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Chapter 2

Documenting Modern Interiors using Digital Technologies: Mid-Century Apartment Buildings in İzmir

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Introduction

Technology has been widely used in recent years in all design fields, including architecture. 2D and 3D representational techniques enable better visual communication by displaying the materials, colours, interior components, and so forth. Similarly, the use of e-documentation for modern heritage enables easy access for a large number of users, provides a virtual experience without having to visit physically, and preserves the values of the heritage permanently by allowing updating. This chapter examines how a database was prepared for apartment buildings of significant value in İzmir, Turkey, dating from 1950 to 1980. The digital documentation was produced from integrated original data. This chapter explains in detail how the digital documentation of the significant architectural and interior features of the selected residences was integrated in terms of the e-heritage concept. The study contributes to documenting and conserving modern architectural heritage by focusing on residential interiors with the support of digital technologies.

Societies are structured through cultural and historical heritage, which is also a keystone of national identity (Albourae, Armenakis & Kyan, 2017). Heritage can be either tangible or intangible. Tangible cultural heritage includes buildings, monuments, landscapes, and interiors with great architectural, historical, and artistic value (Baptista, 2013). Their significant value makes it important to document and protect them as this plays a vital role in preserving memory (Amorim, 2011).

Traditionally, analogue measured drawings have been the most common type of architectural heritage documentation. Their preparation uses tools like tape measures, scales, gridded paper, pencils, and large clipboards. Field notes, sketches, and measured drawings are used to compose a more detailed final version to document architectural heritage (Fortenberry, 2019).

With the emergence of computer-aided design in the 1960s, traditional documentation methods started to be replaced by digitized and electronic drafting processes (Fortenberry, 2019). In contrast to conventional methods, the integration of digital techniques enables complex buildings to be documented more easily (Baptista, 2013). While still new, digital documentation has been rapidly adopted by heritage researches because it is more easily accessible and cheaper. It is also faster and gives more accurate outputs like 3D models (Fortenberry, 2019). Given these advantages, there is increasing demand and need for digital documentation. Digital documentation (e-documentation) can be broadly defined as the documentation of targeted objects in digital media with the help of computer-based and audio-visual tools to capture building details reach a wider audience (Albourae, Armenakis & Kyan, 2017). Few buildings remain from the Modern Movement, especially residential examples, which are demolished and replaced very fast. Therefore, their documentation is critical. Their importance comes from giving us clues about the physical and social history, and daily practices of previous eras.

This study is a part of an ongoing scientific research project supported by Yasar University, Izmir, Turkey, under the title of "Spatial Analysis of Mid-Century Multi-Storey Houses and 3D Transfer to Virtual Environment; Karşıyaka, İzmir". It covers apartment buildings in Karşıyaka-İzmir constructed between 1950 and 1980, which are now in danger of demolition because of the Urban Transformation Law, which allows older buildings to be replaced with new ones. The project aims to identify, investigate, document, and analyse Izmir's mid-century multi-story apartment buildings from various perspectives, and preserve their interiors and

architectural elements as reflecting the codes of Modernism. The aim is to allow researchers and city residents easy access to all data through a digital archive, catalogue, brochure, and exhibition outputs. Apart from the documentation and archive work, 3D visualization methods will be used. 3D models of the areas selected from the façades, common areas, and apartment interiors will be produced. Virtual reality technology will thus enable these structures to become a permanent part of the city's memory.

To analyse İzmir's Modernist domestic interior architecture, we studied the social, cultural, and architectural characteristics of the apartment interiors. We also revealed the role of the architects and designers in the social and cultural transformation of Turkish society within the framework of modernization. More specifically, we investigated the characteristics of domestic space, material culture, spatial relationships, living culture, and the habits of the inhabitants by focusing on interiors and digitally documenting all data, including archive drawings, old and new photographs, oral interviews, and personal archives. From a wider perspective, these 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. Analysis and documentation of the apartment buildings and their interiors enabled us to develop a holistic understanding of the representation of modernity and domestic space relations.

Digital Documentation Methods in Architecture

According to Hassani (2015), there are three main categories of digital documentation techniques: image-based, non-image based, and combinative.

Image-based techniques are mainly based on photographs, considered as the basic tool for documenting cultural heritage. The first technique is **photogrammetry**. This includes three main methods for measuring, interpreting, and modelling the object by referring to images of it to produce results relatively rapidly. The first method is *panorama photography* using multi-image photogrammetric methods. The method's most significant advantage is the capability of archiving measurement data from a large object with just a few images. The method is also cheap, quick, easy to use within geographical information systems, and can be presented attractively in web pages. The second photogrammetry method, *close-range photogrammetry*, requires a minimum of two images with overlapping data to allow triangulation. This enables faster and easier recording and processing. It also enables the most accurate documentation of colour and textures, especially when reach to an object is limited. The greatest advantages are ease in creating an archive for future needs, the ability to keep a large amount of data, great accuracy, providing 3D models, providing both metric and vector data of the object's texture, low cost and equipment portability. The third photogrammetry method uses *unmanned aerial vehicles (UAV)*, such as a light low-cost aerial vehicle like a small helicopter, a digital camera, and special systems for determining the position of the object. The main advantages are its fast image shooting, real-time capability, short interruption times, and the ability to survey inaccessible or dangerous areas. The second technique-main image-based technique is **IR (InfraRed) Cameras**. Infrared imaging and measurement cameras are used to observe and measure thermal energy emitted from the object. The greatest advantages are the ability to integrate data with and map on 3D models and digital images.

