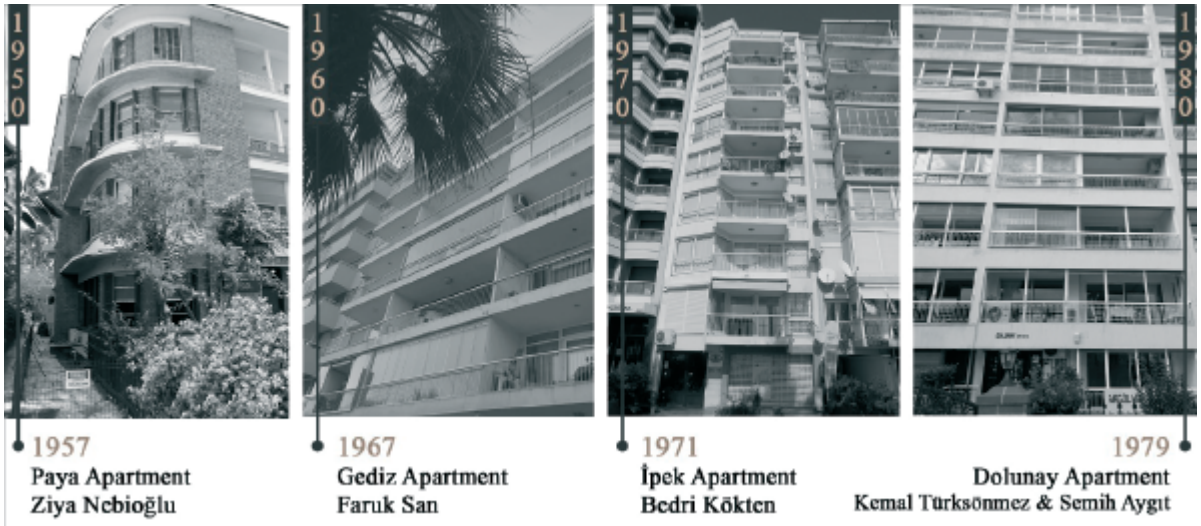

Figure 2.
Karşıyaka apartment buildings between the years 1950–1980. Produced by authors (Source: authors' photo archive)

led to accelerated construction of apartment buildings starting with three or four stories high, having simple plans appropriate for contemporary living, constructed with limited materials, and designed in rationality over form and style. Until the end of the 1940s, these apartment buildings were spread over the major cities as so-called "rent houses" which were assumed to be representatives of the modern lifestyle and social status.

The dissemination of apartment buildings started in Turkey's major cities – İstanbul, Ankara, İzmir after the 1950s with the formal characteristics of Modern architecture. The 1965 Flat Property Law, granted the legal right for individual ownership of units within an apartment block, led to a great increase in the number of apartment buildings with standardized rectilinear prismatic blocks constructed with reinforced concrete load-bearing systems and plain façades became the symbol of modernism and associated with modern living.

After the 1950s, modernist components of the International Style, such as large facade openings, asymmetric facade designs, translucent balconies, and flat roofs used by Turkish architects [13]. These were successfully implemented in facade designs, which contributed to Turkey's urban identity.

İzmir, the third-largest population after Istanbul and Ankara, had wealthy merchants and a well-educated

upper class during 1950–1980. Apartment buildings, designed and constructed by the leading architects of the city for high-income groups in popular quarters like Alsancak, Güzelyalı, Hatay, and Karşıyaka, reflected modernist attitudes both in architectural and interior scales. With their rectilinear forms, light and plane surfaces, and flexible interior spaces suitable for contemporary living standards, they combined international architectural developments with local dynamics (Fig. 1).

Karşıyaka, the case study area, became a suburb in the 19th century, having one or two-story detached housing units until the early 1950s and four and five-story family apartments until the 1960s, affected by The Flat Property Law (1965) leading to a rapid increase in housing demands. Because of the transformation of its housing stock which has continued until today, the sustainability of Karşıyaka's urban identity and housing culture is threatened. So, this suburb was chosen as the case study to document the architectural heritage (Fig. 2).

4. METHODS AND CASE STUDY

This study is a part of a scientific research project supported by Yaşar University, İzmir, Turkey: "Spatial Analysis of Mid-Century Multi-Storey Houses and 3D Transfer to Virtual Environment; Karşıyaka, İzmir". These nine apartment buildings, constructed between 1950–1980, are now in the process of demolition for the purpose of renewal which stems from both the Urban Transformation Law, which allows older buildings to be replaced with new ones, and the earthquake in 2020 that accelerates this transformation process. They are among the most notable symbols of Karşıyaka's modern residential life from the 1950s through the 1980s with their modernist lifestyle and home interiors. In terms of their architectural/interior elements reflecting modernist codes, they all have significant urban/architectural/interior context values.

