

Analytical study of the different strategies for re-using the historical buildings

Safaa Abd El Fattah Soliman Hefnawy

Assistant Professor in Architectural Engineering Department

Pyramids higher Institute for Engineering and Technology – Egypt

Abstract. Preservation of the historic buildings has become a goal for the entire world. In this perspective; reusing the historical buildings has become one of the predominant visions to achieve the preservation. In this paper different strategies for reusing of historical buildings have been analyzed, so that the appropriate function of each historical building can be chosen, based on scientific study and clear objectives. The research will begin with reviewing the methodologies of design solutions for reuse, analyzing the conditions of application of each methodology and the factors influencing the choice. In addition, the research will present the various strategies for reuse of historical buildings, concluding the advantages and disadvantages of each strategy.

Keywords: Historical building, Adaptive reuse and reuse strategies.

1. INTRODUCTION

It had been noticed that the appropriate reusing historical buildings contributed the protection of these buildings through its restoration, then reusing it to ensure its preservation, as well as finding a way to afford its maintenance finance.

This paper focuses on the analysis of various strategies for reusing of historical buildings.

First: Studying the strategies of reusing historic buildings and comparing them in terms of different aspects (social, cultural, environmental, economic), objectives, characteristics, impact on the development of the building and the surrounding area.

Second: Reviewing and analyzing different examples of these strategies applications, and the conclusion of the suitability of each strategy for the selected models.

2. REUSING THE HISTORICAL BUILDINGS:

The adaptive reuse varies from one building to another, which in turn affects the methodology of the required design solutions [1].

2.1 Methodology of the first design solution: No changes in the building:

This trend is applied in case of:

- Reusing the building for the same purpose that has been constructed for it, the most famous

examples of applying this methodology are mosques, historic churches which can be used in worship so far.(Fig.1&2)



fig.1: Amr ibn al-Aas Mosque; the first mosque was built in Egypt and is still used in the same function

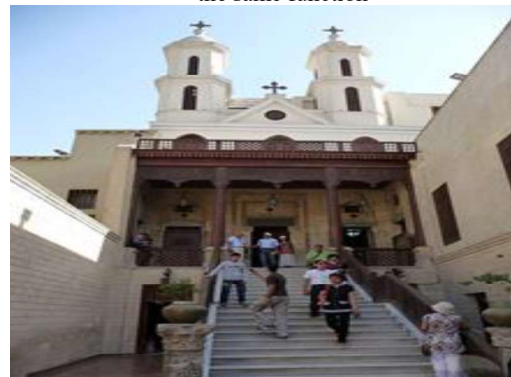


fig. 2: The Hanging Church; it is considered the oldest surviving church in which prayers are still held



fig. 3 & 4: Pictures of Suhaimi House, which was a house and became a tourist shrine

2.2 Methodology of the second design solution:

Making changes in the building:

This trend is adopted if the following conditions apply:

- The original function of the building does not keep up with social variables and / or market requirements.
- The case study building has great historical value and is structurally sound.
- The building has a cultural, heritage or environmental value that supports its preservation.
- Ensure that the proposed function will achieve economic profit for the country.

Factors affecting the range of changes:

- **Proposed function:** The more the design of the historic building is in line with the requirements of the proposed function, the less need of changes [2].
- **Cost:** One of the most important factors affecting the range of the changes is their cost. The choice of the proposed function and the changes required depend on the appropriateness of the budget.

The ranges of these changes are:

2.2.1 Internal changes:

It includes the addition of new elements, or a complete change of the internal spaces.