Non-image-based techniques are implemented directly using range-based tools. The first main technique is **the traditional terrestrial survey**, which includes two methods. First, *a hand survey* can be conducted using hand measurements with a basic tape or a laser distance measurer. Measurements are recorded on a sketch drawn beforehand. After the survey, the measurements are redrawn in a CAD medium. The advantages are that it is cheap, simple, and can be performed by non-experts. Second, *theodolite measurement* can be used in topographic surveys to determine the coordinates of key points to outline the target object. This method is also cheap while yielding accurate data. However, it requires skilled operators. The second main non-image-based technique is **laser scanning**, which also includes two main methods. First, *terrestrial laser scanning*, developed in the 1980s, uses a robotic station to acquire distance and angle data from the target to output measurements, sections, textures, 2D drawings, and 3D solid models. The main advantages are rapid data collection, no limitations due to the form of the object, and providing detailed results for complex objects. The second laser scanning method uses light detection and a ranging system called **LIDAR**, introduced by NASA in 1970, to produce a digital surface model (DSM). It requires a differential global positioning system (DGPS) for determining the coordinates, an inertial measurement unit for calculating the laser transmission angle, and a laser scanning system for measuring the distance between the laser vibration transmission point and the earth's surface. The greatest advantage is collecting the data very quickly.

Combinative methods take advantage of both categories of techniques. First, **photo-laser scanning** combines close-range photogrammetry with a point cloud produced by a laser scanner. Camera photographs compensate for the inability of laser scanning to survey edges and cracks. This provides a more accurate and reliable output than either technique alone. The second combinative technique is a **structured light**, which includes three methods. The first method involves *projecting a single pattern or a set of patterns onto targeted*

objects to increase the number of corresponding points in each image. The coded patterns help create a correspondence between the image points and projected pattern points for triangulation. The second method, *kinetic structured light*, uses a game-oriented RGB-D camera composed of RGB and IR sensors with an IR pattern projector to provide real-time colour and depth data. This method is cheap while the equipment is small, light, and portable. Third, the *David Laser Scanner* provides cheap 3D documentation via triangulation using a video camera, a computer, a line laser source and background containing control points. The method is self-calibrating, cheap, and user friendly.

Virtual reality applications of 3D visualization of cultural heritage are being used increasingly for various purposes, including digital preservation (rebuilding damaged or destroyed structures), archaeological reconstructions, and testing scientific hypotheses (Brondi et al, 2016). Through 3D visualization, researchers identify relevant areas for exploring visual methods to transfer and generate information and integrate their insights into theoretical frameworks and models, thereby mediating between isolated areas (Burkhard, 2006). 3D visualization takes advantage of behavioural virtual reality technology, combines behavioural and motion perception features with spatial awareness and provides users with a realistic experience by creating three-dimensional perceptions. The development of virtual reality technology enables researchers to use a virtual 3D computer environment to preserve the shapes of objects that have been damaged or destroyed in natural and historical disasters.

With mixed reality applications developed in cultural heritage research, users can see virtual reconstructions of temples and other monuments placed directly among real ruins within archaeological sites using a Head Mounted Display (Brondi et al., 2012). The data collection phase is performed using local optical recording systems and laser scanners (LIDAR) (Sümer & Türker, 2009). Different 3D visualization techniques are used only in archaeological sites, LIDAR scanning, city drafts, and building exteriors. In the present study, 3D visualization data via mixed reality were used to investigate and analyse the interiors and exteriors of the Karşıyaka residences, which have not previously been decoded. Using 3D visualization, virtual reality, and 3D printing technologies ensured that gaps in İzmir's urban memory can be filled by these revitalization techniques.

Key Digital Documentation Studies

There have been a number of pioneering digital documentation studies worldwide and in Turkey specifically. The most famous non-profit organization in this field, *Docomomo International*, is dedicated to conservation and documentation of buildings, neighbourhoods and sites of the modern movement. It was initiated in 1988 by Hubert-Jan Henket and Wessel de Jonge at Eindhoven, Netherlands. The organization's mission is to act as a watchdog whenever important modern movement buildings are threatened, exchange ideas about conservation technology, history, and education, promote interest in the ideas and heritage of the modern movement, and encourage responsibility regarding this recent architectural heritage (<https://www.docomomo.com/about/organization/>). Docomomo International organizes biennial international conferences on different themes related to conserving modern movement heritage. The *Docomomo Turkey Study Group* was established in 2002 as part of this international movement (<http://www.docomomo-tr.org/hakkinda>). Docomomo Turkey Study Group organizes annual poster presentations by researchers from Turkish universities of Turkey's modern movement architectural heritage. After each event, a digital book is produced with summaries of the presentations and building photographs. Both Docomomo International and Docomomo Turkey Study Group focus on architecture. In contrast, the *Docomomo Modern Interiors Committee* was established in 2019 in Turkey to focus on interior design. Its main aim is to understand the role of interiors in the modern movement, research interiors regarding their historical, cultural, geographical, and thematic aspects to understand the importance of their protection and present the findings as an interdisciplinary research area. Like Docomomo International, it also aims to spread awareness of Turkey's specific modern interior ideas to the international arena, relate it to this arena, transfer this knowledge into education, and relate it with today's context (<https://xxi.com.tr/i/docomomo-turkiye-modern-ic-mekan-komitesi-kuruldu>).

