

# Suggestion Of Protection For The Masonry Construction In Beyoğlu

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**Abstract-**The study started with the investigation of the stages of Beyoğlu, one of the oldest districts of Istanbul, in the civil architecture from the 19th century to the present day. The district has hosted different ethnic, cultural, religious, linguistic and architectural elements since its establishment and has combined them in a heterogeneous way. Despite the changes it has undergone until today, Beyoğlu is one of the districts that capable of preserving their historical qualities and intensity, have less physical texture deformations compared to other historical districts of Istanbul.

Within the scope of study; the construction, which is located on section 6/ block 347 and parcel 11, which are thought to have been built in the first half of the 19th century, have been prepared relievo studies, discussions on the restoration proposal are included. It is understood from the quite damaged and neglected condition that the building has not undergone a major repair from the date it was built. In order to better scan the house that sheds light on the architectural understanding of the period in terms of planning and facade features, current situation analyzes prepared by using scientific measurement and documentation methods in physical environment are included.

**Keywords** Istanbul, Beyoğlu, Relievo, Restoration, Urban Texture

**Özet- Özet- Çalışma,** İstanbul'un en eski semtlerinden biri olan Beyoğlu'nun 19. yüzyıldan günümüze kadar sivil mimarideki aşamalarının araştırılması ile başlamıştır. İlçe, kuruluşundan bu yana farklı etnik, kültürel, dini, dilsel ve mimari unsurlara ev sahipliği yapmış ve bunları heterojen bir şekilde birleştirmiştir. Beyoğlu, bugüne kadar gerçekleştirdiği değişikliklere rağmen, tarihi niteliklerini ve yoğunluğunu koruyabilen, İstanbul'un diğer tarihi bölgelerine göre daha az fiziksel doku deformasyonuna sahip ilçelerden biridir. Çalışma kapsamında; 19. yüzyılın ilk yarısında yapıldığı düşünülen 6. bölüm / blok 347 ve parsel 11 üzerinde yer alan yapı kabartma çalışmaları yapılmış, restorasyon önerisi üzerine tartışmalar dahil edilmiştir. Oldukça hasarlı ve ihmal edilmiş bir durumdan, binanın inşa tarihinden itibaren büyük bir onarımdan geçmediği anlaşılmaktadır. Planlama ve cephe özellikleri açısından dönemin mimari anlayışına ışık tutan evi daha iyi taramak için fiziksel ortamda bilimsel ölçüm ve dokümantasyon yöntemleri kullanılarak hazırlanan mevcut durum analizleri yer almaktadır.

**Anahtar Kelimeler** İstanbul, Beyoğlu, Kabartma, Restorasyon, Kentsel Doku

## 1. Introduction

Istanbul, which is always one of the most popular centres as it is the capital of two great empires such as Byzantine and Ottoman, is one of the most densely populated places in the world even today [1]. Beyoğlu, one of the oldest districts of Istanbul, has undergone rapid changes in social, economic and physical terms for centuries [2]. 19. With the Westernization movements that started to be seen in the century, the changes and innovations in many areas directly

affected the architecture. Multi-storey residential buildings that emerged in the region during this period began to be built as masonry and have mostly survived to the present day. The general characteristics of the buildings are that they are built as stone/brick or ground floors as stone, upper floors as wooden and three or four floors.

when viewed from this aspect, the transformation in Beyoğlu in the 19th century, reveals that there is an effort to find a solution to a search for development, rather than the

existence of a westernization effort. Producing an architectural having the elements of architecture in European capitals can only be an indirect result of this effort [3]. When the current situation of the region is analysed, it is seen that the functional changes have been brought to the agenda as a result of the differentiation of the population living in the region with social, cultural and economic reasons, from this situation especially the civil culture heritage samples have been negatively affected, and be formed conservation problems in neighbourhood and street scale in the architectural textures have been damaged and the existing texture integrity has been damaged in this direction [4].

Housing life is the core of this multi-coloured culture. The house shaped by the needs, traditions and cultures of some nations Turks, and such as Greeks, Armenians and Jews settled in Anatolia, and the furniture they used in it, and the reinforcement elements that are of great importance in terms of architecture, and led to emerge have a general architectural features within the Ottoman Empire [5]. Societies reflect their identity to the extent that they can preserve their historical and cultural values and combine these values with today's lifestyles. The way to prevent these values from disappearing is to keep them alive by protecting historical environments and reintegrate into society [6]. Beyoğlu 19. In order to analyse his life in the century and to understand the conditions that make up the architecture of this century, readings were made from written documents on Beyoğlu [7].

