



Adaptive Reuse Management For Vintage Arcade Markets - Bab El-Louk Market

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Abstract

Egypt has witnessed a great development in its architectural products, especially from the beginning of the 19th century until the first half of the 20th century. One of these products is arcade markets, which have been neglected severely in recent years, so this paper focused on these markets and how they can be reused. This paper studies how to preserve, reuse and develop these markets, determining the problems they face and how to solve them because of these markets have historical value and represent an important architectural and economic development in this important Egyptian era. It aimed to solve the problems and the reasons for the deterioration of these markets generally and Bab El-louk market especially using modern methods of preservation and the criteria used in the adaptive reuse of similar vintage markets in Europe, after making a comparative analysis. The study hypothesis was that although the development of cities and the emergence of more sophisticated and modern commercial activities but that didn't affect the importance of the vintage arcade markets.

Keywords: Adaptive reuse, Arcade markets, Heritage, Preservation, Bab El-louk Market.

1. INTRODUCTION

New commercial patterns were introduced in Egypt from the beginning of the 19th century until the first half of the 20th century, and a great development took place in its architectural forms, including arcade markets. These markets were established in the heritage neighbourhoods for the purpose of regulating the commercial uses of daily commodities, such as the Bab El Louk market.

These historical markets are currently witnessing severe neglect at the architectural, commercial, developmental, cultural, and societal levels, so it was necessary to preserve these markets, which are a witness to a very important historical era and their historical identity, and to set standards and mechanisms for methods of preserving, developing, and reusing them, and to try to achieve ways of sustainability through the process of reuse as one of the methods of architectural preservation [1].

1.1 Problem

These distinguished markets are exposed to neglect at the level of both the building and the function, as well as the relationship of the building with the surrounding environment and its interaction with it, which threatens the survival of these buildings with what they represent of heritage, architectural, and economic values.

1.2 The Main Objective of the Research

The main objective is to extract international standards for vintage arcade market adaptive reuse by making an analytical comparison between several different similar international case studies, and developing a proposal for Bab El-Louk market adaptive reuse (as a type of local vintage arcade market in Egypt) in the light of these standards in order to achieve sustainability for such markets and keep pace with the requirements of the times.

1.3 Research Methodology

Three types of research methodologies were used in this research, as follows:

- Analytical method (a cross-case comparison between different case studies leads to specific results and a framework)
- Descriptive method (Bab El-Louk market data gathering, then organising, analyzing, and interpreting these data)
- Applied method (applying framework that was concluded from the cross-case comparison on Bab El-Louk market)

2. CASE STUDIES

In this section, different case studies in Europe were selected according to the following criteria:

- Markets should have heritage value.

- Markets should be arcade building type.
- It must have been established in the 19th or early 20th century (the same period this paper is focusing on).

Then a cross-case comparison, based on the definition of authenticity as presented in operational guidelines for the Implementation of the WHC [2], was occurred. The analysis is presented in the form of a matrix. The five aspects of authenticity that were used in the analysis were: form and design, materials and substance, use and function, location and setting, and spirit and feeling. As these aspects are rather generic, subcriteria were added for the following three aspects:

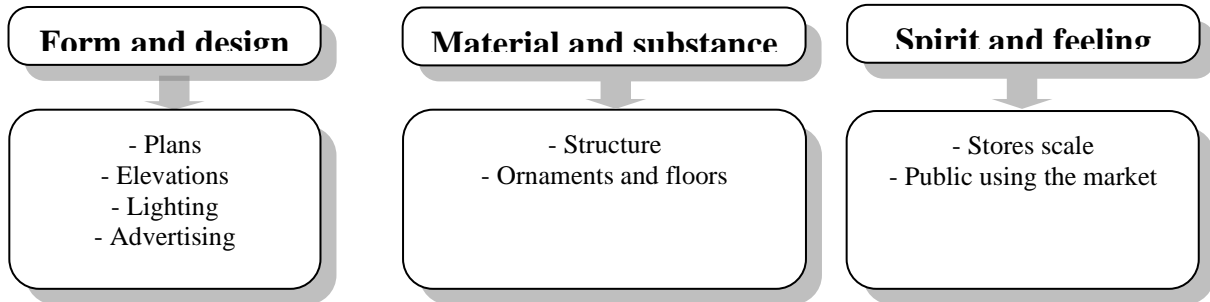

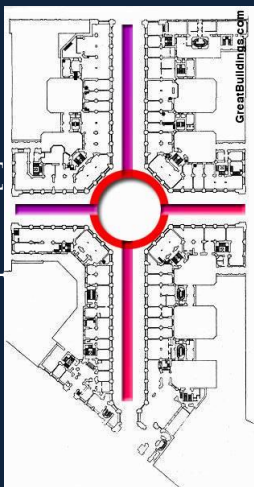



Fig. 1. Subcategories for Three of Authenticity Aspects. Source, researcher

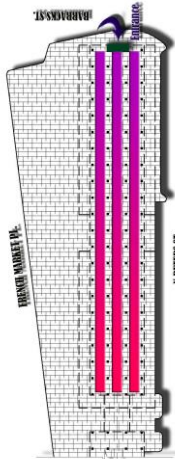
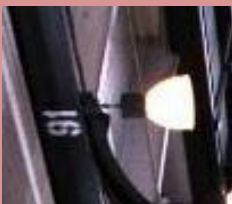
2.1 Case Studies Analyzing