1. Recruiting of the spaces:

Recruiting of the internal spaces including merging or division of the spaces, in addition of creation of new spaces to accommodate the proposed function [3]. For example the Orsay station in France; as its internal spaces had been recruited and new spaces had been added to be served as Museum galleries and public services.(Fig.5&6)



fig. 5 & 6: Pictures of Orsay station after its conversion to an art exhibits museum and the creation of some spaces to accommodate the new function

2-The internal extension:

This include increasing the interior floors; by exploiting the buildings of high roofs or inside covered courtyards; such as the Washington Post Office Building, this was built in 1899 and is currently used as an international hotel. (Fig.7&8)



fig. 7: A Historical snapshot for the internal space of the old post office in Washington



fig. 8: A picture shows the addition of an escalator in the inner space of the old post office in Washington

3. Total internal change:

This can be applied in the case that the entire historic building is destroyed and cannot be restored. In this case; only the remaining structure or facade is preserved, in conjunction with constructing a new building internally. For example, the residential building that was built inside the Greek-style church in the village of Greenwich, New York, as it had been restored the only remained façade on the street [4]. (Fig. 9)



fig. 9: A picture shows the only remaining façade of the historic church and the new apartment building which was built behind it

2.2.2 External changes:

It is a hierarchy from minor to comprehensive changes, and including external extensions to the building as well.

1- Changing in the facades:

After in-depth study of the design of the building's historical facade, the designer sometimes have to suggest some changes in the openings to fit the proposed function of the building. For example, the Public Library in Boston, significant changes were made during the reusing process, include closing most of the original windows in the building, but it had been noticed that these changes were radical which may be considered a kind of counterfeiting.(Fig.10&11)



fig. 10: A picture shows the original facade of the public library in Boston



fig. 11: A picture shows the changes made in the library's facade

2. External extensions or adding an architectural element:

In some cases, the designer confronts a problem that the internal spaces of the building don't accommodate the proposed function, with the impossibility of internal extension; in this case, it is to think about the external extension or the addition of an architectural element, taking into account that these additions correspond to the original building.

The designer may decide that these additions are proportionate to the building in the architectural form, color and style of construction so that it is difficult to distinguish between the old and the new part of the building. The added elements may have architectural forms that differ from the original building in the materials and style of the building, but in the same time the building and site as a whole achieve an

architectural compatibility [2].For example the Louvre Museum which was established in 1559 as the King's residence. It was later used as the headquarters of several government ministries, before it was converted in 1989 to a museum to display the royal family's possessions by adding a hall in the inner courtyard under the ground. This hall was designed as a huge glass pyramid, and it has become a major entrance to the museum. The addition of this hall has contributed to increase the display areas by about 80% of its original area. (Fig.12&13)



fig. 12: A picture shows the Louvre Museum and the glass pyramid that was added in front of it.



fig. 13: A picture shows the glass pyramid from inside.

3. STRATEGIES FOR REUSING THE HISTORICAL BUILDINGS:

This research focuses on the study of different strategies for reusing the historical buildings. It focuses on four main strategies:

3.1 Social strategy:

The goal of this strategy is to create a kind of empathy and connection between the building and the surrounding population [5], where the proposed function contributes upgrading the social level of the surrounding areas of the historic building.

3.1.1 Social Strategy advantages:[6]

- Adaptive reuse helps revitalization of the surrounding area, controls the urban sprawl, and achieves a renaissance of the city.
- It improves the population socially, which in turn prevents the negative impact of the social changes on the values of the historical building.
- It distinguishes the region by a unique personality.
- Rehabilitation the surrounding area of the historic building, which prevents its

transformation into abandoned and desolate places.

- Changing industrial activities that are not compatible with historical buildings in accordance with the proposed function.

3.1.2 Social Strategy disadvantages:

- The standards required from the new buildings are difficult to be achieved in the old ones.
- Social goals may conflict with the social characteristics and the lifestyle of the population in the surrounding area.

3.2 Cultural Strategy:

Aimed at increasing archaeological awareness and disseminating knowledge of how to cherish and preserve archeology; the proposed function of the historic building is often museum, a cultural center, an exhibition, a library, etc.

3.2.1 Cultural Strategy advantages:

- Increase the people's appreciation and enlightenment towards the historical buildings and heritage value.
- Completion the preservation system of the historical building; as making it a tourist shrine and placing it on the cultural and tourist map increases the role of conservation and maintenance of this building.
- It represents intergenerational link; where we allow the future generations to identify and enjoy the legacy of previous generations.

