

DOCUMENTATION OF THE ARCHITECTURAL CHARACTERISTICS OF A HISTORICAL HOUSE

S. Buyukkilic¹, M. Hamamcioglu-Turan¹, F. N. Kul¹

¹Izmir Institute of Technology, Faculty of Architecture, Department of Architectural Restoration, Urla, Izmir, Turkey

(sunabuyukkilic, mineturan, nursenkul)@iyte.edu.tr

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Abstract:

The aim of this study is to document the spatial characteristics of a 19th century Izmir house, which is a modest scaled urban building and composed of a main mass, a service mass and a rear courtyard. With this aim, scaled drawings, photographic documentation, visual analysis, and classification and mapping of the historical spaces and their elements are made. The originality of these spaces and elements are evaluated within the frame of research results that are previously published, site surveys made in various districts of Izmir within the limits of this study and archive research results. The architectural vocabulary of the house is evaluated both with its modern and traditional aspects.

As a result, it is found out that the original spatial characteristics and architectural elements of the case study house have been sustained to a great extent. The classification and comparison system developed for the documentation of the historical spatial theme has been sufficient for understanding the original qualities. In turn, conservation measures can be prosperously taken.

1. INTRODUCTION

Documentation of historical buildings includes not only measured survey, but also surveying of the qualities of building spaces and their elements. The aim of this study is to document the architectural characteristics of a 19th century Izmir house [1] so that its heritage values can be identified. With this purpose, scaled drawings, photographic documentation, visual analysis, classification and mapping of the historical spaces and their elements are made. The originality of these spaces and elements are evaluated within the frame of research results that are previously published, site surveys made in various districts of Izmir within the limits of this study and archive research. The architectural vocabulary of the house is evaluated both with its modern and traditional aspects.

1.1. Methodology

The sketches drawn at the site and the measurements taken with conventional and tacheometric methods were used to prepare the scaled drawings in AutoCAD 2010.

Pictorial photographs were taken. Each architectural element and each space were photographed systematically. Their relationships with each other were also considered.

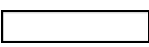

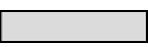










Visual analysis consisted of two parts. The first part was spatial elements analysis and the second part was architectural elements analysis. The spaces were grouped according to their functions and the elements were grouped according to their types.

Three types of spaces according to their functions were deciphered: main spaces, service spaces and circulation spaces. Main spaces were defined as daily living areas and sleeping rooms on the ground and first floors, respectively. Service spaces were defined as kitchen, lavatories and storage spaces at the rear part of

the housing unit with relatively low floor heights on ground and mezzanine levels. Circulation spaces were defined as halls and staircases providing link between all spaces. Each space type was illustrated with a different gray shade on scaled drawings. Three types of main spaces, three types of service spaces and two types of circulation spaces were identified.

The architectural elements were defined as those that contribute to spatial quality with their aesthetic and/or functional characteristics. The pictorial photographs were reconsidered with an eye on the characteristics of architectural elements. The different types and their variations were identified considering the factors of form, material, dimension and location. The results were tabulated (Table 1). 15 different elements with sub-categories were identified. An element ID, a symbol and a photograph was associated with each element. The elements were listed in the order of their location starting from the top and continuing to the bottom.

Table 1: Architectural Characteristics of the Case Study House*

Spatial Elements		
 Main Spaces	 Service Spaces	 Circulation Spaces
Room	Kitchen	Hall
Courtyard	Toilet	Staircase
Terrace	Storage Spaces	
Architectural Elements		
CC Ceiling Covering: CC1, CC2, CC3, CC4, CC5, CC6, CC7, CC8	 Chimney: T₁	
COR Cornice: COR1, COR2, COR3, COR4, COR5	 Fireplace: *₁	
PR Projection: PR1	 Sink: X_{1, X2}	
 Exterior Door: 1, 2, 3, 4, 5	 Bench: 1	
 Interior Door: 1, 2, 3, 4, 5, 6, 7, 8	 Toilet: 1	
 Window: 1, 2, 3, 4, 5, 6, 7, 8	BB Baseboard: BB1, BB2, BB3	
 Staircase: 1, 2	FC Floor Covering: FC1, FC2, FC3, FC4, FC5, FC6, FC7	
 Pilaster: 1		

* In the original table, a photo for each space type and element ID was provided. These photos were eliminated here because of lack of space.