The researcher chose three different European arcade markets to be analysed: the first is the French Market, which has been built for more than 200 years in New Orleans, Louisiana (US), Galleria Vittorio Emanuele in Milan, Italy, and Santa Catherina Market in Barcelona, Spain.

Table 1. European Case Studies Comparison

<p>Santa Catherina Market</p>	<p>The market consists of several randomly distributed dynamic passages, and the entire market is covered with a roof of dynamic shape and composition. The reuse process included changes to the plan.</p> 	<p>Elevations were preserved as they were, but a new dynamic roof was added.</p>	<p>No information is available.</p>
<p>Galleria Vittorio Emanuele [2]</p>	<p>The market follows the cross shape, as it consists of two main intersecting passages, each covered with a glass arch ceiling, and their intersection with an octagonal glass dome. The plan was preserved as it is in the reuse process [5].</p> 	<p>Elevations were preserved as they were.</p>	<p>Original lighting fixtures were preserved.</p> 

(continued)

<p>French Market</p>	<p>The market follows a linear pattern and consists of three covered passages. The reuse process included changes in both the used materials and the size of the market.</p>			<p>The market was rebuilt with new elevations.</p>	<p>New lighting fixtures have been used in a contemporary design.</p> 
<p>Market Aspect</p>	<p>Plans</p>		<p>Elevations</p>	<p>Lighting</p>	
<p>1. Form and design</p>					

<p>Advertising is at the top of the storefront, but it is not standardised across the entire market.</p> 	<p>A new steel structure was used for the market in the last renovation process in 2005.</p>	<p>In 2005, the ornaments of the main elevations were preserved as they were, and multicoloured mosaic pieces were added to the ceiling of the market that did not exist before.</p>	<p>Uses have been added to the market, such as museum, educational, and recreational use.</p>
<p>Advertising is in a visible area at the top of the storefront, and each store puts its logo or name in a golden colour on a black background.</p> 	<p>The steel structure of the market has been preserved to a large extent [4].</p>	<p>In the 1960's, the terrazzo flooring has been restored. No further information on the techniques used.</p>	<p>The functional programme of the market has been preserved to a large extent, but the residential units were replaced by a hotel and administrative offices, and some official functions were added, such as the municipal office and the urban centre.</p>

(continued)

<p>No information is available.</p>	<p>Advertising</p>		<p>1. Form and design</p>
<p>A new steel structure was used for the market in the last renovation process in 1937 [3].</p>	<p>Structure</p>	<p>In 1822, the pavement material was replaced with stone instead of brick. Domes and columns were added to the butcher market in 1937, and one side of the columns in the vegetable market was demolished [3].</p>	<p>2. Material and substance</p>
<p>The functional programme of the market has been preserved to a large extent with the development of systems for some of these functions that serve it, such as the development of new cooling and drainage systems for meat and fish shops [3].</p>	<p>Ornaments and floors</p>		<p>3. Use and function</p>

<p>The original location of the market has been preserved as it was.</p>	<p>The market represents an urban connection between Piazza del Duomo and Piazza della Scala, so the original location of the market has been preserved as it was [4].</p>	<p>Each shop takes specific bay. No information is available about the original status of the shops.</p>	<p>The stores are no more than three bays wide. Some stores also occupy the mezzanine floor.</p>	<p>* Local visitors: shopping, visiting cafés and restaurants, and social networking. * Tourism: shopping and visiting cafés and restaurants. * Students: educational visits.</p>	<p>* Local visitors: shopping, visiting cafés and restaurants, and social networking. * Tourism: shopping and visiting cafés and restaurants.</p>
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<p>The original location of the market has been preserved, but other buildings affiliated with the market have been built in other locations adjacent to the original market at different times.</p>	<p>The shops take specific bays, and each store or bay is numbered. No information is available about the original status of the shops.</p>	<p>* Local visitors: shopping, visiting cafés and restaurants, and social networking. * Tourism: shopping and visiting cafés and restaurants.</p>
<p>4. Location and setting</p>	<p>Stores scale</p>	<p>Public using the market</p>
<p>5. Spirit and feeling</p>		

- Authentic value has been preserved as it was.
- Authentic value has been preserved with some changes or updates.
- No sufficient data is available, or authentic value has been replaced.