The research project is aimed to allow researchers and city residents easy access to all data through a digital archive, catalog, brochure, and exhibition outputs with the help of the 2D and 3D visualization methods. Thus, identifying İzmir's mid-century multi-story apartment buildings from various perspectives, and preserving their interiors and architectural elements as reflecting codes of Modernism are achieved and these structures became a permanent part of the city's memory. Moreover, documentation of Modern Movement residential examples gave us clues about the physical and social history and daily practices of previous eras.

The modernist domestic interior architecture of İzmir was analyzed through the social, cultural, and architectural characteristics of the apartment interiors by investigating the characteristics of domestic space, material culture, spatial relationships, living culture, and the habits of the inhabitants by focusing on the interiors and digitally documenting all data, including archive drawings, old and new photographs, oral interviews, and personal archives. To obtain a holistic understanding of the representation of modernity and domestic space relations, these nine apartment buildings were studied not only for their stylistic architectural features but also for their interior spaces and connection to everyday life within a historical context. Moreover, we also revealed the local dynamics by considering the role of the architects and designers in the social and cultural transformation of Turkish society within the framework of modernization.

Since the scientific project aims to document and conserve the modern architectural heritage by focusing on residential interiors with the support of digital technologies; in this paper, an apartment building that conveys the period characteristics has been analyzed using the same method. To be able to give the main principles of the documentation, one of the most significant apartment buildings namely Çağlayan (1972) was analyzed as the case study for which the method was applied, and a database was prepared for the digital documentation. The interiors and exteriors of this apartment building, which had not before been decoded, were investigated and analyzed using 3D visualization data via computer-aided drawings/modeling methods in this study.

The method applied in the study consists of two main phases: data collection process and documentation and dissemination of results (Fig. 3). The first phase consists of the stages in which we obtain written and visual data about the building such as literature and archive scans, field trips, photograph and video shoots (Figure 6), measurement, and oral history interviews. The second phase consists of the stages in which we can document and share the results such as 2D drawings (Figs. 5 and 7), 3D modeling/rendering (Fig. 8), poster and graphic drawings (Figs. 9 and 10), website, e-catalog, and social media designs (Figs. 11, 12, 13 and 14).

Figure 3.
Method phases diagram, I. Data collection process and II. Documentation and dissemination of results. Produced by authors (Source: authors' photo archive)

All the collected textual and visual data in the first phase was then digitized for permanent documentation and conservation. For all the obtained data to be easily accessible, the textual and visual data were brought together on the website, e-catalog, and social media platforms.

Considering the current situation of the architectural heritage, there are various documentation methods that differ according to the scale of analysis. In this study, 3D architectural modeling and visualization/rendering methods were used, apart from the photographing technique, which is one of the main

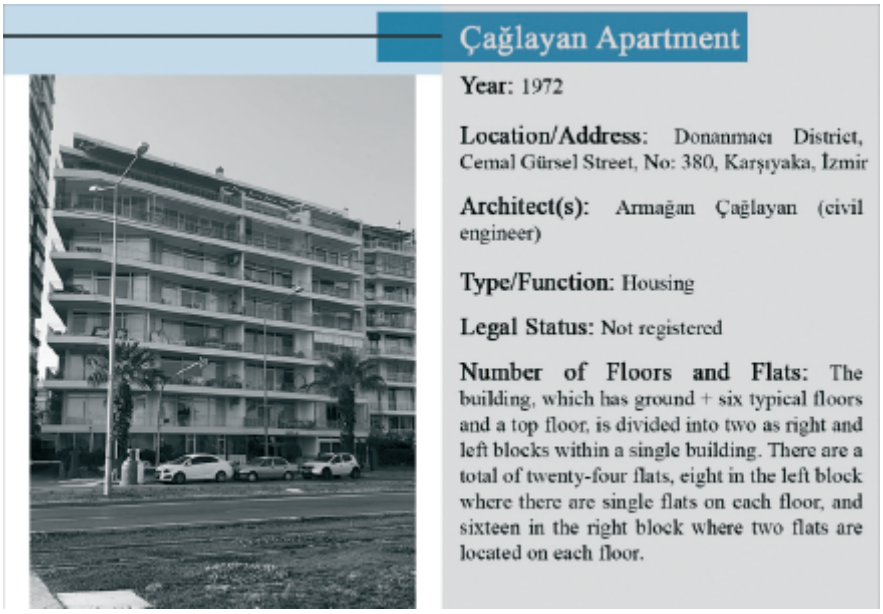

Figure 4.
Identification chart of Çağlayan Apartment Building. Produced by authors (Source: authors' photo archive)