In order to evaluate the architectural characteristics of the case study house, the analytical results were compared with similar houses in Izmir, with the examples presented in the related literature, and with the examples presented in the archives. The factors considered in the comparison are relations of the housing unit with its environment, the solid-void organization, the facade organization, the plan organization, the spatial elements, the architectural elements, the construction technique and the mobile furniture. These factors made up the row headings of the comparison table (Table 2), while the selected house examples grouped according to their location in the city and their information sources made up the column headings. The factors considered in comparison were further limited with regard to the characteristics of the case study as below: The examples defining row house character in their environment; the entrance facades of two storied houses with single living units, central projections and asymmetrical entrance doors; plan organizations defining asymmetry on the ground floor and symmetry on the first floor in terms of positioning of the hall, the spatial and architectural elements of the case study presenting restitution problems, the late 19th century buildings of Izmir whose walls are in combined technique.

Table 2 : Comparison Table*




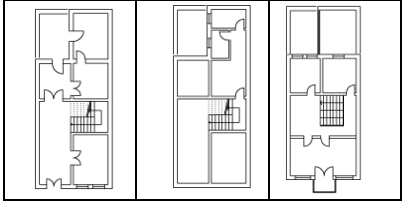



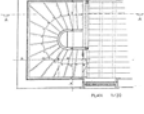




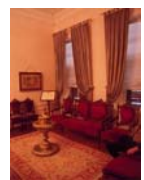


			House Examples			
		Building Location	Information Source	Figure		
Factors Considered in Comparison	Relations with Environment	Karatas	Visual Analysis	 <p>F1. Row houses (1462 Street)</p>		
		Kemeralti	Visual Analysis			
		Alsancak	Visual Analysis (F1)			
		Karatas	Akyuz, 1993			
		Alsancak	Akyuz, 1993			
		Karatas	Ministry of Culture, 2003			
		Karatas	Ministry of Culture, 2003			
	Solid-Void Organisation	Karatas	Visual Analysis (F2)	 <p>F2. A Housing Unit (305 Street)</p>		
		Alsancak	Visual Analysis			
		City Centre	Akyuz, 1993			
	Facade Organization	Karatas	Visual Analysis	 <p>F3. Entrance Facade Typology</p>		
		Alsancak	Visual Analysis			
		Karatas	Akyuz, 1993			
		Buca	Erpi, 1987 (F3)			
		Karatas	Ministry of Culture, 2003			
	Plan Organization	Alsancak	Visual Analysis (F4a,b,c)	 <p>F4a. Ground Floor F4b. Mezzanine Floor F4c. First Floor (1462 Street No:33t)</p>		
		City Centre	Akyuz, 1993			
		City Centre	Cikis, 2009			
		Karatas	Visual Analysis			
		Kemeralti	Visual Analysis			
		Buca	Erpi, 1987			
		Karsiyaka	Dipburun, 2006			
	Spatial Elements	Kitchen	Kemeralti	Visual Analysis	 <p>F5. Kitchenette</p>	
			Unknown	Cikis, 2009		
			Karsiyaka	Dipburun, 2006		
			Buca	Erpi, 1987 (F5)		
		Bathroom	Alsancak	Visual Analysis (F6)	 <p>F6. Bathroom Example (Ataturk Street No:24)</p>	
Terrace		Karatas	Visual Analysis	 <p>F7. Terrace (1462 Street No:33)</p>		
		Alsancak	Visual Analysis (F7)			

Table 2 continued: Comparison Table*

			House Examples			
			Building Location	Information Source	Figure	
Factors Considered in Comparison	Architectural Elements	Staircase	Karatas	Visual Analysis	 F8. Staircase Example	
			City Centre	Akyuz, 1993 (F8)		
		Interior Doors	Karatas	Visual Analysis		 F9. Interior Door Example
			Basmane	Visual Analysis		
			City Centre	Akyuz, 1993 (F9)		
		Window Shutter	Karatas	Visual Analysis		 F10. Window Shutter [10]
	Kemeralti		Visual Analysis			
	City Centre		Akyuz, 1993			
	RT Ministry of Culture		Archive Research (F10)			
	Courtyard Covering	Kemeralti	Visual Analysis (F12)	 F12. Courtyard Covering Example		
	Construction Technique	Kemeralti	Visual Analysis	 F13. Mithatpasa Industrial High School (Mithatpasa Street No: 469) [12]		
		Mithatpasa	Ipekoglu, et al., 2009 (F13)			
	Mobile Furniture	Living Room	Karsiyaka	Visual Analysis (F14)	 F14. (Latife Hanim Street)	
			Mithatpasa	Visual Analysis		
			1 st Kordon	Visual Analysis		
			Alsancak	Visual Analysis		
Dining Room		Karsiyaka	Visual Analysis	 F15. (Ataturk Street No:24)		
		1 st Kordon	Visual Analysis (F15)			
Bedroom		Karsiyaka	Visual Analysis	 F16. (Ataturk Street No:24)		
		1 st Kordon	Visual Analysis (F16)			

* In the original table, a figure for each line was provided. These figures were reduced in number here because of lack of space.