2.2 Comparison Results

- Regarding plans: The plan was preserved as it was in most pre-mentioned markets, except for the French market, which was destroyed more than once due to an earthquake, fire, or hurricane. In addition, some modifications were added to the original plan for the Santa Catherina market.
- Regarding elevations: In all pre-mentioned markets, the original elevations were preserved as they were without any modifications, with the removal of encroachments, if any, as happened in the case of Al-Hamidiyah Market. However, in Santa Catherina Market, despite the preservation of the facade as it was, a new element that did not previously exist was created. It is the dynamic shape of the roof covered with coloured mosaic pieces that adds attractiveness to the market.
- Regarding lighting: In all pre-mentioned markets, new lighting fixtures were used that did not exist previously, except in the case of the Galleria Vittorio Emanuele market, in which the same original lamps were used when the market was renovated.
- Regarding advertising: In most pre-mentioned markets, advertising is in a visible area at the top of the storefront.
- Regarding structure: The building structure was preserved as it was for some markets whose condition and construction function were not affected by natural disasters. Except in the Santa Catherina market, a new steel structure that did not exist previously was used to support the newly created roof.
- Regarding ornaments and floors:
 In most pre-mentioned markets, the ornaments were preserved as they were. But floors have been replaced with new ones.
- Regarding use and function: The functional programme of the pre-mentioned markets and its uses were preserved as they were, except that some new uses were introduced along with the original ones for the purpose of economic and tourism motivation.
- Regarding location and setting: The location of the market is a historical and social value in itself, so it was preserved as it is in all the selected models.
- Regarding store scale: The scale of the shops and their bays has been preserved as it was.
- Regarding public using the market: All reuse or renovation processes aimed to preserve the local visitor and increase his turnout and association with the market, in addition to attracting tourists in different ways and with different motivations.

In the end, these results represent the framework that the researcher will apply in his proposal for Bab El-Louk market renovation and reuse.

3. BAB EL-LOUK MARKET ADAPTIVE REUSE

3.1 History of Bab El-Louk Market

The Bab El Louk market is more than a century old. The market was built of a distinctive steel structure and bricks, and the market's distinguished location and ease of access helped it attract customers, whether foreign or Egyptian. It is worth mentioning that at that time the care of the market was superior; it was cleaned three times a day, a well-designed ventilation system was introduced, and cold tanks were allocated to protect goods from putrefaction. Bab Al-Louk Market quickly turned into a commercial centre in the heart of the city. The market was built on a plot of land owned by Joseph Aslan Qatawi, a national capitalist pole belonging to an Egyptian Jewish family, in Al-Falaki Square, a location near the end of the Helwan train line, which serves the areas south of Cairo, in addition to eight tram lines that intertwine in the square and connect different neighbourhoods of Cairo [3&4]. The market was opened to the public on May 1, 1912, and its opening was announced in more than one newspaper, such as the Cairo newspaper on April 14, 1912, and in the "Al Borsa Al Masrya" newspaper on May 1, 1912 [6].

3.2 Bab El-Louk Market Existing Situation

3.2.1 Plans

The ground floor plan was designed to contain about 150 shops (butchery, vegetables, fruits, dairy products, fish and Poultry, etc.), and it had five entries for consumers to enter: one from Tahrir St., leading to the main passage of the market; two doors from Al-Falaki St.; and two from Mansour St., connecting to the two side passages of the market. The first floor included about 50 offices. Then changes and encroachments took place on those plans over time [7], as shown in Figs. 2-5.

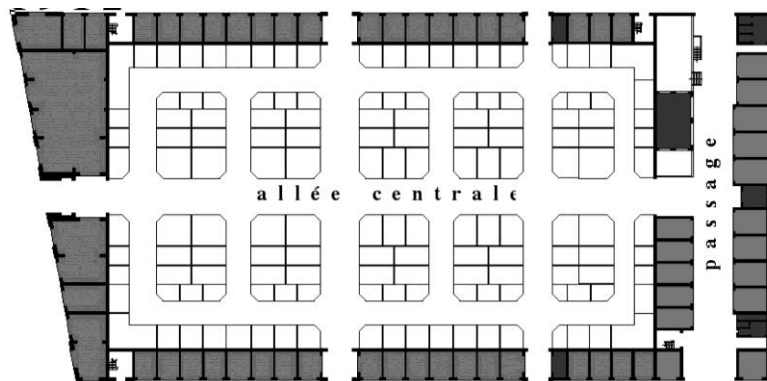


Fig. 2. Bab El-Louk Market's Ground Floor Plan in 1912. Source, [7]