Another Turkish organisation that documents architectural heritage is Koç University's *VEKAM* (Vehbi Koç Ankara Studies Research Center). This centre's purpose is to engage in and support academic studies and interdisciplinary research on the social and economic history, urban development, culture, and cultural heritage of Ankara and its region. The aim is to coordinate and collaborate with relevant entities, provide resources to the academic personnel and researchers who research Ankara and the region, contribute to the national and international academic dialogue, and ensure that research and applied projects can reach wider audiences. VEKAM's main vision is to become the starting point for developing research on Ankara, which historically has been the center of various civilizations, and become an internationally respected research centre by undertaking or supporting urban studies research and projects (<https://vekam.ku.edu.tr/en/content/koc-university-vehbi-koc-ankara-studies-research-center-vekam>). One

of VEKAM's most important research projects is the Civilian Architectural Memory of Ankara in the period 1930-1980: Research, Documentation, and Conservation Measures Project. Other ongoing projects include Architects who Made their Remarks in the Ankara Project and Bioarchaeological and High-Tech Research on Skeletal Remains of Juliopolis Project.

The final Turkish organization documenting architectural heritage is *SALT*, established in 2011. Since 2013, it became Turkey's only member of the European Museum Confederation L'Internationale. *SALT* is a cultural centre that organizes web and digitization projects, research, exhibitions, and publications in Ankara and İstanbul and public activities like conversations, conferences, presentations, and workshops. The organization's main interests are art, architecture, design practices, social, and economic historical research. It also hosts a huge archive of local architecture, historiography, and visual presentations (<https://saltonline.org/tr/43>).

Case Study: Apartment Buildings Between 1950 and 1980 in Karşıyaka, İzmir

In parallel with Turkey's Republican ideology of Turkey, modernisation and westernisation were promoted in architecture, domestic spaces, and modes of living. As a complex combination of both tangible and intangible values, apartments convey many different meanings, such as political modernization, economic objects, social ideas, cultural reflections, domestic space, everyday life, and spatial practices (Gürel, 2007).

Several important breakpoints played significant roles in Turkey's modernization and Westernization in the mid-20th century after the Turkish Republic was established in 1923, particularly the 1929 economic depression, World War II (1939-1945), the Democrat Party's 1950 election victory following the introduction of a multi-party system in 1946, post-war Marshall Aid, and Flat Property Legislation in 1965. These social, political, cultural, and economic developments were strongly tied to the development of architectural attitudes in Turkey, which aimed to follow global modernization trends. After the 1950s, housing production accelerated, especially in Turkey's major cities – İstanbul, Ankara, İzmir. The predominance of apartment buildings led to urban transformation and the 1965 Flat Property Law.

Apartment buildings had first appeared in İstanbul at the end of the 19th century for upper-class non-Muslim urban dwellers. These masonry multi-story dwelling units were similar to European examples in Vienna and Paris in size, form, style, and façade design. In İzmir, the Anadolu Apartment Block (1905) was of a similar type apart from some different façade details that resembled Ottoman architectural elements for the sake of national identity, such as pointed and subjugated arches, and a traditional hipped roof with large eaves. After 1923, Turkey's housing needs in its major cities led to accelerated construction of apartment buildings. The modern lifestyle was identified with the 1930s' cube-shaped apartment buildings, three or four stories high and with just one or two apartments on each story. Their interiors were designed for the new modern citizens living as a nuclear family and appropriate for contemporary living. The designers preferred simple plans and limited materials while prioritizing rationality over form and style due to the country's scarce resources. Such buildings continued to be constructed in İstanbul, Ankara, İzmir, Adana, Kütahya, and Eskişehir until the end of the 1940s as so-called "rent houses". However, Turkish society did not identify with such apartments, mostly preferring single-family houses with gardens. Both types were promoted as desirable dwelling units reflecting the modern lifestyle and social status.

With the political shift to liberalism in 1950, multi-story apartment buildings started to sprawl across all Turkish cities as a common dwelling type with the formal characteristics of Modern architecture. Standardized rectilinear prismatic blocks constructed with reinforced concrete load-bearing systems with plain façades became the symbol of modernism and associated with modern living. After the 1965 Flat Property Law granted the legal right for individual ownership of units within an apartment block, urban transformation was accelerated in the major cities' residential areas. With their open plans, flat roof terraces, concrete canopies, and austere facades, these multi-story concrete apartment buildings reflected the Modernist language. Subsequently, apartment blocks built by individual developers for Turkey's upper-middle and middle classes rapidly spread across İstanbul, Ankara, and İzmir. However, given the complex dynamics of Turkish society, other indicators than social class should be considered, such as education level, family economic resources, and social/cultural background.

With the third-largest population after İstanbul and Ankara, İzmir had wealthy merchants and a well-educated upper class during 1950-1980, including engineers, doctors, and government officials. Architect-designed apartments were built by individual firms for high-income groups, especially in Alsancak, Güzelyalı, Hatay, and Karşıyaka neighbourhoods.