2. MODERNISATION OF TRADITIONAL OTTOMAN HOUSE - CASE OF IZMIR

There was integration of cultures in the Ottoman Empire and the traditional Ottoman House was a product of this integral culture and shared living habits. In a typical Ottoman house, the ground level of the house

together with the courtyard was devoted to services where as the first floor level was for living. Sleeping and all daily activities were all realized in the multi-functional rooms. Built-in furniture such as sitting platforms, cupboards and niches were important elements of the rooms.

Traditional Ottoman housing culture with the impact of modernization attempts had undergone some changes in the houses of the elites and the non-Muslims [2,3]. The characteristics of such houses built-in Izmir have been researched by a number of scholars [4,5,6,7]. The combination of both traditional and modern characteristics in the shaping of these houses which are mainly dated to the last quarter of the nineteenth century, has given way to a debate in the categorization of these buildings.

A typical late 19th century Izmir house consists of three parts, the main mass with two main floors, the service mass and the rear courtyard [8]. In the dense areas of the city, row houses with modest scale are preferred, [4] while single buildings with large gardens are seen in the sub-urban areas [9]. Generally ground floor includes common usage and first floor includes private usage. The projection (*cumba*) at the upper floor in form of a closed balcony is a typical characteristic of these buildings. They have an orthogonal plan and facade organization.

3. CHARACTERISTICS OF THE CASE STUDY HOUSE

The case study building is located at Karatas, in Izmir on the point which is close by the down town. Karatas was newly established as a residential area at the west of the historical downtown of Izmir in the 19th century. Mostly Jewish people settled in Karatas [7]. Because of this reason, it is thought that a Jewish family might had lived in the case study house. The inclined topography provided vistas to the houses. The difficulty in accessing to the buildings was overcome with staired streets and construction of the historical elevator (1907). The case study house was built at Karatas as a single living unit. In process of time, the social characteristics of its environment changed and its original users moved away. In order to provide the requirements of the new users, the house was divided horizontally and it served as three independent units. After the damaging of a lightning, the house was abandoned and it fell into a dilapidated state because of lack of maintenance.

3.1. Spatial Characteristics

The case study house which is a modest scaled urban building (6.8x14 m) and composed of a main mass, a service mass and a rear courtyard has two main and two partial stories. Its main stories are ground floor and first floor. Its partial stories are basement floor and mezzanine floor (Figure 1). There is a narrow axis (2.5 m) and a broad axis (4.3 m) on the ground floor. There is a hall on the narrow axis and a room at the end of this axis. There is another room on the north of the hall and it is on the broad axis. In turn, a staircase, kitchen and toilet are behind this room on the broad axis. This staircase provides relation between ground floor and first floor's halls. There is a courtyard at the back and an additional staircase here. At the first floor, there is a hall which is surrounded by four rooms. Two of the rooms are on the street side and the others on the back side. There is a projection expanding one of the rooms on the east to the street direction and a terrace at back which is reached from northwestern room and also by the staircase at the courtyard. The basement is used for storage, where as a toilet is present on the mezzanine floor.

As a result of the examination of the functions, spaces were grouped as main spaces, service spaces and circulation spaces (Table1). Rooms, the terrace and the courtyard are main spaces. Halls and staircases are circulation spaces. The kitchen, toilets and storage spaces are service spaces. Living spaces are on the ground floor and sleeping spaces are on the first floor. On the ground floor, the room oriented to the street maybe the guest room, and the room oriented to the courtyard and neighboring the kitchen might be the dining room. On the first floor, the room with the projection might be the main bedroom. The courtyard has close relation with the service mass. So, it can be used for food preparation, laundry, dining etc.



Figure 1: Basement, Ground, Mezzanine and First Floor Plans

3.2. Architectural Elements

There are fifteen types of architectural elements: ceiling coverings, cornices, projection, exterior doors, interior doors, windows, staircases, pilaster, chimney, fireplace, sinks, bench, toilet, baseboards, floor coverings (Table1). Architectural elements are shown on a section drawing (Figure 2).