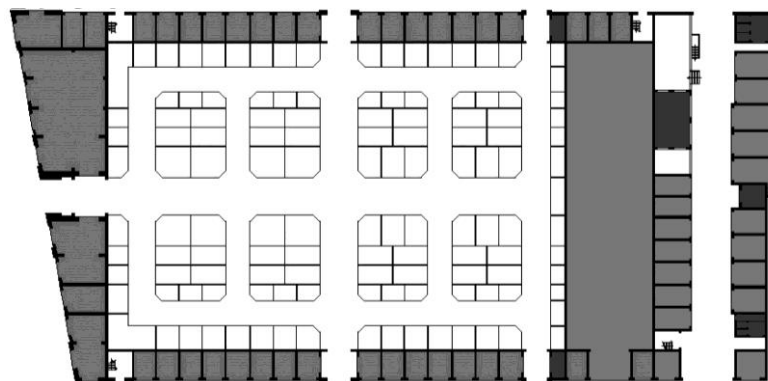


Fig. 3. Bab El-Louk Market's Ground Floor Plan in 1930. Source, [7]

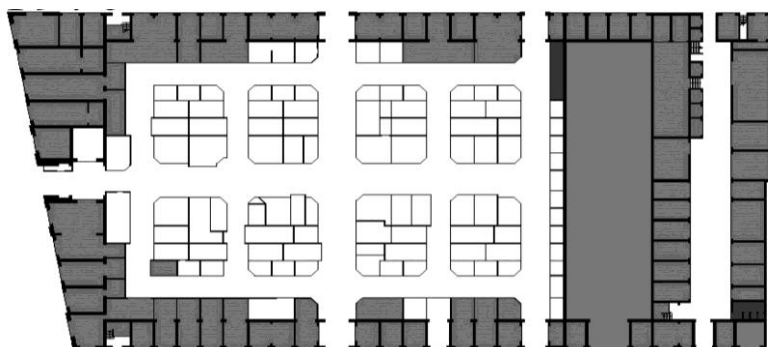


Fig. 4. Bab El-Louk Market's Ground Floor Plan in 1970. Source, [7]



Fig. 5. Bab El-Louk Market's Ground Floor Plan in 1995 till now. Source, [7]

3.2.2 Elevations

Bab El Louk market, when it was built in 1912, had simple, consistent, symmetrical elevations. Simple and elegant classic motifs, inspired by the five-pointed arches of Islamic architecture, were used. In addition to using distinct forms with different heights, like the upper form that differentiates the main entrance.

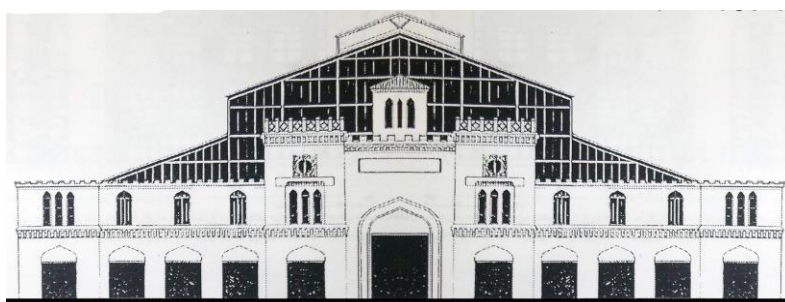


Fig. 6. Bab El-Louk Market's Main Elevation in 1912. Source, Researcher

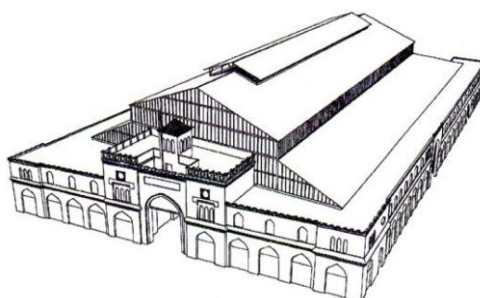


Fig. 7. Bab El-Louk Market's Perspective in 1912. Source, [7]

In 1942, the market was sold to a new owner, who in turn built a new floor (the second floor) to increase market revenues. The elevations of this floor were consistent with the original market elevations, and the same classic motifs as on the first floor were used. Then, in the sixties, the shoe industry and trade flourished, and the sewing ateliers and offices on the first floor turned into shoe stores. The manufacturing workshops located on the second floor needed larger areas, so the tenants, in agreement with the owners of the market, built an additional floor that was completed in 1970, and this time, the elevations of this third floor were random and different from the original elevations style (different in mass form, shape, and size of its openings) [7].