Within the scope of study; Beyoğlu region has been briefly introduced and its social and physical structure has been examined from the 19th century to the present day. Beyoğlu district, which is located on 6 section, block 347, 11 parcel no, the building is thought to have been built in the first half of the 19th century, and its relieve studies have been carried out by taking measurements through triangulation method is one of traditional measurement methods. The building whose relieve study was completed, the material and deterioration/damage analyses were completed, and the building problems were identified. The restitution study was created by examining the current situation analyses prepared by using scientific measurement and documentation methods in the physical environment, and the street texture where the building is located. With the restoration project, the necessary repair, consolidation, integration, renovation and usage intervention suggestions have been developed in order for the building to function in line with the renewed needs.

## 2. Historical Development Of Beyoğlu

The name of this settlement, which was first known as Galata (Sykail), then Pera, and later Beyoğlu, was expressed differently after the conquest. In some sources, it was stated that the name "Beyoğlu" was given because of Louigi Giritti's (1454-1538), who was originally a son of Dojoğlu and one of the relatives of Ibrahim Pasha, palace here [8]. In the first half of the 16th century, Beyoğlu was a garden area with a couple of buildings. There were small Turkish settlements in the neighbourhood of Galata Mevlevi, the Şahkulu Masjid, Asmalimescit and Ağa Mosque with the

community in Galatasaray, which was used as the Conscript Boys Barracks in Beyoğlu at this time [2]. With the 17th century, the region known as "Pera Vineyards" begins to develop as an extension of Galata. As the name suggests, Pera, where vineyard houses are located, becomes a place where embassies are settled as a result of the development of diplomatic relations with the states in the West. With the embassies shifting to Pera, the residents living between the Galata tower and the beach, and the Europeans and non-Muslim groups coming for trade begin to gather in the region [9]. The development of Beyoğlu 18. It has gained great momentum in the century. Especially III. Many Europeans who came to Istanbul for various reasons and the relations that started to increase with the Europeans in Selim period, played an important role in the development and crowding of Beyoğlu. With the crowding of the population, the constructions of Beyoğlu in the direction of Taksim started to increase [10]. 19th century; It is a period in which Beyoğlu and Galata adopt a western lifestyle, lead a French life, have street and writing language in French, have different entertainment places and shops, and have different dressed Europeans on their streets, and Ottoman intellectuals have a relationship with Europeans [11]. The residences of the region are the city houses that develop on narrow parcels with the doors opening directly to the street, the ground floors containing the same window arrangement as the upper floors, and the small stones at the back. Bricks are occasionally observed in plastered or stone facades. Iron bars on windows and balconies, embellishments such as wiper pediments plast etc. are on the overall facade, reflect an understanding that repeats historical forms [6].

## 3. Building Techniques And Damage Detections

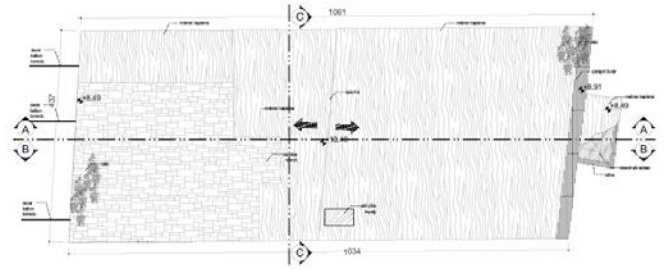
### Construction Technique

It is estimated that the work was made in the early 1900s. Building basement, ground floor, 1. It consists of the floor and 2nd floors. Basement solid stone + brick wall, ground floor +1 +2 outer walls, brick inner walls are plastered with wooden carcass + plasterboard. However, in time, the ground floor walls were covered with brick and wood OSB. Floors and ceilings are wood covered. However, openings were locally closed with wallpapers.

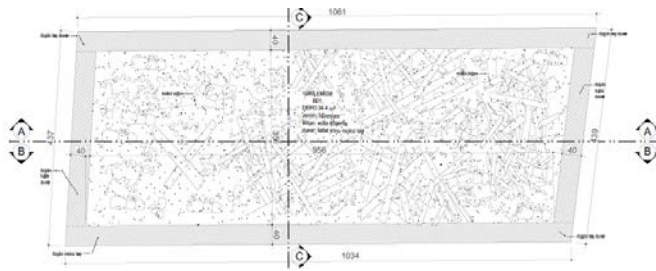
It is a multi-storey residence, which is a new formation in Ottoman architecture, designed under the influence of western forms and planning principles, and the effect of Ottoman character is having a bay windows as a plan scheme. Due to the narrow parcel and adjacent structure, two facades are used and the room groups on both facades are designed, transitions to these rooms are provided on the ground +1 floor with a sofa and on the second floor through the narrow corridor.