International developments in modern architecture were also influenced by İzmir's architects. The common characteristics of modernist architecture are rectilinear forms, light and plane surfaces completely stripped of applied ornamentation and decoration, and flexible interior spaces. Construction materials were mainly glass and steel, in combination with usually less visible reinforced concrete.

Karşıyaka, the case study area, has hosted good quality buildings since it became a suburb in the 19th century. After the drainage of wetlands, the construction of a railway station in 1865, and a ferry service from İzmir in 1884, Karşıyaka developed into a dense urban settlement for Levantines and other minorities (Sormaykan, 2008). After the Great Fire of İzmir in 1922 and the population exchange between Greece and Turkey, the demand for housing in Karşıyaka increased. After 1923, migration into İzmir increased housing demand, leading to the production of one or two-story detached housing units, followed later by three-story family apartments. Karşıyaka retained this low-density character until the early 1950s (Gündüz, 2006), after which four and five-story family apartments appeared. Construction was funded by individual capital holders until the 1960s. After the 1960s, however, because of rapidly growing migration, housing demand, land values, and construction costs all rose rapidly. Consequently, some experimental construction activities were financed by collective capital (Sormaykan, 2008). The Flat Property Law (1965) accelerated construction and reduced construction costs by bringing together small capital owners as “apartment owners”. Building contractors, excluding owners and architects, began to take appear while rapidly increasing housing demands and commercial concerns changed the general view and quality of Karşıyaka’s housing stock. This has continued until today (Gündüz, 2006), such that the area now hosts a housing legacy and the culture of past periods. Because the transformation of its housing stock is endangering the sustainability of Karşıyaka's urban identity and housing culture, this suburb was chosen as the case study to document the architectural heritage. The project is also needed because of the lack of studies focusing on Turkey’s housing interiors and domestic life, and the density of architect-designed apartment buildings in this suburb.

After the 1950s, Turkish architects became influenced by the modernist components of the International Style, such as large facade openings, asymmetric facade designs, translucent balconies, and flat roofs (Coşkunoğlu Mete, 2009). These were successfully implemented in facade designs, which contributed to Turkey’s urban identity. However, the layouts of international style building apartments evolved slowly through several stages from the Second National Movement to International Style. The general features of these two styles were locating living areas (usually diverse living areas, such as guestroom, living room, and dining room) adjacent to the main facades whereas sleeping areas were placed adjacent to the side or rear facades. Also, large entrance halls became smaller while corridors were added (Sormaykan, 2008). Three prominent local İzmir furniture makers from the Post-Republican Era were Haraççı Brothers & Co., Ege Chair, and Sim Furniture. Furniture pieces from this time show evidence of modernization and western design influences. Sim Furniture products particularly used new technical ideas and materials, such as Formica sheets and synthetic varnishes (Esenalp, 2016).

This study focused on apartment buildings in Karşıyaka, which are among the leading examples of modernist lifestyle and domestic interiors. One of them, Pitrak Apartment (1974), designed by Cahit Akan, was selected as a case study to demonstrate the digital documentation methods used throughout the ongoing research. Other apartment buildings under study include Gediz Apartment (1967), designed by Faruk San, Gökçeoğlu Apartment (1966), designed by Faruk San, Erdoğan Apartment (1956), designed by Akif Kınay, Paya Apartment (1950), designed by Ziya Nebioğlu, and Dolunay Apartment (1975), designed by Kemal Türksönmez and Semih Aygıt. These apartment buildings are among the most important representatives of modern residential life in Karşıyaka in the 1950-1980s. All have high urban context value in terms of their architectural features, architect-designed apartments, modernist design concepts, and historical continuity.



Figure 1. Selected Apartment Buildings from Karşıyaka, İzmir (designed by authors; photographs from authors' archives, 2016, 2019, 2020).

Pitrak Apartment Building as an Example of Digital Documentation

Pitrak Apartment, which is one of Karşıyaka's biggest and most prestigious apartment buildings, was built in 1974 by Cahit Akan to replace Berin Apartment (designed by Necmettin Emre in 1939) on Cemal Gürsel Street (Gündüz, 2017). The ground floor's functions varied over time to include restaurants, a ceramic exhibition gallery, and a bank branch. The famous Palet Restaurant, opened in 1979, became an important place in the city's entertainment life. The large backyard housed an indoor swimming pool known as "the cup", which converted into a car park in 2003.

The building has 9 floors and 24 flats, with three flats on each floor. Its two blocks have separate entrances. Typical of the construction system and technical equipment of the period, it was built using a reinforced concrete carcass system. It has cubic multi-story apartment characteristics with a symmetrical facade that was often seen on the İzmir coastline after 1970. Pitrak Apartment has aesthetic and design authenticity due to its original design, transparent facade, apartment layouts, materials, and architectural details. The building has a mass effect, facade integrity, simplicity, and vertical-horizontal balance in its balconies. It reflects the modern interior design approach and modest local modernism of Turkey's leading architects of the period. The specific details include façade elements like balcony railings, vertical precast elements, and concrete terrace canopy. Its plan and holistic modern interior design make it a unique example of that period.

