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Introductory Chapter: Heritage Conservation - Rehabilitation of Architectural and Urban Heritage

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1. Introduction

Without the understanding and support of the public at large, without the respect and daily care of the local communities, which are the true custodians of world heritage, no amount of funds or army of experts will suffice in protecting the cites.
—*Mr. Koïchiro Matsuura, Former Director-General of UNESCO*

For the time being, we are interested in preserving the heritage because of the loss of culture, heritage, and inherited buildings. For more than 100 years ago, there has been an increasing research interest in the preservation of architectural heritage, restoration of monuments and historic buildings, urban renewal policies, traditional architecture and its identity, etc. On the other hand, there is a growing interest in sustainability.

On this basis, there is an important need to formulate guidelines for planning and designing decisions of contemporary architecture that belongs to the sustainability and appear in the traditional architectural environment, which preserves its past and maintains its identity. Modern cities must meet humans' needs and preserve their urban identity. Planning policies must be developed in order to achieve the sustainable development goals, which meet the needs of the present and protect the future rights that preserve the past and constitute a strong basis for the present and future.

2. What is the purpose of this book?

This book tries to answer many questions, in order to reach to the required conclusions and recommendations. The questions are as follows: What is the urban conservation? How do cities with historic depth deal with modern planning policies? What are our policies to preserve and rehabilitate the urban fabric of historic cities and heritage buildings? How do we explain urban conservation, sustainable heritage, and historical sustainability? How can we add new additions to the current building heritage and what is their contribution to sustainable development? What is the role of the organic additives in heritage structures? Shall we rethink of identity, through the study of traditional architecture within sustainability? Our book meets human needs and energy consumption and maintains the architecture identity with respect to sustainability.

3. What is heritage conservation?

The preservation of identity in the cities has a great relationship with the correct planning policies that relate to heritage buildings and traditional architecture,

where the traditional cities contain organic fabric with narrow, twisted, or broken roads with incomplete visual axes. The streets in the traditional cities are shaded and sometimes even roofed, as in Jerusalem, Damascus, Aleppo, etc. In addition to the inner courtyards, this made them an inward-looking buildings [1], in contrary to what we see those days in modern cities.

3.1 What is heritage preservation?

It is important to preserve historic cities and heritage buildings and revive them. The policy of reuse and rehabilitation of these legacies with selecting the right contemporary functions is a successful step on a secure path to save what can be saved from the heritage (**Figure 1**).

The World Heritage Convention recognizes that heritage can be defined as "monuments, group of buildings, and sites." There is a wide range of styles including urban cities, archeological sites, industrial heritage, cultural landscapes, and heritage roads. This increases the scope of places and landscapes that must be managed by heritage managers. By this definition, heritage is not only buildings such as worship places or fortresses and castles, which were considered as independent

Figure 1.
Amman City, Jordan (past and present).

places of its own not related to its urban environment. Today, heritage represents the whole environment that is influenced by its interaction with humanity and is therefore qualified to be recognized as a heritage [2].

There are several definitions of architectural and urban heritage preservation. For example, Elias considered that "conservation is a set of procedure which guarantee the protection of the architectural and historical characteristics of the important old areas and buildings, such as repairing, removing erosion and sedimentation signs, and securing acceptable standards for the protection of open spaces and squares. These emphasize the importance of urban preservation and the need for the functional continuity of these areas and buildings" [3]. This means preserving the heritage while insisting on keeping up and responding to the modern urban fabric of the city as a whole.

Feilden defines the cultural heritage by making the architectural heritage an important part of it, because it is "the physical image and material embodiment of unique human components in which man is the basis of creation, creativity and production" [4]. Since the ruined or heritage building cannot be separated from its urban surroundings, therefore, urban conservation is what we should seek.

Today, in contemporary cities, there is a rapid population growth leading to the expansion of contemporary cities, and with the loss of most master plans of cities, the relationship between ancient and contemporary has become an issue that has been addressed in many researches. This makes us responsible for developing today's cities, especially our historic cities for the future. As a result, future cities must be based on the past, living in the present, and evolving in the future through a coherent chain that meets the needs of all people in any age.

Cities that lack memory, away from their past, and do not preserve their heritage and identity cannot build their own future, which make them vulnerable to destruction.

This leads us to the importance of studying the term "urban conservation."

Urban conservation is "a process that focuses on the quality of urban environment by developing a program to protect cities and urban areas from environmental and optical pollution" [5].