1 ÖZGÜN TAŞ DUVAR	2 AĖŞAP BAĖDADI DUVAR	3 ÖZGÜN TUĖLA DUVAR	4 AĖŞAP DUVAR	5 AĖŞAP KIRIŞLEME SİSTEM
6 AĖŞAP ELEMAN	7 AĖŞAP OSB	8 SIVA+BOYA	9 ATEŞ TUĖLASI	10 SIVA+BOYA
6 SIVA KAYBI	7 NEM RUTUBET	8 MOZAİK KAP. YOSUNLANMA	9 YOSUNLANMA	10 BİTKİ OLUŞUMU

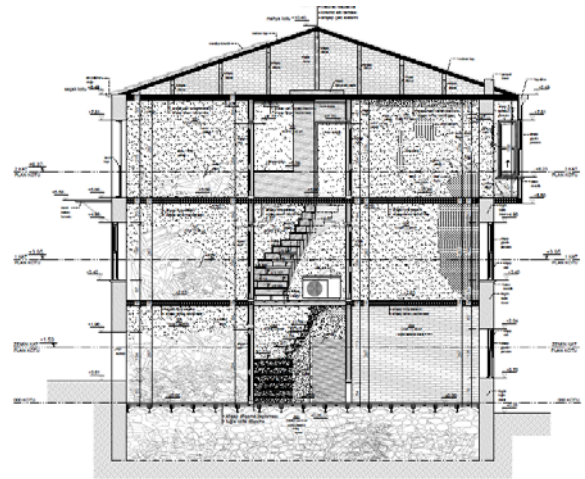
**Fig. 1.** Material Legend.



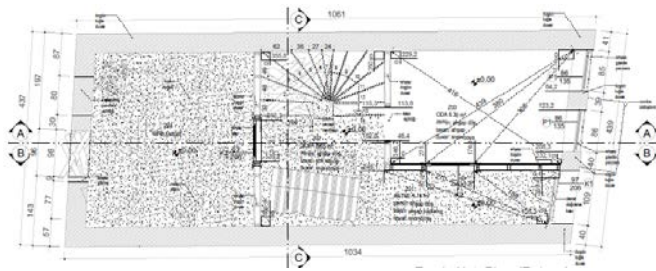
**Fig. 6.** Roof Plan "Survey".



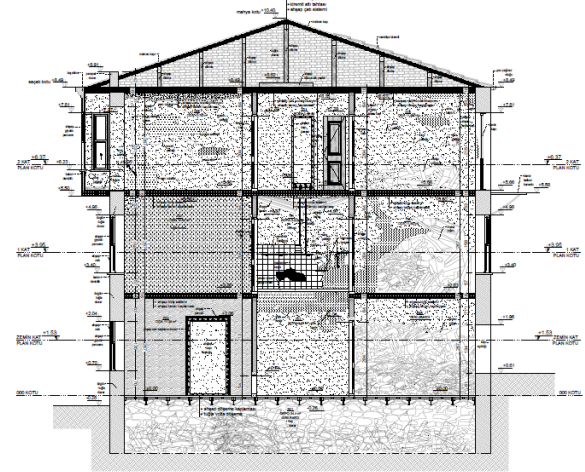
**Fig. 2.** Basement Floor Plan "Survey".



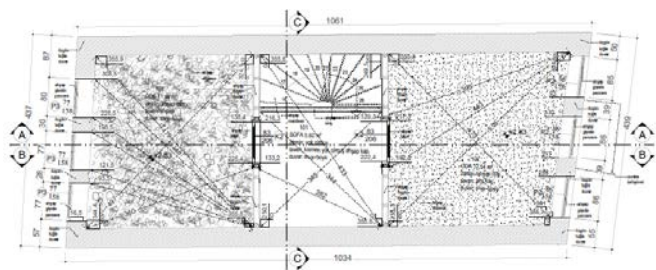
**Fig. 7.** Section A - A "Survey".