3.2.2 Cultural Strategy disadvantages:

- Innovation in the reuse process is limited, compared to the design of a new building.
- Most of the proposed functions as cultural centers or exhibitions lead to the presence of large numbers of visitors at the same time to attend an exhibition or seminar, which negatively affects the building.

3.3 Environmental strategy:

The main objective is to merge the reuse of the historical building with the environmental considerations, so that the proposed function of the building adds environmental benefits to the Landscape, area characteristics, etc.[7]

3.3.1 Environmental Strategy advantages:

- Reusing a historical building is major step towards sustainability.
- Sustainable considerations including energy and water preservation, recycling of materials and reusing the existed structure.
- Sustainable reuse project focuses on natural elements such as: water, light, natural ventilation and social equity.

3.3.2 Environmental Strategy disadvantages:

- The high cost required to accomplish the reuse of the historic building.

3.4 Economic Strategy:

This strategy aims to invest the historical building to achieve an economic profit.

3.4.1 Economic Strategy advantages:

- Stimulate the innovation and entrepreneurship among the region residents, and upgrade them both scientifically and technically for the purpose of improving the regional economy.
- Developing the existing activities and raising its efficiency aiming to increase the regional production.
- Strengthening the links between the historical building and the population as the building has the capability of improving their economic situation.
- An acceptable economic return from the historical building which ensures the maintenance cost of the building.

3.4.1 Economic Strategy disadvantages:

- Incompatibility between the speedy changing needs of economists and the time required to adjust the proposed programs [8].

4- PRACTICAL EXAMPLES OF THE DIFFERENT STRATEGIES:

4.1 Examples of the Social Strategy:

4.1.1 Montazah Palace in Alexandria: (Appropriate application)

Montazah Palace is one of the royal palaces built by the Khedive Abbas Helmy II in 1892 in Alexandria. The palace is surrounded by a garden with many rare trees and plants. The gardens and beaches of the park have been transformed into a special location for the residents and vacationers to spend their holidays. (Fig.14&15)



fig. 14: A picture of the Montazah Palace after its conversion to a family and tourist park



fig. 15: A picture of the distinctive Montazah Palace beach, which makes tourists flock to it annually

4.1.2 Scakini Palace: (Inappropriate application)

One of the oldest palaces in Egypt, built in 1897, it is located in Sakakini Square in the center of Cairo, where it was built by Italian architects. A part of the palace was donated to the Ministry of Health in 1923, where the palace became a health education museum and a medical clinic. But the Ministry of Health was not eligible to take responsibility for a historical building; accordingly, the palace was neglected and exposed to a lot of damages. (Fig.16&17&18)



fig. 16: A picture of the Skakini Palace; an Italian-style architectural masterpiece



fig. 17&18: Pictures show the deterioration and damages in the Sakakini Palace as a result of not being properly and successfully re-used

4.2 Examples of the Cultural Strategy:

4.2.1 Al-Ghouri Agency: (Appropriate application)

Al-Ghouri Agency was established in the late Mamluk period, and it is considered as a model of the agencies of that era. It has been reused as a cultural center in 2005, where it has been equipped with a modern theater, a marble fountain and display chairs to accommodate 300 spectators, and supplied with high sound and lighting systems, as well as use of the Agency's spaces as dressing rooms and souvenir outlets. (Fig.19&20)



fig. 19&20: Pictures show Al-Ghouri agency after it had been equipped to accommodate the cultural concerts.

4.2.2 Al-Hawari house: (Inappropriate application)

It is one of the historical houses on Mohammed Abdo Street in Al-Azhar; it has been reused to become the House of the Arab Oud (one of the famous traditional musical instrument), where the cultural and artistic concerts are held. But the result of the presence of large numbers of people and for many hours in the Great Hall, in addition to the decorations and equipment for such concerts; all this negatively impact on the building. The increase in the proportion of CO₂ gas than the normal rate; resulted from the crowds of people and organizers, caused damage to decorative and archaeological elements and drying timber. (Fig.21&22)



fig. 21& 22: Pictures of re-using of Al-Hawari house as the Arab Oud House, showing the electrical equipment and decorations supplied in it.