The definition highlights the importance of restoration as an essential part of conservation procedure, regardless of the way or the area covered by preservation, whether it is a single building, urban fabric, or an entire city. They are maintained through different methods depending on the state of the building, the factors that led to the deterioration, its original or required function, and the proposed function.

We must understand and pay attention to preserving the traditional urban fabric, at least in the case of heritage loss and the addition of the modern element, as what happened in Leipzig. It happened also in Vienna, with a clear harmony between the old and the modern by preserving the important monuments and morphology of the city (**Figure 2**).

| Consantinah – Algeria | Old City of Baku – Azerbaijan | Ulus – Ankara Turkey | Sidi Bu Said – Tunisia(Tunis) |

Figure 2.
Urban preservation by figuring out the harmony between the old and the present.

We found a beautiful harmony between the old and the present, as well as preserving this harmony in Danzig (located Northern Poland) from war damages [6]. In Baku, Azerbaijan, the preservation of the internal order of the urban fabric was observed. This means the preservation of the urban structures, roads, and historic buildings. In Baku, it allowed us to find a new urban pattern, linked successfully to the old type.

Accordingly, urban conservation in historical cities can be achieved during its expansion, in an attempt to meet the requirements of the age. This can be achieved through applying the urban renewal policies that attempt to preserve the urban fabric and the city's inherited structure, as well as the urban flow of modern requirements, without forgetting the harmony of the architectural type of buildings and surroundings.

Heritage is a moral and material entity. Therefore, preserving it is a necessity in urban renewal policies of cities in all countries of the world, especially cities with historical depth, to achieve historical sustainability. The policy of maintaining their differences can stop the deterioration and the decline of the traditional and historical urban fabric [7].

Countries with special cultural heritage provide a humanitarian service to the world community and its society in particular. Therefore, many international organizations are interested in preserving the heritage and providing emotional, scientific, and material support to many countries such as UNESCO, Arab Towns Organizations, Aga Khan Institute, and others.

There are many countries through UNESCO which provide material and scientific support in order to save heritage in other countries of the world [8].

4. Conservation methods and policies

4.1 Methods and policies of conservation

Conservation methods are consolidation, reproduction, reconstruction, preservation, deterioration perversion, rehabilitation, and restoration.

The cultural awareness of the importance of heritage preservation in general, architectural and urban heritage in particular, was more evident after World War II in the twentieth century. Several policies were applied in the old cities and historical areas of Europe after World War II, including the removal and compensation policy. There is a reconstruction policy which deals with the replanning and constructing the areas that have been completely destroyed.

In addition to the conservation and preservation policy, which is concerned with the urban, social, and economic environment in order to preserve the buildings, the fabric and the special urban character of the old city, the use of inherited buildings, and their fabric to suit the age without affecting building exterior represents the policy of reuse and refunction. Once the adopted policy maintains to preserve the building, which extends to the surrounding area by intervening with the inherited buildings (renovation, restoration, maintenance, and reuse) and to its historical surroundings, we have to adopt the rehabilitation method. In addition, we have restoration policy, and when we put the criteria and conditions to ensure the survival of these buildings in the urban framework, this will call the protection policy, which are related to the restoration and renewal policy of inheritances [9].

Keeping up with the architectural and urban heritage is achieved through the process of rehabilitation and reuse within a different age other than the one that produced these inheritances. This can be achieved through selecting a suitable

contemporary function, which is not impossible, but it is very difficult and complex, where several factors overlap in order to get the balance to reach an acceptable outcome and achieve a successful experience.

The specialists must balance between these factors and influences and consider them, starting from the nature of the inheritance, its internal spaces, their size, distribution and its absorption of new activities, and the value of historical and architectural heritage. The type of the proposed function comes from the origin of the adopted function of the inheritance that is derived from its location, the time of construction, and the most important events associated with it in addition to its architectural and urban style. The ownership of the inheritance is considered to have a significant impact on the process of its functional rehabilitation, since the responsible authorities cannot preserve the heritage when it is considered as private property. The selected function should be homogeneous with the surrounding urban fabric and should be achieved with the least amount of modifications [10].

4.2 Rehabilitation of heritage buildings

The preservation of heritage, and in particular architectural heritage, goes through several stages, starting with documentation, collection of enough data and information about each heritage, documentation by photos, architectural plans, tables, etc.