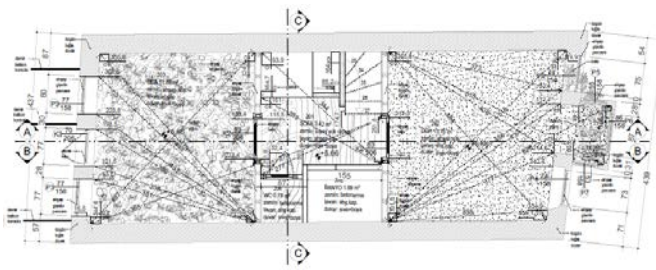
**Fig. 3.** Ground Floor Plan "Survey".



**Fig. 8.** Section B - B "Survey".



**Fig. 4.** First Floor Plan "Survey".



**Fig. 5.** Second Floor Plan "Survey".



Fig. 9. Section C - C "Survey".



Fig. 10. Street Front / Rear Side "Survey".

**Damage Assessment Report**

The structure has been exposed to repairs, unqualified additions, moisture and organism activities, and has become unusable in time. There are debris on all floors. For this reason, the building has been left to putrefaction. The damages in the building were collected under 17 headings; were processed on plan, section, view drawings. The structure is constantly exposed to water due to the lack of roof tile cover and insulating is not sufficient. For this reason, partial collapses occurred in the 2nd floor roof panelling's.

Abrasion, material losses and moisture decomposition occurred in wood material. The woods in the dividing walls, stairs, ceiling and floor have lost their carrier, deflection and deviations are seen horizontally. These deteriorations in wood are evaluated in the structural deterioration head. The woods in the room doors, windows, ceilings and floorings were evaluated under the abrasion head. Cast mosaic stairs,

ceramic coatings, infill walls, air conditioners, timbers used for support and transition, roof membrane coating were evaluated under the unqualified repair head. Plaster losses and partial separations are observed on the building walls. Mossiness and vegetation occurred in the non-plastered parts of the rear front wall of the building.

**4. Restoration Approaches**

It is estimated that the building was made in the early 1900s. Period properties were researched, and a restoration project was proposed in accordance with its original planning and facade.

**Construction Technique**

Building basement, ground floor, 1. floor and 2. It consists of floor. The construction technique of the building is a composite structure system using masonry brick and wooden carcass system. Jack arch is used on the basement floor and wooden flooring system is used on the other floors. There are original brick coverings on the facade of the building.

**Planning**

- The structure must be suspended before the restoration of the building begins. After all the rubble in the building is cleaned;
- During the restoration studies, In the applications to be made, the application should be made according to the original construction technique. All kinds of materials to be proposed should be compatible with the original material, will not be overloaded on the current construction, and must be distinguishable from the original. Also, it should be ensured that every usable structural element can be used again after necessary reinforcement. Missing structural elements must be manufactured according to their original details and must be fixed in place.
- The basement (B01) floor of the building is also considered as a storehouse. Wooden stairs were proposed for going down to the basement floor.
- Instead of the iron door at the entrance of the ground floor, a wooden door was proposed. All the special coatings in Room (Z03) on the right axis of the entranceway (Z01) by removing, original carcass walls should be revealed. Since it is thought that the wooden door in the entrance of this room is not original, it was suggested to provide entrance in the room through the wooden door like the other two floors, in anteroom (Z02).
- Terrazzo staircase on the ground floor in hall (Z02) by removing, wooden staircase was proposed instead of it. The carrier of the wooden stairs, which is available between the first and second floors, will be checked and the problematic parts will be repaired. However, if it is necessary, the original wooden stairs will be removed, and it has been stated that a wooden ladder system should be installed in the same form and section.
- The ground level of the backyard, which was raised in time, has been reconstructed and restored to its original



form. Thus, the door opening in the Z04 Room was reconstructed and processed for restoration projects with its wooden door. Again, the window opening in this room was reconstructed and processed to restoration projects in order to complete its originality with the wooden guillotine window.

- The wooden carriers should be checked by removing the plaster of the wooden carcass interior divider walls of the building. Repairs and reinforcements must be made in the problematic areas identified. Wherever it is necessary, it is appropriate to remove the wooden elements and replace them with new elements in the same section.

- In all wooden elements, impregnation and protective varnish should be applied against rotting and insect.

- All interior room doors of the building should be renewed in the form of existing wooden doors.

- It was determined that all ceiling and floor coverings of the building are original. However, in its current state, there are visible deflections on the floors and ceilings. Structural parts that need to be changed during restoration study, by determining, should be renewed in original material and form.