Two apartments have been analysed in detail. One is the apartment of the architect Cahit Akan (8th floor, apartment 15), while the other is the flat of Meral Özsoy (4th floor, apartment 4). Data about both flats

were recorded by on-site observation, measuring and 3D laser scanning, and photography and video shootings. Oral histories were taken from the apartment residents Meral Özsoy and Rezzan Özek Akan. Both apartments have mostly conserved their original interior details. The flats were designed with a corridor plan, with the bedrooms, kitchen, and bathroom located on either side and the living room along the entire front façade.

The architect-designed interior details and built-in furniture in apartment 15 were sleek through the use of new materials, such as Formica, metals and plastics, linear and planar elements, built-in closets, shelves, seating and storage units, and indirect lighting integrated with suspended ceiling elements.

Cahit Akan explained his design philosophy as follows:

"Our style is not Ottoman style, but we admire the old. If necessary, I made a table motif, balcony railings, a rug motif. I showed my interest in ancient Ottoman architecture in detail. I am a person who knows that there is no Sedad Hakki Eldem. If you know yourself, you are happy if you can do the maximum you can" (Kaftancı, 1998, p.13).

Many of apartment 8's original interior elements, designed by Cahit Akan for his family, remain. The entrance door and its door handle are the originals. The first remarkable element is the lack of pendant lighting fittings. Instead, Akan created linear and rectangular areas with light wood and hidden illumination throughout the house. The ceilings also have square plasterboard decorations. The original flooring has been replaced by laminate parquet and the joinery has been changed. Another original detail is the shelves designed by Akan, which have triangular junctions with the walls that avoid repeating each other on different shelves. The original flooring material, green felt, still forms the backing of the shelves.

The console, which he also designed, is fixed to the floor with a single foot with the same green felt behind it. The kitchen and living room are visually linked by a rectangular opening. The lower part of the wooden divider on the side of this opening facing the hall was designed as a bookcase. The fireplace, whose original form has been preserved but whose outer cover has been changed, is on a platform one step higher than the floor. This room also includes personal belongings of Cahit Akan and his family from the 1970s and 1980s.

After the kitchen was moved, the floor ceramics were changed but the original furniture was preserved and is still used. The kitchen also has hidden lighting under the upper cabinets. While the original green felt corridor, flooring is retained opposite the rooms, the kitchen floor and front door entrance now have ceramic flooring. The hall cloakroom is preserved in its original form. White wooden bottom cabinets are also fixed to the floor with one foot. Next to the corridor, there is a built-in wardrobe and console with interior lighting. The corridor and room doors, designed by Akan, have sliding glass openings in their top halves to control the flow of sea breezes through the apartment.

The study retains the original furniture designed by Akan, such as cabinets and coffee tables used for storage. Concealed lighting is located just above the white Formica coated wooden worktable fixed to the floor while the white Formica single bed is also fixed to the floor. The living room has kept its original wallpaper while there is rectangular hidden pendant lighting above the balcony door. The bedroom's furniture designed by Cahit Akan has been retained along with the green felt flooring. The bed is fixed to the floor while there is Formica covered shelving in the headboard. The material used on the floor was also used behind the vanity table. Flat 4 also retains important original interior elements, including a wooden partition panel, fireplace, and fixed living room furniture, ceramic flooring, a swing door and fixed units in the kitchen, the bathroom floor and wall ceramics, massive pinewood parquet flooring, and furniture in the bedroom. The original flooring was created by pouring polyester onto pumice stone.

Recording and Documenting Putrak Apartment Building

A comprehensive approach was required to determine, record, document, and analyse from different perspectives İzmir's multi-story apartment buildings, which still have great value in their architectural and interior features. Digital documentation was conducted in two stages: recording and documenting (Figure 2). A photo-laser scanner was used as a combinative method to take advantage of both photogrammetry and laser scanning (Figures 3, 4, & 5). A hand survey was used to support these methods. The specific data collection methods were on-site observation, measuring and 3D laser scanning, photo and video shooting, and oral history studies. The main outputs to preserve this example of Turkey's modern architectural heritage were 2D & 3D drawings, graphic design, a web site, and social media design (Figures 6, 7, 8, 9 & 10).