By teaching the following course, "Preserving Architectural Heritage," I realized the importance of connecting the theoretical aspect with the practical one, where the student learns the scientific stages that he/she should follow for the success of the heritage preserving process.

After placing students into groups, they were asked to submit a conservation study of a preserved single building or a group of historical or heritage buildings without proper contemporary use or the lack of documentation or those that deserve to be preserved but neglected. Students were then asked to document, study, and analyze them to choose a contemporary function, which allows heritage building or group of buildings to achieve heritage sustainability in the current age. In the case of rehabilitated heritage buildings, the present function is evaluated and we propose another one to be developed according to the standards and the scientific foundations, which were adopted in this regard. Anyway, it is a direct means of documenting these achievements and preserving them from loss, and reviving them for our contemporary life and for the future of generations, which preserves the nation's memory.

The heritage preservation process of inherited models is provided through:

- Registering

- Describing

- Taking photos to preserve its features

- Measuring its size to draw its plan accurately

This is done by conducting a comprehensive field survey of the inherited stocks with interviews of specialists and persons involved in the inherited architectural or urban model. In addition to relying on the literature and sources that can provide us with data, information, and documents that make preservation (and often rehabilitation) an accurate and calculated process, which increases the value of architectural and urban heritage and is not a reason to harm it if it is based on

inaccurate data and information, the results of this documentation are proved in tables, records, and maps to facilitate the heritage whenever necessary, whether at the stage of the preserving decision of those inherited models or while maintaining and restoring them to prepare them for new or previous use after making the inheritance suitable and compatible with our age.

4.3 Choosing appropriate function

At this stage, there are a lot of difficulties linked to multiple aspects to ensure the proper selection of the new use; many of the traditional models suffered from damage and loss due to poor preservation and bad selection of function. The traditional model site, its architectural value, its original function, distribution of its spaces, their size, services, and its ownership are the factors behind the selection of the new suitable function.

And preparing the historical model for the its new use, based on the fact that space, as Schulz sees, meets the needs of man in a way that creates a close relationship with his environment, and so space is embodied in architecture, which achieves useful and symbolic purpose. The first useful purpose can be achieved by meeting human's needs and his various activities within a comfortable environment, and the second purpose is achieved through the meanings and expressions that space provides to its occupants.

The task of selecting the appropriate function in the old heritance rehabilitation is not easy. Some difficulties may arise from the fact that the selection process is subject to multiple factors and different influences. The team of specialists that maintain and rehabilitate must balance all of them. The type of the function often is derived from the origin of the adopted function of the inheritance and that came from its origin, time of its construction, and most important events related to it, in addition to its architectural and urban type.

The ownership of the inheritance has a significant impact on its functional rehabilitation, especially when it is a private property. The owner should be aware of the value of the inheritance and preserve it to achieve cooperation with the responsible authorities (either governmental or otherwise).

The selected function should suitably relate to the inherited environment and with minimal changes to harmonize between the new proposed use and with the old use, so that they will pay a reasonable cost for that change. In addition, that process will be done with the least cost, effort, and time. We should take into account the variable usage from time to time for the inheritance.

An example of heritage building rehabilitation is the building of the Consulate of Tuscany (**Figure 3**). It was built in the second half of the eighteenth century under the reign of Ali Pasha al-Qara Manli, who ruled Tripoli, Libya, from 1754 to 1793. It is considered as one of the most beautiful houses in Tripoli, known as Hosh Al Hareem (courtyard of women). It was used in the Second Ottoman Period as the Consulate of Tuscany. This building was restored and then opened in 1994 to be a building for folk collections and historical fashion in the name of "Tripoli Historic Exhibition of Folk Collections and Historical Fashion."

We have also Al Azem Palace in Damascus, Syria (**Figure 4**), which is one of the most impressive residential buildings in Syria, built in the eighteenth century, and was originally the residence of the ruler. Later, the palace became the museum of art and folk traditions in Syria. It has a traditional style and is divided into two parts, which consists of the official area, bathrooms, and exterior buildings. Each room embodies a particular social situation. Wax dolls are used in the museum to embody the characters that tell the story of the place and time.

Figure 3.
The central courtyard of the Consulate of Tuscany, which is now the Historical Exhibition of Tripoli, Libya [11].

Figure 4.
The distinctive architecture in Al Azem Palace, Damascus (which is a residential building reused to be a museum).