- The roof system of the building by checking, should be repairs and reinforcements should be made for the structural elements that have lost their carrier properties. Where necessary, it should be replaced with materials in the same form and section. Impregnation and varnish should be applied to all wood elements against rotting and insects. Necessary water and heat insulation should be done and covered with pantile.

- The plaster of the masonry brick walls of the building by removing and the knitting and joints checking, necessary repairs and reinforcements should be made in the problematic areas identified, and the plasters should be renewed.

- Building 1. By removing the large ceramic coatings applied in time, Hydraulic lime mortared plaster should be applied to the floor sofa walls.

- After the plant and moss formed on the back of the building are brushed and cleaned by mechanical methods, hydraulic lime mortared plaster should be applied.

- It is recommended to use a mortar with hydraulic lime binder on the basement walls where joint spacings are seen.

- During building restoration studies, every stage of repair interventions should be documented before and after the intervention.

- During the practice, the implementing firm should be guided and supervised by the technical staff created.

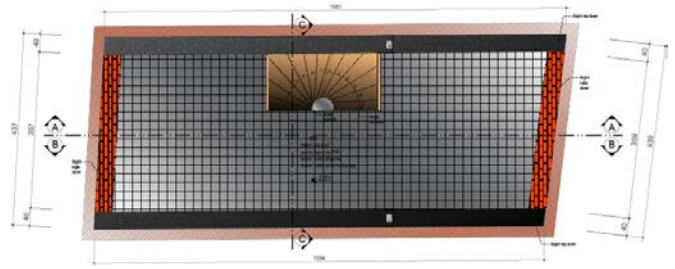


Fig. 11. Basement Floor Plan "Restoration".

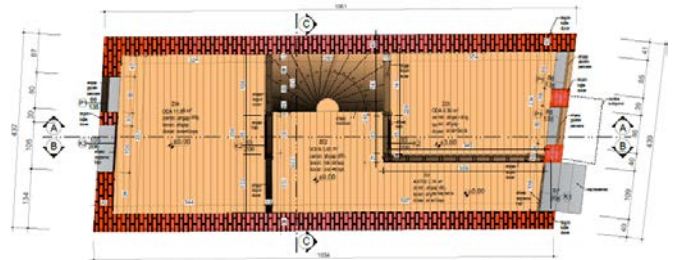


Fig. 12. Ground Floor Plan "Restoration".

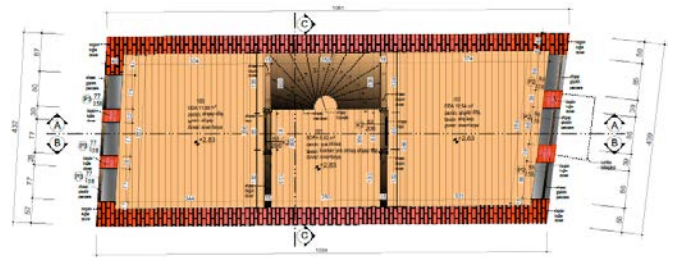


Fig. 13. First Floor Plan "Restoration".

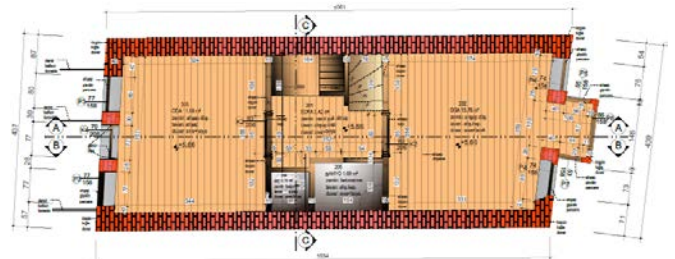


Fig. 14. Second Floor Plan "Restoration".

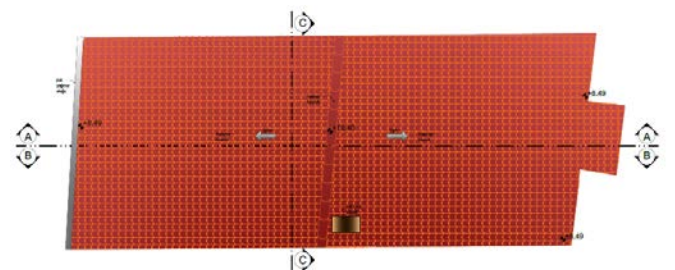


Fig. 15. Roof Plan "Restoration".