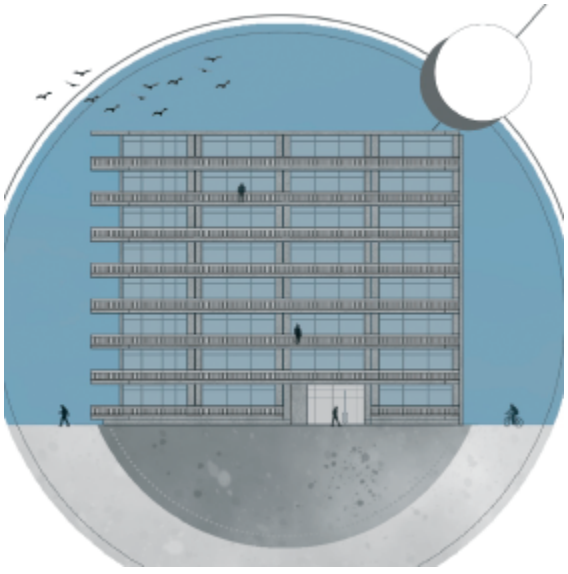

Figure 5.
Facade characteristics of Çağlayan Apartment Building. Drawn and produced by authors

image-based techniques. The 3D drawings were extracted from the original collected and integrated data through on-site observation, photograph and video shoots from the exterior and interior of the building, and measurement using laser meters and scanners. Rhinoceros, a CAD/CAM software designed for 3D modeling and prototyping, was chosen for a detailed study. Detailed NURBS-based high-precision models of the exterior, interior, and furniture of Çağlayan Apartment Building were made with Rhinoceros. Rhinoceros 3D Rendered Viewport and Twinmotion are used to visualize architectural models. All 3D models have been produced as a "white model" in order to make the three-dimensional building, interior, and furniture more easily perceived by the viewer. After the transfer of the data to the digital environment, it is aimed to permanence and disseminate the physical documents through the website, e-catalog, and social media.

In summary, in this study, in which different digital technologies are used, the identification, documentation, analysis and use of 3D visualization technologies of apartment buildings in Karşıyaka Region, created permanence and fill the gaps in urban memory.

4.1. Çağlayan Apartment Building

This study focused on Çağlayan Apartment Building in Karşıyaka, which is among the leading examples of modernist lifestyle and domestic interiors designed by Armağan Çağlayan, (Civil Engineer MSc). This apartment building is among the most important representatives of modern residential life in Karşıyaka from the 1950–1980s. Being an architect/engineer-designed project it has a high urban context value in terms of its architectural features, modernist design concept and reflects the historical continuity of modernist architectural style. Moreover, rich data related to the interiors of two different flats were reached in addition to the interviews with the flat owners.

Figure 6.
Çağlayan Apartment Building, entrance lobby, post boxes, staircase, elevator and flat entrance doors. Produced by authors (Source: authors' photo archive)