4.4 Space modifying with the new function

This stage was formed through the changing and modifying of the internal and urban spaces and their designed elements. In order to employ it in line with the revival of the heritage model, the users' needs and the new function requirements, at the level of all interior design elements and without affecting the value of the historical, architectural, and esthetic heritage model, and the different services that are required by the age when the model was rehabilitated.

Any defect in the space rehabilitation process is a failure in the process of preservation and rehabilitation, which will result in the same damage of not selecting the appropriate function, accurate rehabilitation, and in maintaining, registering, and documenting the traditional models. These spatial adaptations are not only at the level of the internal space elements of the architectural heritage, but also include the required spatial adaptations in the open spaces, in the inherited urban fabric, and the required changes to suit the chosen functions of this inherited urban area. The suitable choosing of new function is based on its centrality within the fabric of the city, its relationship with the surrounding planning units, the historical roots and original functions, as well as the impact of the new functions proposed to rehabilitate the inherited urban area, and the nature of the heritage buildings. In addition, of its age and the state of its construction and other influences that is the formation of space, then adapting it in line with the requirements of the age and the users' needs of the inherited urban fabric.

After restoration, maintenance and space modifications   During restoration, maintenance and space modifications

Figure 5.
An old building that has been preserved and rehabilitated as a hotel (Libya).

Figure 6.
Traditional Baghdadi houses that have been rehabilitated for administrative use.

In Tripoli, Libya, we can find the Izmeet Hotel, founded in 1816 and used since its establishment in the First Ottoman era as a hotel and a forum for caravan traders between Europe, North Africa, Countries of Africa, and beyond the Sahara. Izmeet Hotel is located in Bab El Bahr, near the port of Tripoli, not far from the Roman Marcus Aurelius, the Roman ruins of the city.

This hotel has been renovated, maintained, designed, furnished, reused, and rehabilitated. It operated for 5 years. It consists of two floors with 10 rooms and 14 suites provided with all services. It includes a dining hall, an Arabic session, a coffee shop, and a room equipped with Internet. The whole parts of the hotel are furnished with traditionally handmade pieces (**Figure 5**).

Modifications can be made on some traditional houses to be used for administrative purposes, as is the case with two houses in Baghdad, Iraq (**Figure 6**).

One of the heritage buildings that has been used and rehabilitated with a new function is the Khan Murjan building from the Mughal period. The Khan is famous for the beauty of its architecture, design, stone decoration, and the uniqueness of its arches. It is one of Baghdad's most famous Khans. It was rebuilt by the Department of Archeology and Heritage and reused as the House of Antiquities and Heritage (administrative use) and then as the Museum of Islamic Art.

Khan Murjan is now a wonderful tourist restaurant consisting of two floors; the first floor contains 22 rooms and the second floor contains 23 rooms. The ceiling consists of eight huge arches. It includes a series of walls and vaults with different shapes and dimensions interspersed with windows. This type helps to provide natural lighting and reduces the amount of pressure caused by the weight of the arches [12] (**Figures 7** and **8**).
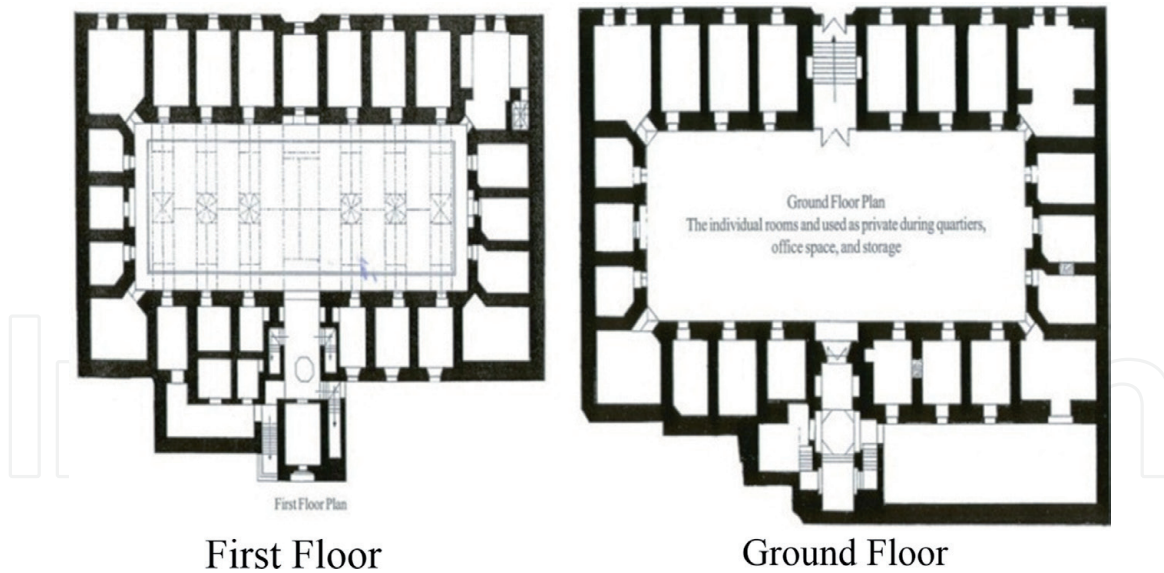
First Floor   Ground Floor