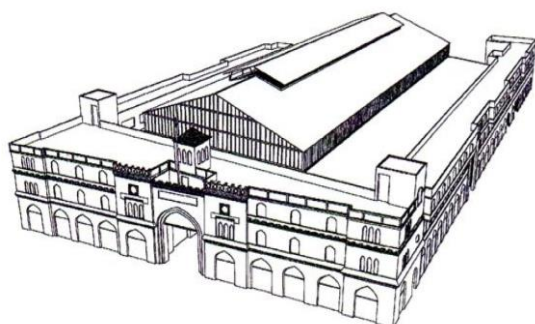


Fig. 8. Bab El-Louk Market's Perspective after Adding 2nd Floor. Source, [7]

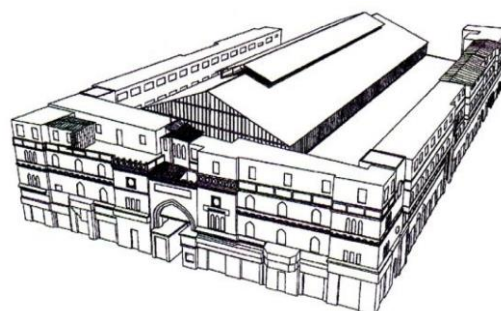


Fig. 9. Bab El-Louk Market's Perspective after Adding 3rd Floor. Source, [7]

3.2.3 Lighting

There is no further information on the original lighting fixtures that were used when the market was opened to the public in 1912, but the existing lighting fixtures were used individually and randomly, as shown in Fig. 10.



Fig. 10. Existing lighting fixtures on the market. Source, Researcher

3.2.4 Advertising

Each store has its own different logo in design, size, location, and materials, resulting in a distorted and indiscriminate advertising system, as shown in Fig. 11.



Fig. 11. Existing advertising system. Source, Researcher

3.2.5 Structure

Market's main structural system is a standing steel structure in lofty condition and a steel truss roof in good condition, which needs only a renovation process, as shown in Figs. 12, 13.

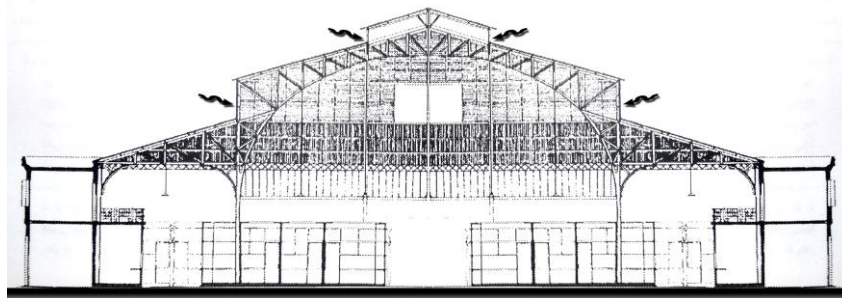


Fig. 12. Section in Bab El-Louk Market. Source, Researcher



Fig. 13. Market's Steel Structure is in good condition. Source, Researcher

3.2.6 Ornaments and floors

The market suffers from deteriorating floors and drainage system, in addition to cases of encroachments on the internal and external facades, as shown in Fig. 14.



Fig. 14. Deterioration of Floors and Drainage System. Source, Researcher

3.2.7 Use and function

On the ground floor of the market, there is a group of external shops in a U shape. These stores often need display areas, such as electronics, a pharmacy, clothing stores, a tourism company, restaurants, cafes, a supermarket, etc., and a group of internal shops in a grid selling vegetables, meat, poultry, dairy, etc., Fig. 15 shows ground floor uses and activities.



Fig. 15. Ground Floor Uses and Activities. Source, Researcher

3.2.8 Location and setting

The Market is located in downtown Cairo, in close proximity to Tahrir Square and overlooking Al-Falki Square. The Surroundings of the Market had once been a vital part of downtown due to the tram station that used to be in the square, which has now been turned into a parking garage. The market is bordered by Al-Tahrir Street to the north, Mansour Street to the east, Mohamed Mahmoud Street to the south, and Al-Falaki Street to the west, Fig. 16 shows the location of Bab El-Louk market.



Fig. 16. Bab El-Louk Market’s Layout and Location. Source, Researcher

3.2.9 Stores scale

After recent encroachment, store spaces are uneven and random, not following a given module; this can be clearly seen in pre-Fig. 15.

3.2.10 Public using the market

The current public using the market are only local visitors for shopping, visiting cafés and restaurants, and social networking.

3.3 Bab El-Louk Market Proposed Situation

The methodology that the researcher used in developing the market’s reuse proposal is shown in Fig. 17.