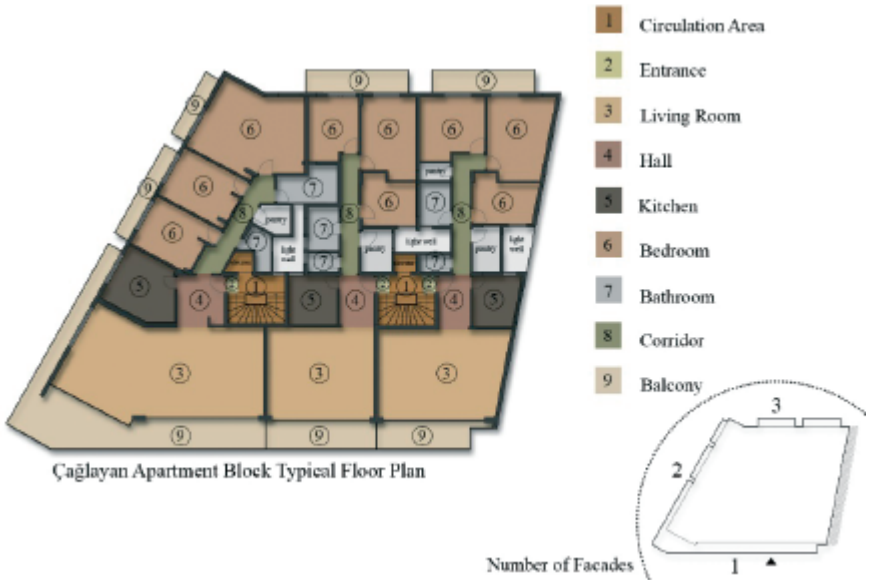

Figure 7.
Çağlayan Apartment Building floor plan and functions. Drawn and produced by authors

Çağlayan Apartment Building (Fig. 4) is located on Cemal Gürsel Street in the Donanmacı District. Before the Çağlayan Apartment Building was built, there was an İplikçizade Mansion on the same parcel lot. Mustafa Kemal Atatürk stayed at this mansion during his visit to the city following İzmir's liberation in 1922, this adds to the significance of this location in the city's memory. The construction of the building was started in 1969 and completed in 1972 by the civil engineer Armağan Çağlayan. In the oral history studies, the architect Sedat Bozinal who has currently resided in the apartment also mentions that he has contributed to the projects of the apartment building.

The building's transparent and simple facade (Fig. 5), the wide balconies and balcony railings, the large entrance hall, the staircases and iron railings, and floor and wall materials were mostly preserved (Fig. 6).

The building has a ground floor, six typical floors, and a top floor. In a single building, there are two different blocks, right and left. On the ground floor, there is a boiler room and a doorman's flat. While the left block has eight flats (one on each floor), the right block has sixteen flats (two flats on each floor). The structure was designed as a reinforced concrete carcass system.

When the building's ground floor plan is examined, staircases and elevators are symmetrically positioned after the main entrance. From here, it can be accessed to two different blocks. Although the interior spaces of the flats differ in square meters, the same plan scheme is observed in the left block, which has one flat on each floor, and the right block, which has two flats on each floor. The difference in square meters between the interior spaces of the flats is due to the flats' location (corner, middle, and adjacent) and the different floor plan divisions (single or double flats on each floor).

In both blocks, the planning scheme of the flats has been solved with a corridor (Fig. 7). The flats in the right block, which have two flats on each floor, have a living room in the front, two rooms in the back, and a kitchen, room, pantry, bathroom, and toilet aligned along the corridor and ventilated from the lightwell. The flats' living rooms have balconies with a regular rectangular shape. In addition, another balcony connects the two rooms at the rear of the building.

In the corner block, which has a single flat on each floor, there is a living room at the front as well as a kitchen and three rooms aligned along the left side of the building. There are a bathroom, a pantry, and a toilet located around the lightwell. The balconies in the living rooms of the flats on the left block are wider and irregular in shape than those in the other block. Furthermore, the flats in this block lack a balcony at the back, while the balconies that open from the bedrooms are located on the left side of the building.