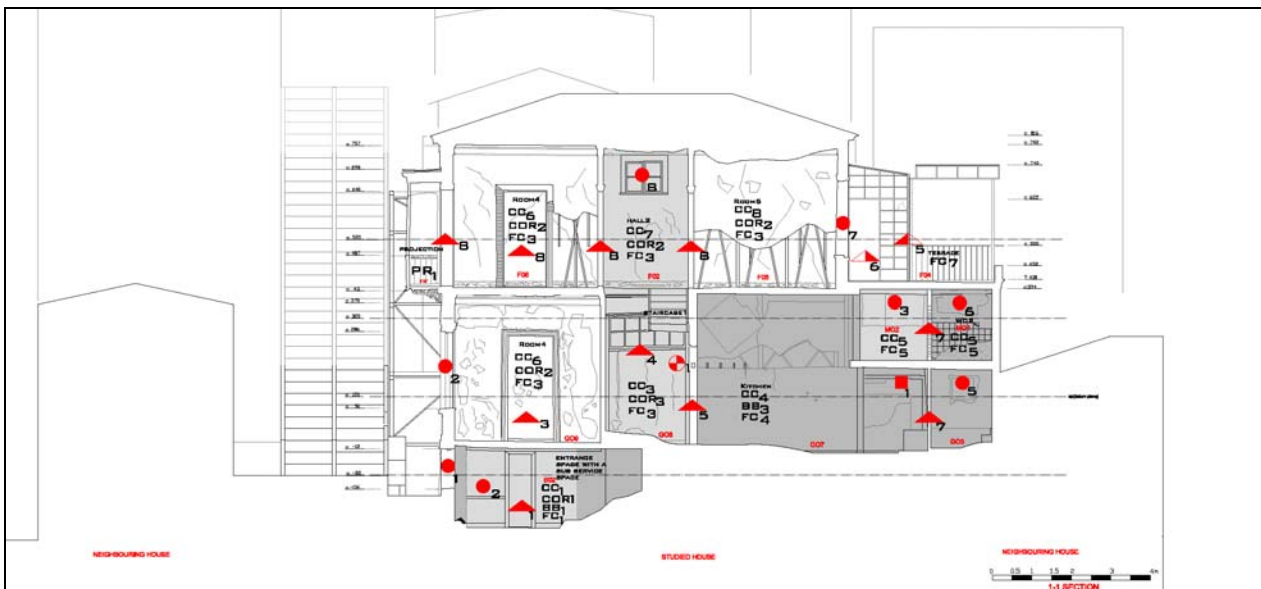


Figure 2: Longitudinal Section

Ceiling coverings present eight variations. There are two different ornamented ceiling coverings on the ground floor; (2/8) one of them at the room at the street direction and the other at the entrance hall. Lime plaster with straw is their major material but only ornamentations are made of gypsum plaster. They have different floral forms. Ceiling coverings of the kitchen at the ground floor (1/8) and, two rooms (2/8) and the hall at the first floor (1/8) were altered with the unqualified wood panels. Service mass has concrete ceiling covering (1/8) and basement floor (1/8) has original timber ceiling covering 16cm in width.

Five varieties of cornices are deciphered at the case study building. Cornices planned as a part of the ceiling decoration and out of gypsum plaster on the first floor (1/5) are more detailed than those on the ground floor (1/5). Basement floor has timber cornices (1/5). The other two cornice variations (2/5) are seen at the entrance facade of the building emphasizing different floor levels and planned as a part of the plaster. First floor's exterior cornice is more detailed than ground floor's.

The timber projection is at the street direction of the house and is at the centre of the entrance facade. It has iron wrought iron brackets.

Six varieties of exterior doors are seen at the building. The main entrance door is more ornamented than the others and it is out of iron (1/6). Two exterior doors are made of timber in the house (2/6). One of them

opens to the courtyard and has lost its leaf, while the other opens to the terrace. Two iron doors of the addition at the terrace have size differences (2/6). The basement's original door leaf is removed today and there is an additional iron leaf in its place (1/6).

There are eight varieties of interior doors. All of the doors are with timber frame (8/8). Excluding the additional timber leaves provided to control the climatic conditions at the entrance hall, all of the original leaves are missing. This early addition at the entrance is a timber door with five leaves. The leaves of the second addition at the stairwell are also missing.

Eight varieties of windows are observed in the case study house. The majority (7/8) are without leaves today. But the one at the hall of the first floor has timber leaves. Some of the windows (4/8) are original window with timber frame. The windows which are not original (4/8) are without frame today. Openings can be classified as their form and location: arched (1/8), rectangular (6/8) or square (1/8), bottom (7/8), or top (1/8), exterior (7/8) or interior (1/8).