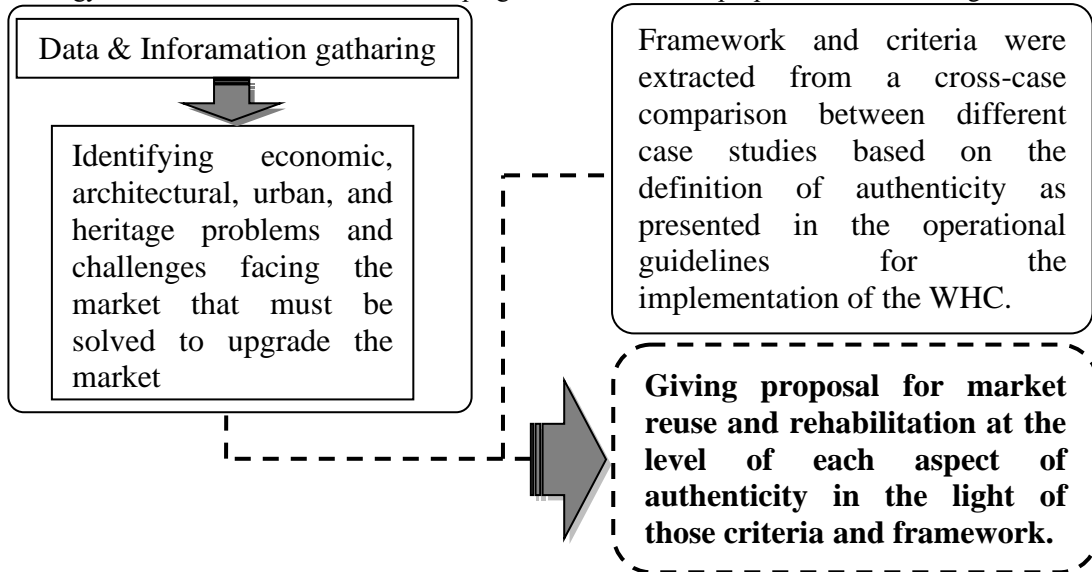


Fig. 17. Proposed Reuse and Rehabilitation Process Methodology. Source, Researcher

3.3.1 Plans

The proposed plans, as shown in Figs. 18-20, are designed to achieve the following: Remove all encroachments; Enlarge the intersection area of the two main axes; Create a basement floor below the internal shop area and use it as a garage with a capacity of about 80 cars, to which the current garage area on the ground floor plan will be transferred; Use a new staircase-elevator core on the main axis; Allocate a part of the back area of the first floor for the administrative committee concerned with managing the market, which was suggested by the researcher; and Finally transfer all workshops, shoes, bags, sewing clothes, and leather shops to the third floor.