4.3 Examples of the Environmental Strategy:

4.3.1 House in the Darb el Ahmar: (Appropriate application)

An old house in Al-Sayigh Road built in Ottoman style between 1830 and 1850 in Cairo. It had been reused to be a social center where the building used as multiple units which are rented to NGOs (Social organizations, organizations provide housing and health services for small prices, production organizations that manufacture products such as leather, textiles and souvenirs,...), beside the western courtyard has been converted to be a local cafe.

Environmental benefits include energy savings by recycling all the building spaces through the proposed function.(Fig.23&24)



fig. 23: A picture of a historical house in the Darb el Ahmar



fig. 24: A picture of the house after using it as a social center

4.3.2 Al-Saraya restaurant in Nablus: (Inappropriate application)

The Saraya restaurant is located in the city of Nablus (Palestine), where it was established at the end of the 19th century to be a restaurant, but after a while the ground floor became deserted and the first floor was used as a sewing workshop. It was rehabilitated in 2003 to become a restaurant again; accordingly some of the internal spaces were refinished. It was noticed manifestations of non-sustainability as painting the stone gave it a luster and non-homogeneous color, in addition to the reduction of stone porosity and thus moisture accumulates inside the stone, which in turn causes damages to the building. (Fig. 25)



fig. 25: A picture of Al-Saraya restaurant in Nablus

4.4 Examples of the Economic Strategy:

4-4-1 Al Gizerapalace - Marriot Hotel

Currently: (Appropriate application)

The Palace was opened in 1869 in conjunction with the opening of the Suez Canal to be Khedive Ismail headquarter. After the ownership of the palace moved to the Swiss Hotels Company, the palace was converted to a Hotel. Then the palace was transferred to the state properties in 1961, and then a decision was made to sell it to Marriott Hotels in 1976 to become an international hotel. (Fig. 26&27)



fig. 26: A picture shows Al-Gizera palace during its use as Khedive Ismailheadquarter



Fig.27: A picture shows Al-Gizera palace after its conversion to a hotel

4-4-2 Zainab Khatoun's house: (Inappropriate application)

This house was built during the Sultan Al-Ashraf Qaytbay's reign before 873. It is located at the corner of Zoqqak Al-Aini intersected with Al-Azhar Street. This house is a unique example of Cairo's residential buildings, where its architectural elements combine the characteristics of two distinct

historical periods: the Mamluk and Ottoman periods.

ZaynabKhatoun Square and House are among the most famous places in the Al-Azhar neighborhood. The courtyard of the house has been transformed into a coffee shop.

However, despite the economic benefit from the use of the yard of the historical house as a cafe, the importance of the archeological nature of the building was not taken into account, as the used modern furniture and equipment were incompatible with this ancient house. In addition that using the historical building as a café with a daily return, encourage the beneficiaries to neglect its periodical maintenance; as in this case their profit would be temporarily suspended, thus the house had been deteriorated. (Fig.28&29&30)



fig. 28&29&30: Pictures show the inappropriate furniture, equipment and finishing of Zainab Khatoun's house to be re-used as a café.

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5. CONCLUSION:

- Reuse of the historical building to perform a new function is not only a preventive and maintenance operation, but it is a new cultural vision to preserve its heritage and to affirm its and historical identity.
- The nature of the functions that can be occupied by each historical building vary, which in turn affects the methodology of the design solutions required by making changes to the building or not making any changes to it.
- The different strategies for reuse the historical buildings are centered on four main strategies: social strategy, cultural strategy, environmental strategy and economic strategy. The study of these strategies shows that each strategy has advantages and disadvantages.
- After analyzing the examples that have been applied to these strategies, it has been concluded that there is no successful strategy and unsuccessful one. However, there is a successful and unsuccessful implementation of the strategy, depending on the appropriateness of the strategy for a particular historical building and the method of its application.