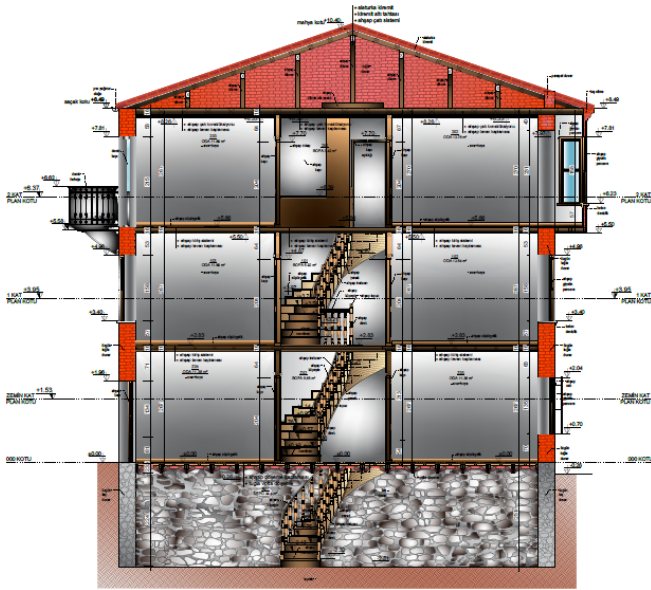


Fig. 16. Section A - A " Restoration ".

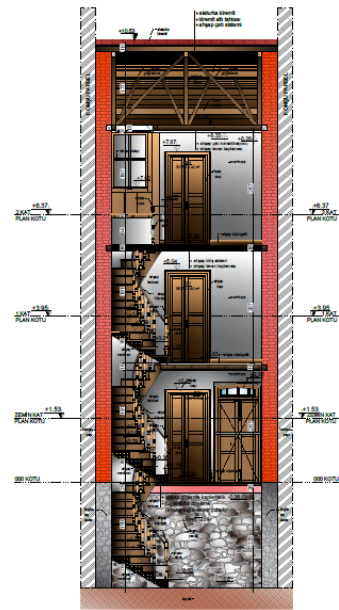


Fig. 18. Section C - C " Restoration ".

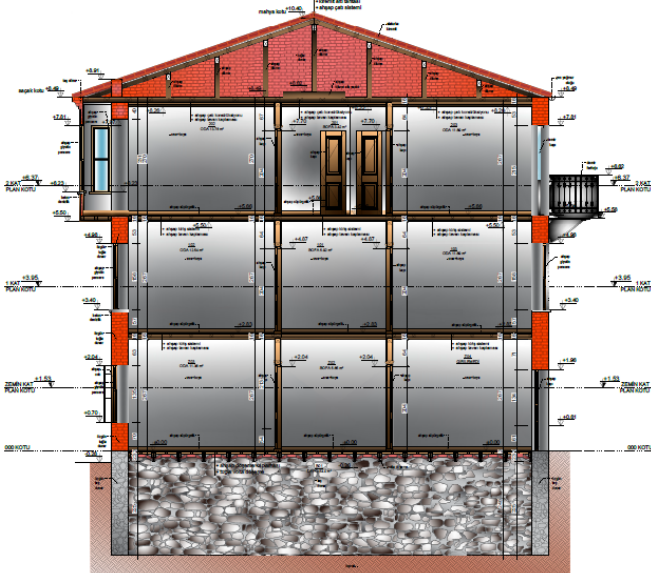


Fig. 17. Section B - B " Restoration ".



Fig. 19. Street Front / Rear Side"Restoration".

## 5. Conclusion And Recommendations

The masonry building, which is thought to have been built in the first quarter of the 19th century, was built as a multi-storey house, a new formation in Ottoman architecture. It was designed under the influence of western forms and planning principles, and masonry construction having a bay windows has Ottoman character as a plan scheme, has survived by preserving its period properties.

In our report prepared within the framework of the restoration project, the architectural features of the building have been defined and attention has been drawn to its place in the masonry building samples have the period properties. The assessment of the building has been determined using environmental documentation methods and the determinations have been based on architectural data that has survived to the present day. Within the scope of the study,

taking into account the damage assessment and restitution project that occurred in the structure determined, the restoration project was developed within this framework. It is concluded that the masonry structure, which has reached the present day in an original way, reflects the architecture of the period especially in terms of carrier brick body walls and timber carrier partition walls; in the restitution study, the features of the building were handled in determined titles and defined by comparison with similar examples.

The masonry structure studied is one of the important building that includes the period features, as explained in our report. The life of the building will be extended through the restoration project and implementation within the framework of the principles of conservation and will be regained to today's society and future generations as a living witness of a period.

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