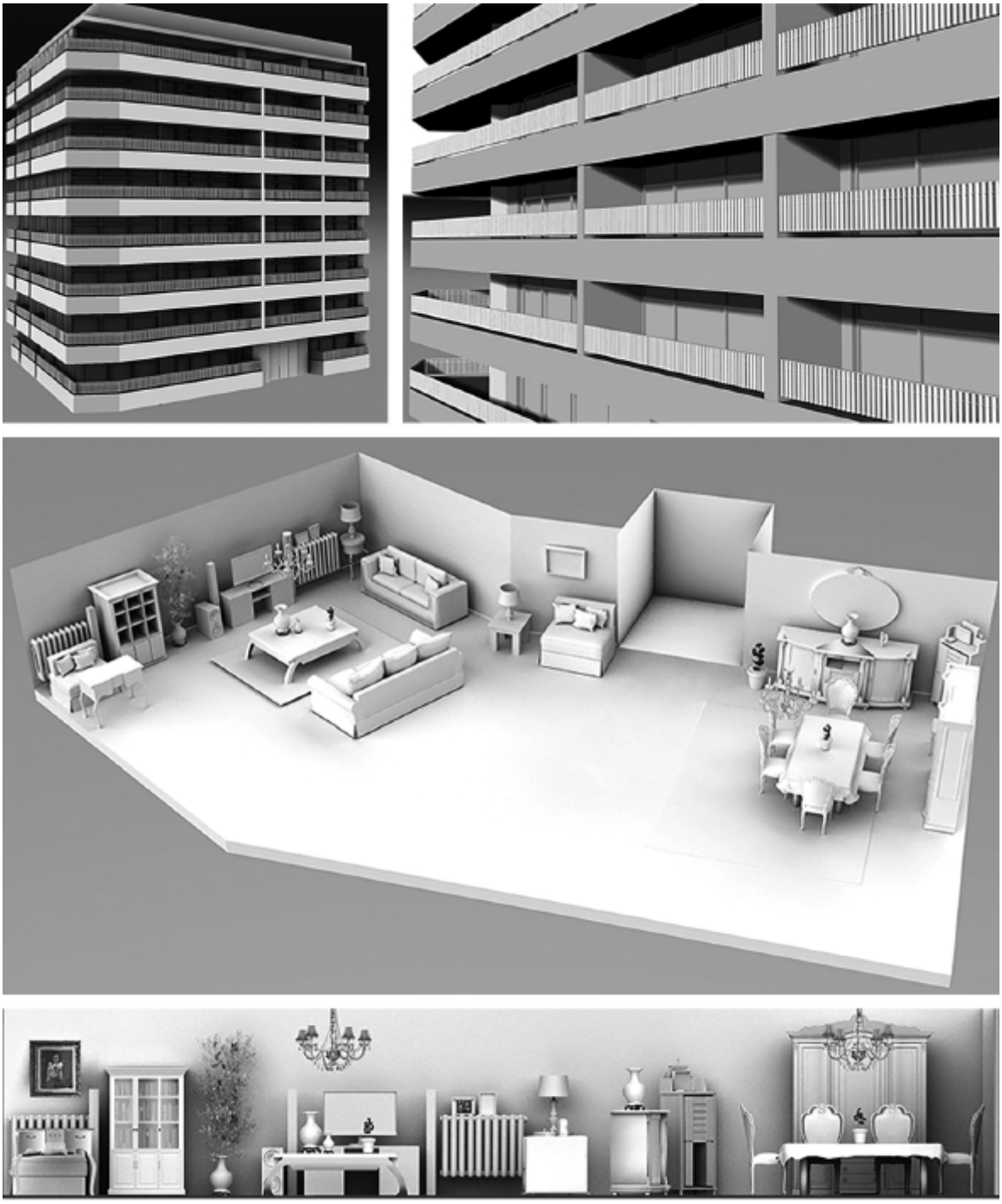

Figure 8.
Çağlayan Apartment Building 3D drawings of exterior and interior; longitudinal interior elevations of the Flat 6. Drawn and produced by authors

Figure 9.
Çağlayan Apartment Building poster design for docomomo_tr event. Drawn and produced by Yaşar University students (Source: authors' photo archive)

Figure 10.
Çağlayan Apartment Building poster design for graduate course submission. Drawn and produced by Yaşar University students (Source: authors' photo archive)

Figure 11.
Screenshots of the Çağlayan Apartment Building pages on the Scientific Research Project website, general view and apartment common areas, www.izmirkentbellegi.yasar.edu.tr. Designed by the project team

Figure 12.
Screenshots of the Çağlayan Apartment Building page on the Scientific Research Project website, interiors of the flats, documents, and 2D/3D drawings, www.izmirkentbellegi.yasar.edu.tr. Designed by the project team