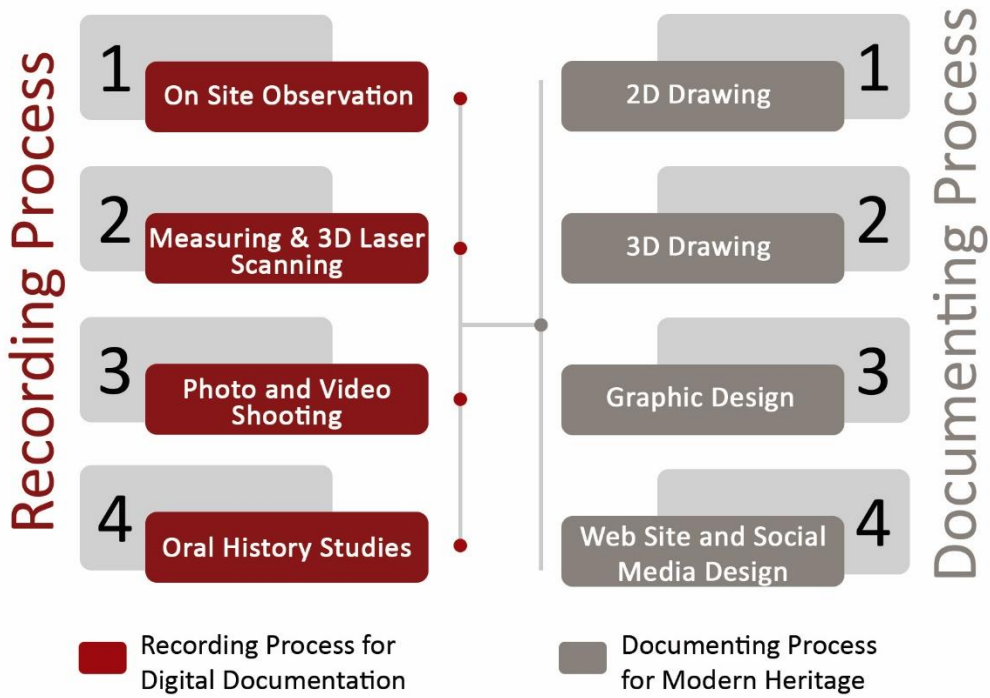


Figure 2. Recording and Documenting for Digital Documentation (Designed by Authors).

Pıtrak Apartment was selected as a case study to exemplify digital documentation because it reflects the characteristics of 20th-century architectural modernism and contributes to İzmir’s housing culture. The building’s architectural and interior elements, facade characteristics, original details, and contemporary materials selection is an important case for architectural documentation.

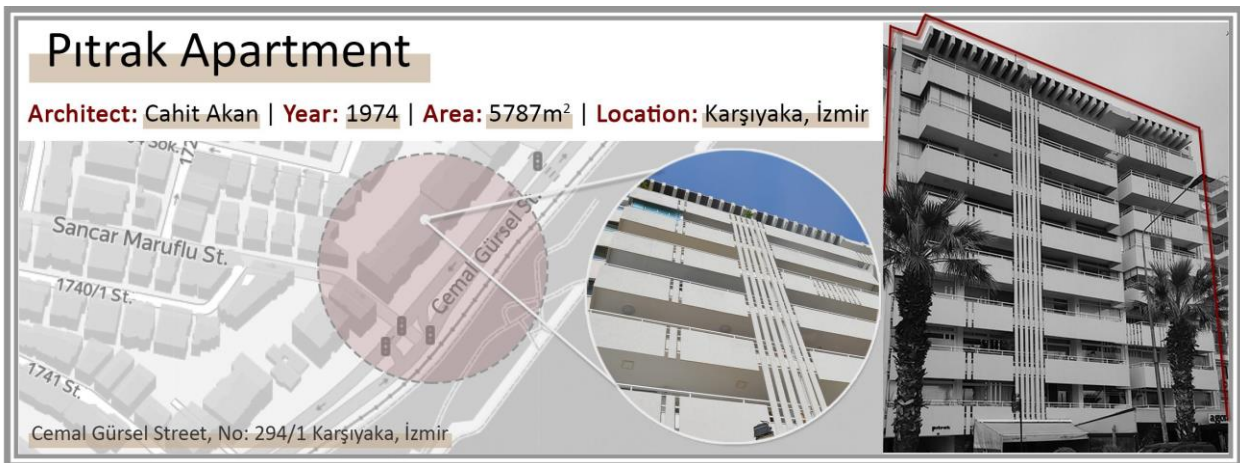


Figure 3. Pıtrak Apartment Building, On-Site Observation for Recording Process (Designed by Authors).



Figure 4. Pıtrak Apartment Building Photographs for Recording Process (Designed by Authors).

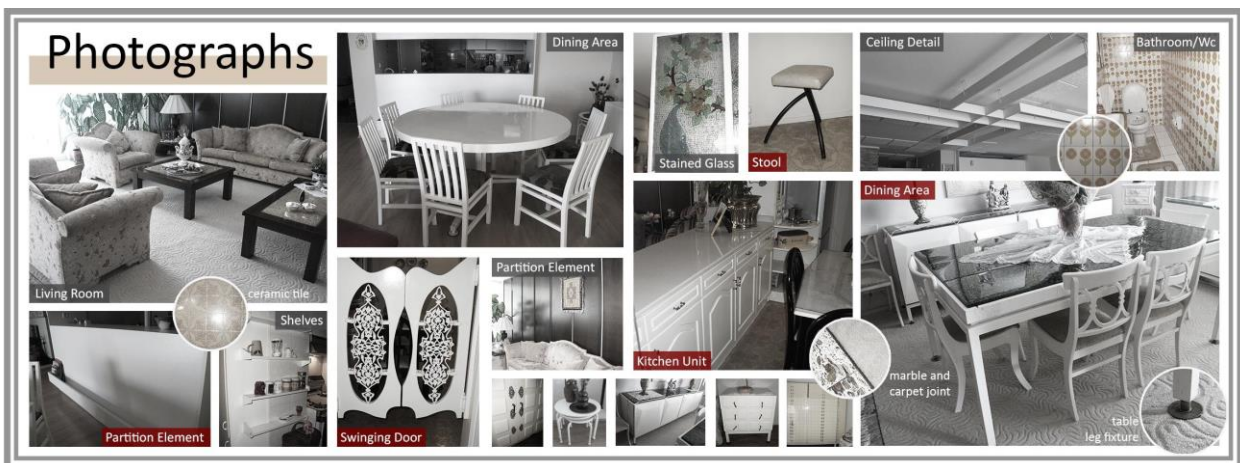


Figure 5. Pıtrak Building Apartment Interior Photographs from for Recording Process (Designed by Authors).