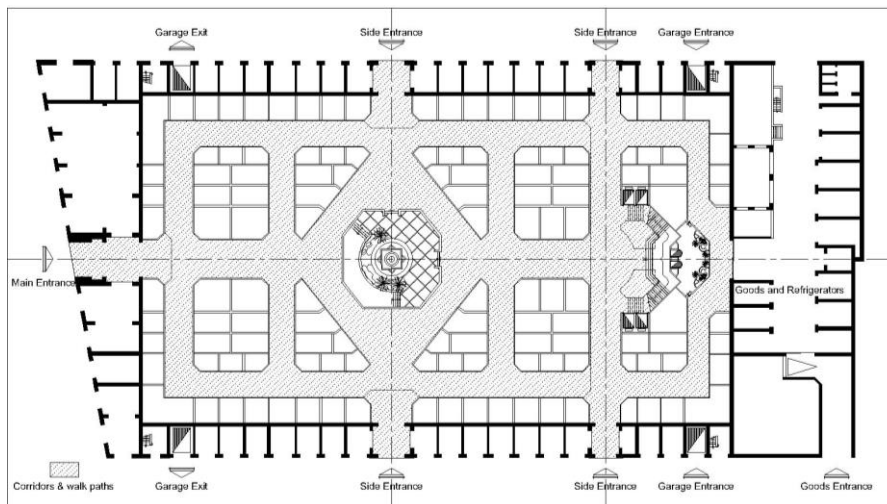


Fig. 18. Proposed Ground Floor Plan. Source, Researcher

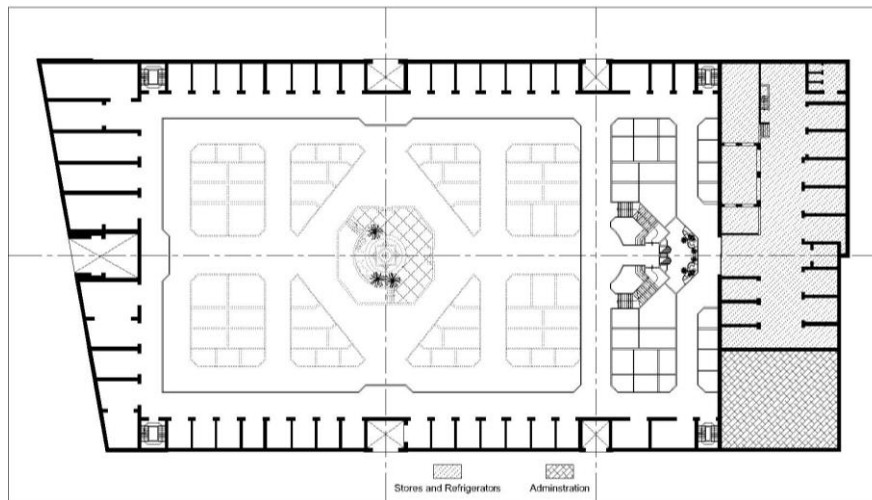


Fig. 19. Proposed First Floor Plan. Source, Researcher

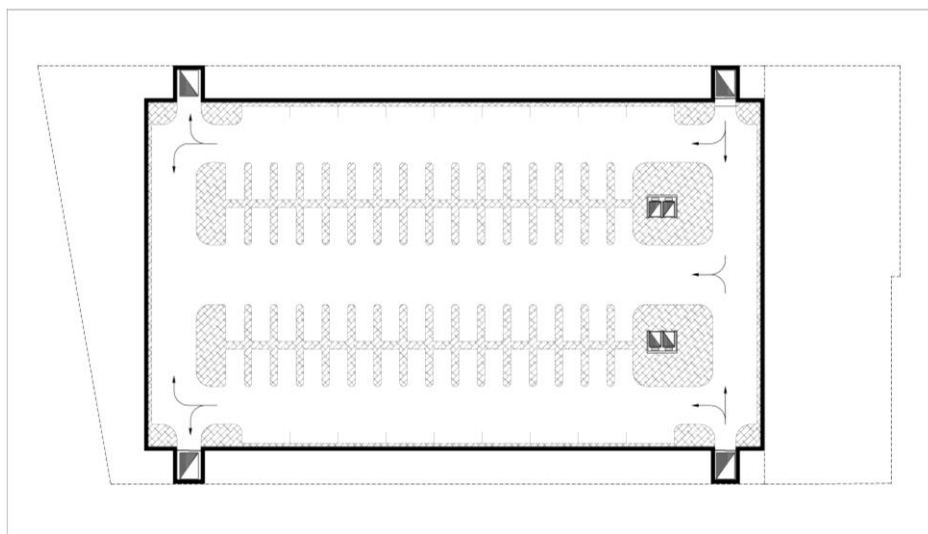


Fig. 20. Proposed Basement Plan. Source, Researcher

3.3.2 Elevations

Preserving the market's original elevation, as shown in Fig. 21, by removing all kinds of encroachments, removing the second floor parapet and building another one above the third floor using the same classic cornice above the first floor parapet, and using the same style and motifs used in the first and second floors in making third floor amendments.

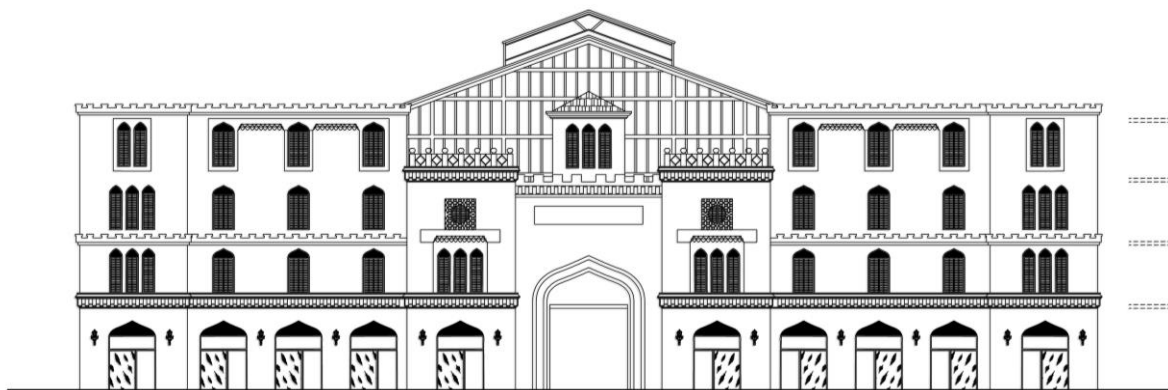


Fig. 21. Proposed Main Elevation. Source, Researcher

3.3.3 Lighting & Advertising

In his proposal, the researcher allocated specific and unified places for the shop's logos and he used unified classic lighting units commensurate with the vintage building, as shown in Fig. 22.