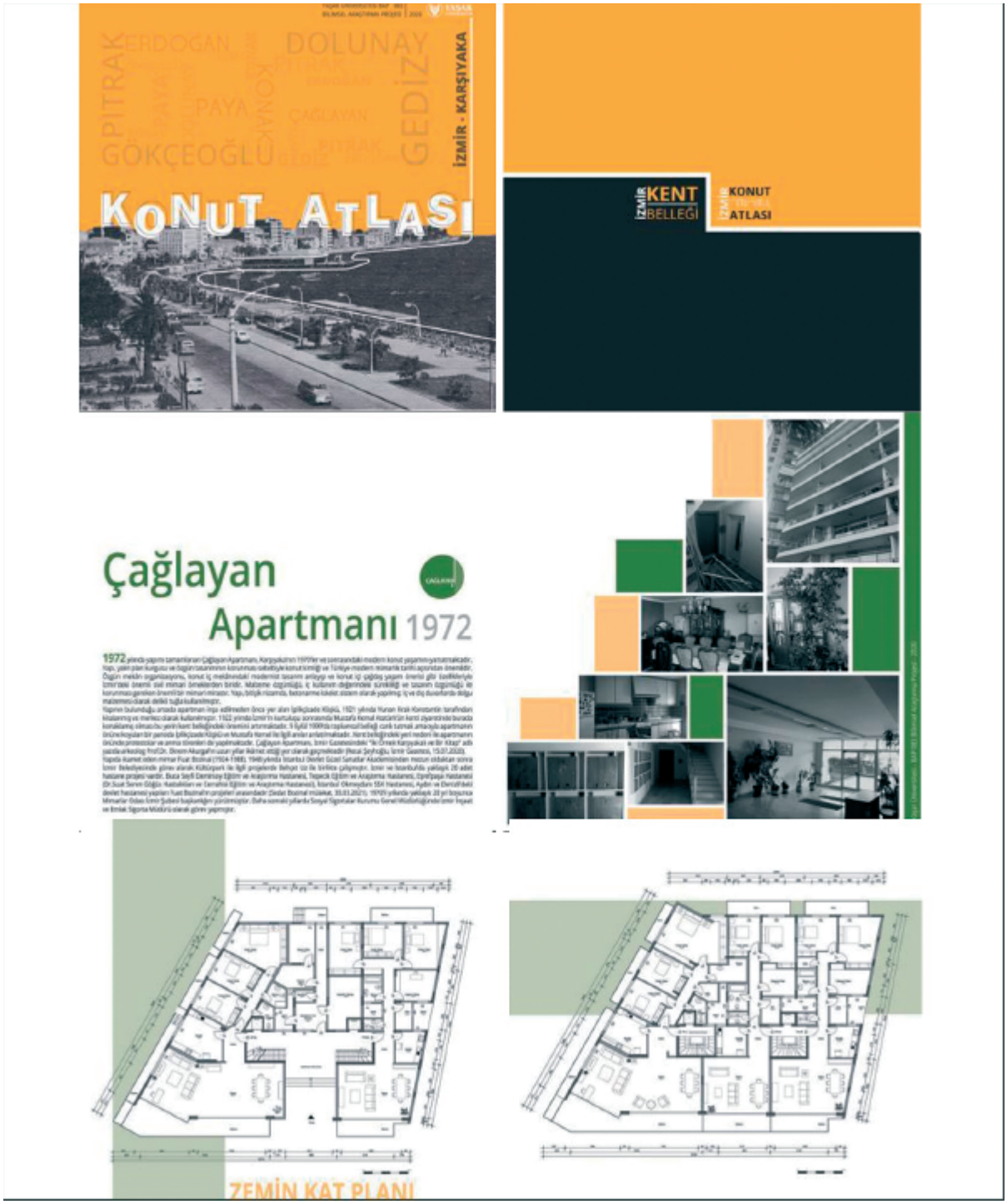

Figure 13.
E-catalog pages of the Çağlayan Apartment Building on the Scientific Research Project, www.izmirkentbellegi.yasar.edu.tr. Designed by the project team