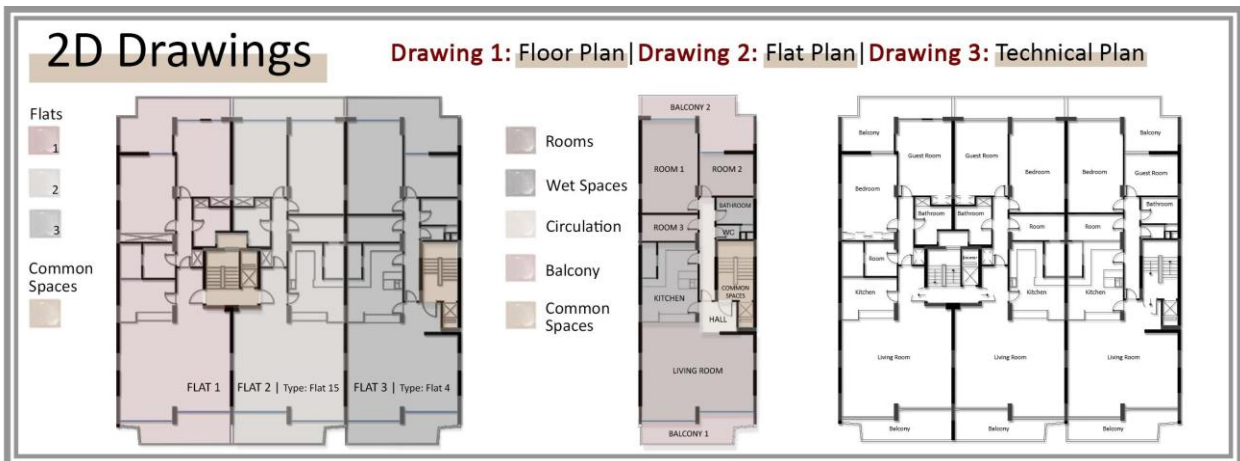


Figure 6. Pıtrak Apartment Building 2D Drawings for Documenting Process (Designed by Authors).



Figure 7. Pitrak Apartment Building 3D Drawings for Documenting Process, Apartment 15 (Designed by Authors).

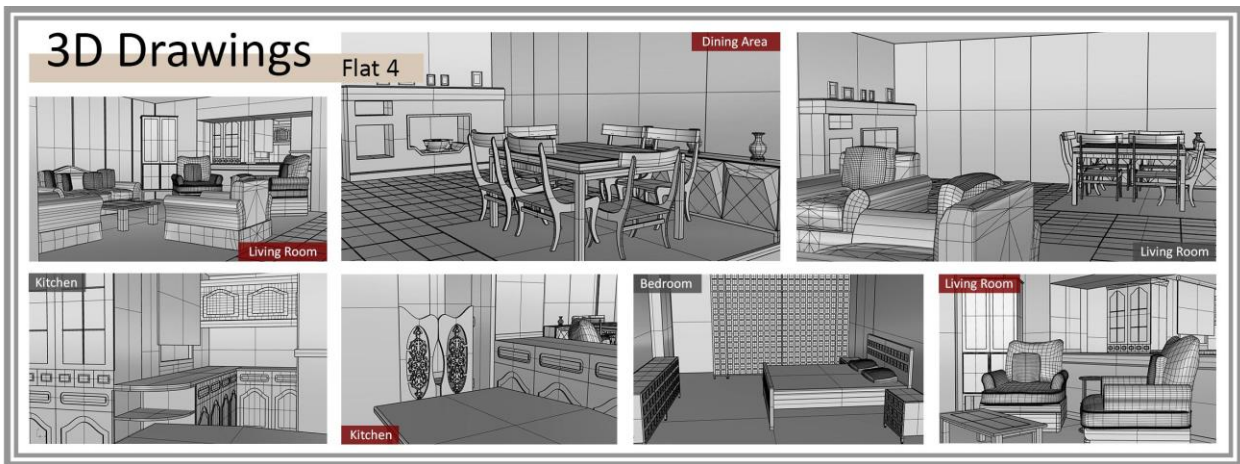


Figure 8. Pitrak Apartment Building 3D Drawings for Documenting Process, Apartment 4 (Designed by Authors).