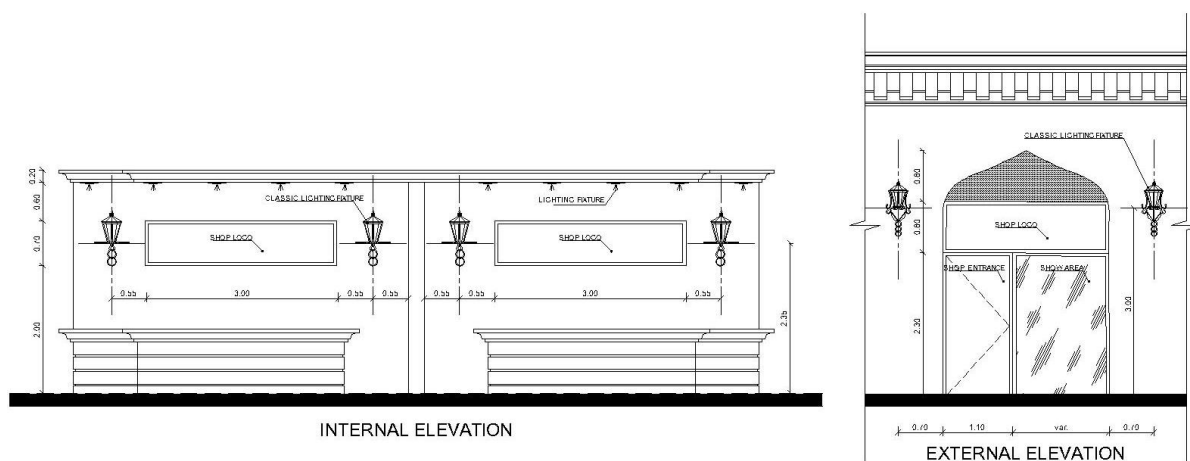


Fig. 22. Proposed Lighting Fixtures & Advertising Location. Source, Researcher

3.3.4 Structure

It will be preserved as it is with the renewal of glass units that cover the level difference.

3.3.5 Ornaments and floors

The market floors and outer pavement will be completely replaced due to their poor condition, and proposed new flooring is shown in Fig. 23.

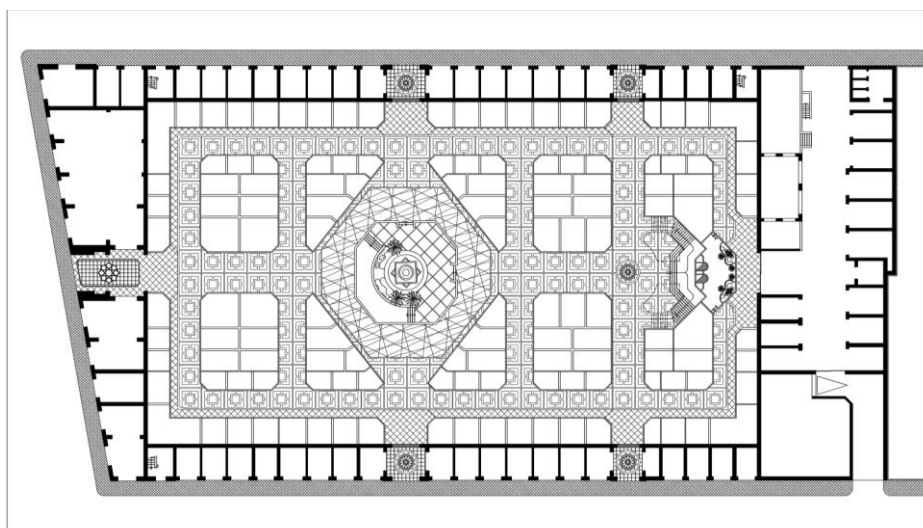


Fig. 23. Proposed Flooring Plan. Source, Researcher

3.3.6 Use and function

The researcher proposed to keep the shops for commodities and food products and allocate them in the internal shops on the ground floor. As for the various other commercial activities (clothes, electronics, restaurants, etc.), they are grouped in the external U-shape shops on the ground floor and in these above them on the first and second floors, in addition to allocating an area to the market management in the second floor. The researcher also suggested moving and assembling shoe and lather industrial workshops and knitting shops in the third floor and exploiting the scarcity of these activities in making and allocating museum visits in order to attract a new category of visitors and tourists interested in traditional crafts, Which leads to increasing the economic return of the market and preserving these activities from extinction.

3.3.7 Location and setting

As previously mentioned, the surrounding area of the Market had once been a vital part of downtown because of its valued buildings and distinguished urban context. This location needs an integrated urban development plan, which the researcher proposes to be in the second stage after the building reuse process.

3.3.8 Stores scale

It is proposed to increase some shops, according to the market administration's decision, to three spans wide shops maximum.

3.3.9 Public using the market

The proposal aims to increase the number and types of people using the market as follows:

- Surrounding residents: targeted daily food needs.
- Consumers outside its area: targeted consumer goods and products.
- Tourists and foreigners: visit the market as it is a valued building with architectural and historical value, and visit heritage crafts in the third floor.

4. CONCLUSION

- Most of the adaptive reuse and rehabilitation processes of heritage arcade markets that take place in different parts of the world preserve most of the original components of the existing building.
- The heritage arcade markets in Egypt are located in distinct locations within the city and near major traffic hubs, in addition to the high economic value of the lands built on them, which all represent added values to these markets in addition to their own architectural and constructive values, but they themselves may represent a threat to these markets in attempts to demolish them to establish other projects instead of them with a greater economic and material return, especially in the absence of the oversight role of the state. So it is necessary to maximise economic returns from such buildings and increase awareness of their different values.

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