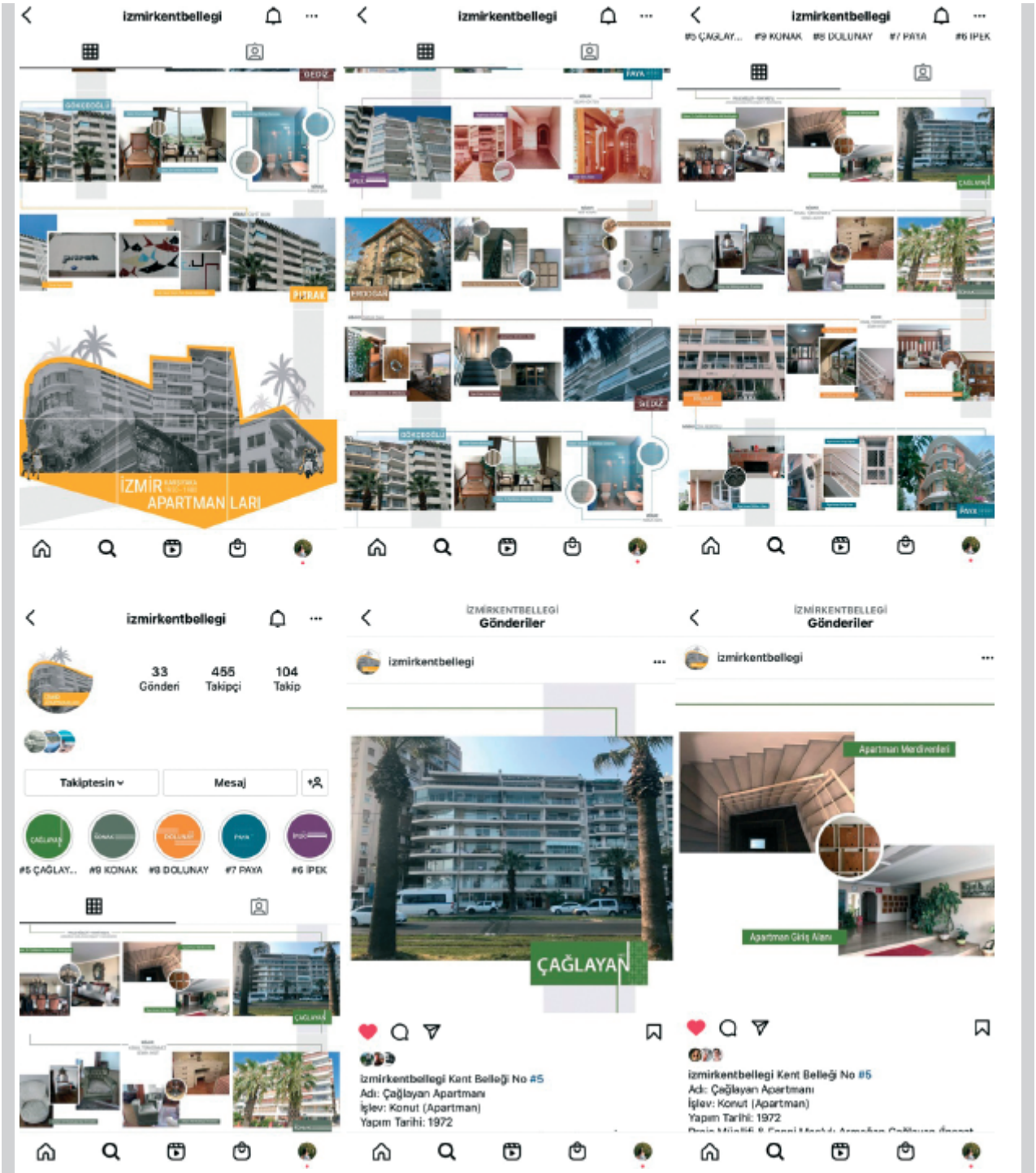

Figure 14.
Screenshots from Scientific Research Project social media account, https://linktr.ee/IzmirKentBellegi. Designed by the project team

4.2. Discussion

The original architectural concept, a modernist plan scheme, simple facade layout, wide openings and balconies, and linear balcony railings of Çağlayan Apartment Buildings are references for İzmir housing architecture from the 1950s to 1980s. The horizontal lines on the facade, which reflect the modern approach of the 1970s, are reinforced with balcony railings. Furthermore, the building's facade, which is entirely glass with fixed windows and balcony doors, shows that larger rooms with large openings can be built using advanced construction techniques. Elevators were used in the building as the symbol of technological equipment and innovations in construction technology. The building reflects 1950–1980 modern house life with its plan organization and modernist interior space design approach. In all flats, a hall has been created in the area where the flat entrance door is opened to allow for interior circulation. Furthermore, this hall divided the functions into two categories: daily and private. Thus, the front part of the building, where the entrance door opens directly, is divided into the living room and kitchen, while the areas at the back are divided into private functions. This situation, which arises from the period's social life, also represents the period's home culture. Çağlayan Apartment Building has large and canopied balconies. This situation represents contemporary residential life, while also reflecting extroverted family life. The glass apartment entrance door, travertine floor covering on the entrance hall and marble floor covering on the stairs, beige oil painted iron stair railings in linear form, and linear formed beige oil painted iron balcony railings are among the building's distinctive features that have reached to present day while retaining their originality.

The fact that Mustafa Kemal Atatürk stayed at İplikçizade Mansion (the former building in the same parcel) during his visit to the city emphasizes the significance of this location in the historical process of urban memory. All the features of the building, which are reflected in its facade, plan organization, and interior spaces, enable us to understand the social, historical, technological, economic, and cultural characteristics of the period in which it was built. These features of the building have made it permanent even today.