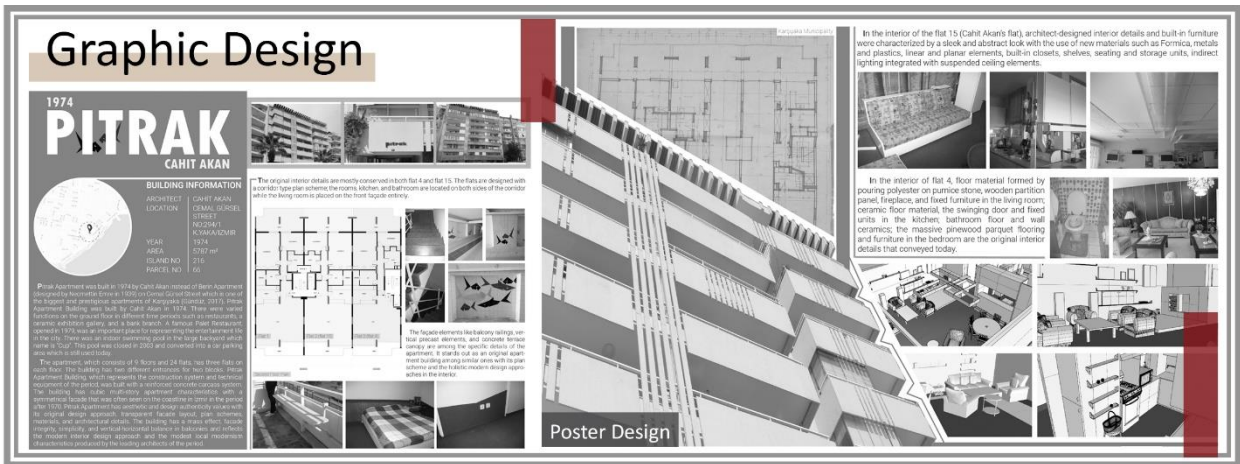


Figure 9. Pitrak Apartment Building Graphic Design for Documenting Process (Designed by Authors).

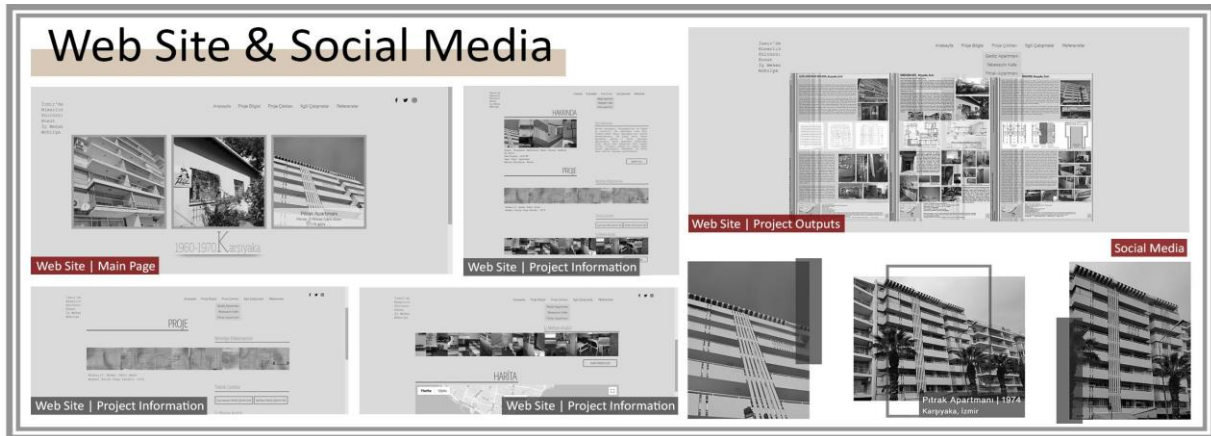


Figure 10. Pitrak Apartment Building Website and Social Media Design for Documenting Process (Designed by Authors).

Conclusion

The integration of digital technologies into architecture enables architectural values in a city and its residents' memories to be preserved permanently. As the most common building type codifying the aesthetics of Modern architecture. Turkey's apartment buildings are more visible and accessible via these digital tools, especially regarding the interiors, which have unique characteristics imbued with domestic space, spatial practices, daily life, and material culture. By recording and documenting the selected apartment buildings built between 1950 and 1980 in Karşıyaka, İzmir, the project aimed to permanently visualize memories and data. The digital recording and documentation enable city residents and researchers to easily access the project's outputs. This digital documentation, which also contributes to the city's wider identity, allows us to understand the technical and architectural approaches of that period and is planned to lead the way in documenting the history of architecture. Additionally, deeper information beyond these data can be read, such as the role of the domestic space in constructing Turkey's modern consciousness, modernized modes of living, everyday practices, spatial organization, material culture, and furnishings. By researching multi-story apartment buildings as objects of architectural culture through recording, analysis, and documentation, this project ensured the virtual permanence of these buildings with their tangible and intangible values. This project will also create awareness in terms of moving the cultural heritage of the modern period towards the future in a principled manner. By introducing concepts like virtual housing identity documents and a virtual city housing architecture museum, the project will bring a different approach to scientific studies of modern housing heritage.

Due to technological revolutions and changed daily practices due to the current Covid-19 pandemic, people will start to use digital media more, both for working and socializing. This project will, therefore, include further studies, and work on virtual reality methods, exhibitions, 3D printer outputs, and e-catalogue. The exhibition planned as a continuation of this work aims to present this project to the citizens. Using 3D complementary visualization techniques, this work will be transferred to a virtual environment to give a more immersive experience to visitors while the e-catalogue will allow easy access to this data. So far, the project has focused on Karşıyaka, but city-wide work is planned based on this project to gradually document and analyse İzmir's entire residential fabric for the specified period.

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Conflict of interest

The Author declares no conflict of interest.

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