The case study building has two types of staircases. One of them is made of timber and its balustrades are removed. It is the original interior staircase (1/2). Other staircase is attached to the rear facade of the house. It is an additional staircase out of reinforced concrete (1/2).

The timber pilaster of the case study house is on the ground floor, adjacent to the door which separates the staircase and the entrance hall.

Chimney of the building aspirates the fireplace on the bench in the kitchen. There is a sink also beside the fireplace. Chimney, bench, sink and fireplace are altered. There is an additional sink at the basement floor.

There is a toilet on the mezzanine floor. It is 71x90 cm. It is also altered as a part of the altered service mass.

Three varieties of baseboards are observed. They can be classified according to their material: marble (1/3), mosaic tiles (1/3) and concrete (1/3). Marble is used at the hall, mosaic tiles are used at the basement floor and concrete is used at the mezzanine floor.

Floor coverings are seen as seven varieties in the case study building. They can be classified as their material: marble (1/7), mosaic (in situ mosaic 1/7, mosaic tiles 2/7), timber in two different sizes (2/7) and concrete (1/7). In situ mosaic, one of the mosaic tiles and the concrete are additional.

4. EVALUATION OF ARCHITECTURAL CHARACTERISTICS

The case study building's characteristics are evaluated with reference to the results of the comparative study (Table2).

In terms of house and environment relations, there are two types observed: row houses and single houses [4]. The case study house is a row house. In fact, this is the widespread type in the city centre. In terms of plan organization, also two types are observed; plan with central hall (symmetrical) and plan with side hall (asymmetrical) [4]. Plan organizations of the stories might be the same or different. The case study building's ground floor has an asymmetrical plan organization with side hall and first floor has a symmetrical plan organization with a central hall. According to their number of stories, the houses are classified as single storied and two storied [4]. Two storied ones are seen more in the city centre [8]. Basement floor might be a complete story or a partial story in accordance with the topography. There is a ventilation floor, instead of basement in plain areas. A partial mezzanine floor for services is often seen. The case study house is two storied. It has a partial basement floor, a partial ventilation floor and a partial mezzanine floor designed in accordance with the lot characteristics.

Entrance facades are evaluated according to the existence and location of the projection and location of the entrance [4]. The projection might be at a side, at the centre or at the corner. Entrance might be at the centre or at a side. The case study house has a central projection and a side entrance.

Cornices, stone casings, iron or timber shutters, timber projections with wrought iron brackets, joints which emphasize horizontality, ornamented iron doors and balustrades, in the interior; ceiling ornaments, cornices, timber staircases, pilasters, fireplaces, timber floor coverings, figured mosaic tiles, white-black checkered marbles and Marseille roof tiles are architectural elements of the period [8]. These elements are observed in the case study house also.

Walls constructed by combining the advantages of wood post and beam system, and the masonry system are preferred in the historic buildings of late 19th century Izmir. This characteristic is repeated in the majority of the exterior walls of the studied house [11].

Comparative study (Table2) shows that the case study house might have had mobile furniture in the living, dining and sleeping rooms. Console, armchair, dining table, chair, lamp, bookshelves, wardrobe, bed, vanity mirror are possible furniture. In the service area built-in cupboards are expected.

5. CONCLUSION

Classification and comparison is an effective way to decipher architectural characteristics of a historical building with its originalities and alterations. The case study house at Karatas was deciphered in terms of these features with the proposed method. As a result, it is found out that the original spatial characteristics and architectural elements of the case study house have been sustained to a great extent. The service mass is the most altered space of the housing unit. The alterations in the main mass are limited to element level. This modest scaled house reflects spatial layout and architectural characteristics of the 19th century urban residential architecture in Izmir. It is possible to follow the influences of modernization in the case study house. The axial organization of the floor plans on ground and first floor levels, specialization of rooms as living, dining and sleeping; and lack of built-in furniture such as cupboards, platforms for sitting, shelves, etc. in these rooms, presence of windows facing the street at ground level and lack of lattice at the windows, presence of wet spaces within the building instead of the courtyard are the spatial features of the modernization period. The usage of prefabricated architectural elements such as leaves of doors and windows, timber stairs, balustrades, pilaster, mosaic floor tiles, iron brackets, Marseille roof tiles, etc. all reveal the characteristics of this period. On the other hand, the organization of rooms around a hall, presence of a service courtyard at the back and provision of vista through a projection are characteristics of the traditional Ottoman house. The building is a typical representative of the late 19th century Izmir houses with its architectural characteristics. The classification system developed for the documentation of the historical spatial theme has been sufficient for understanding the original qualities. In turn, conservation measures can be prosperously taken.

6. REFERENCES

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