5. CONCLUSION

The incorporation of digital technologies into architecture allows for the permanent preservation of the architectural values of a city as well as the memories of its citizens. As the most frequent building type, it codifies Modern Architecture's aesthetics. The interiors of Turkey's apartment buildings, which have unique qualities imbued with domestic space, spatial practices, daily life, and material culture, are increasingly visible and accessible with the help of these digital tools.

This study examines multi-story houses as an architectural cultural object, researches, analyzes, and documents, where the legacy of Modern Architecture is mostly ignored and therefore rapidly disappears in Turkey. The initiative aims to permanently display memories and data by preserving and documenting chosen apartment buildings erected between 1950 and 1980 in Karşıyaka, İzmir. Thus, a detailed virtual identity document can be created for each apartment building. Residents and scholars in the city can immediately access the project's outcomes advantage of the digital recording and documentation. As a result, recording and documenting multi-story houses built between 1950 and 1980 in Karşıyaka, which have a great potential for the city of İzmir with their architectural and interior features, with the help of digital technologies, brings a comprehensive approach to these buildings. This study also presents a new approach in terms of transferring the architectural/interior heritage of the modern period to the future in a principled way, with the method of creating a digital database applied to a case study (Çağlayan Apartment Building) and permanently visualizing/documenting it.

With the help of the digital recording and documentation, the permanence of the apartment buildings with their tangible and intangible values has been ensured and the city residents or researchers have been given the opportunity to easily access the data. Moreover, with this documentation that occurred with the help of digital technologies, deeper and more detailed information such as modern lifestyles, architectural approaches, space organization, daily practices, and furniture design can be revealed and become permanent.

This digital documentation, which also contributes to the city's overall character, allows us to grasp the technical and architectural methods of the time period and is expected to set the standard for documenting architectural history. Further information, such as

the importance of home space in constructing Turkey's modern consciousness, modernized modes of life, everyday routines, spatial organization, material culture, and furnishings, can be read in addition to these facts. This study maintained the virtual permanence of multi-story apartment buildings with their tangible and intangible values by examining them through recording, analysis, and documentation. Moreover, it will also raise awareness about the importance of transporting modern-era material culture into the future in a responsible manner.

In conclusion, documentation and conservation of modern architectural heritage with the help of digital technologies have three related benefits and outputs. The first benefit is providing the cultural sustainability of architectural heritage which is obtained through preserving the urban memory in the digital medium. With the help of oral history studies conducted during the data collection process related to daily practices of that period, the social memory can also be transferred to other generations which are all presented data on the website, e-catalog, posters, and social media. Also, the analysis of social life to understand the daily habits and activities in addition to what can be seen physically can help social sustainability. The information collected about the architects, the designers, and the engineers of modern architectural heritage through accessing their personal archives is important in terms of social values. In addition to specific information collected related to people, their archives also ensure the continuity of conventional drawing techniques. The urban regeneration and earthquakes that take place currently make the documentation of modern heritage in terms of social life. As another benefit, educational contributions can be provided to students for having a better analysis which can be entitled to learning-by-doing. While the students are searching for information related to buildings, architects, or the period, they have a chance to develop their research skills. While conducting a literature review and making an analysis, students are also able to collect information about urban memory. Touristic popularity, which is the third contribution of digital documentation, helps to highlight the importance of modern architectural heritage and makes them attraction points on an urban scale which are all the representatives of old and historical identity.

The research will take a new approach to scientific investigations of modern housing heritage by proposing concepts such as virtual housing identification documents and a virtual city housing architectural museum. People will begin to utilize digital media more for working and socializing as a result of technical revolutions and changed daily behaviors as a result of the present Covid-19 pandemic. For the following research, this project will incorporate additional research and work on virtual reality approaches, exhibitions, and 3D printer outputs. This work will be transported to a virtual world using 3D complementary visualization techniques to provide a more immersive experience for visitors.

ACKNOWLEDGEMENTS

We would like to thank Yaşar University for funding the scientific research project (BAP083 – Spatial Analysis of Mid-Century Multi-Storey Dwellings and 3D Transferring to Virtual Platform: Karşıyaka, İzmir/TURKEY), of which this study is a part. We also would like to thank Prof. Dr. Havva Meltem Gürel and Prof. Dr. Zeynep Tuna Ultav for encouraging us in the realization of the project, Beste Gönültaş Tekin, Emrecan Esenalp, Fulya Ballı, Assist. Prof. Dr. İpek Ek, Renin On for their initial consultancy for the project, and Elif Dede, Işınsu Dikmen, and Bengi Şentürk for their help in data collection and interview coding.

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