Figure 7.
Khan Murjan in Baghdad, Iraq.

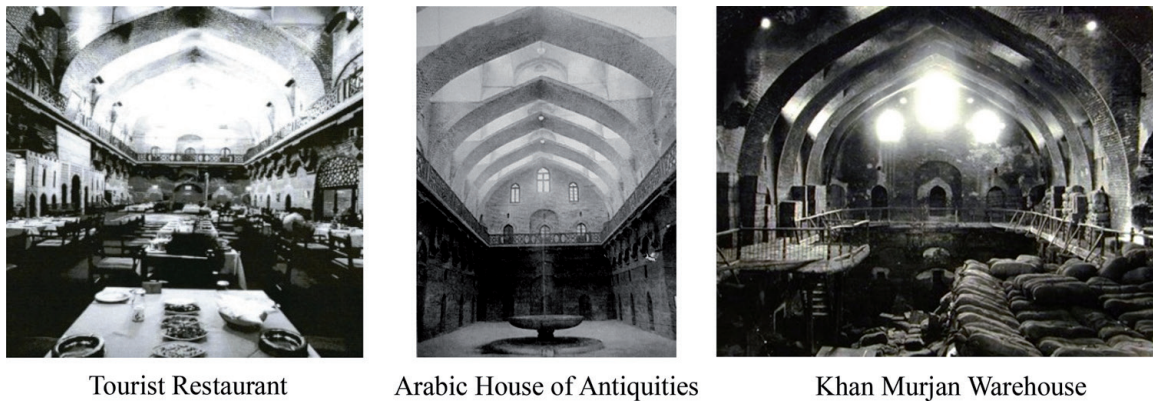Tourist Restaurant   Arabic House of Antiquities   Khan Murjan Warehouse

Figure 8.
Khan Murjan was built since Mughal period in Baghdad, Iraq.

As for the most appropriate contemporary functions that are selected to rehabilitate the heritage for preservation, the most specialized specialists in architecture, history, heritage, archeology, arts, maintenance, and interior design, who have distinct interests in preserving the inheritance have agreed that:

• Cultural functions (museums, libraries, art galleries, exhibition halls, scientific and cultural centers, etc.) are at the top of the list of selected functions because they extend the age of the inheritance and do not harm it in the future. They are also compatible with the historical roots and the symbolic and architectural values of heritage.

• These functions are often cultural tourism followed by tourist functions:

    – Educational functions

    – Residential functions

    – Entertainment functions

    – Administrative functions

– Commercial functions

– Health functions

Industrial function is one of the most harmful functions for the inherited buildings and inherited urban fabric, because this function results in damage and cracks in the body of the inheritance that causes loss over time. In the Aleppo preservation experience, the cultural tourism uses achieved the highest use, and there is almost no industrial function in the old fabric.

5. Conclusion

Attempts to preserve historical cities and cultural heritage are very few compared to the historical richness of the world. We highlight the historical identity when preserving our heritage. It is necessary to increase the degree of interest that strengthens the balance between historical and heritage wealth and the achievements of preserving it.

The preservation of heritage in all its forms poses a number of unique problems. The issue must consider in terms of the cultural, economic, and political values of the society in which it exists. The problem of financing is one of the most important obstacles to accomplish this task. It is necessary to cooperate with the governmental and private sectors at the local level. It is also possible to involve the international institutes interested in this aspect, because heritage is a human achievement.

The participation of people in preserving their heritage, identity, and awareness of its importance is considered as an effective factor in achieving the sustainability of these inheritances through a successful program of sustainable development. The legislation and administrative procedures are important for the success of conservation operations.

This can be achieved through granting people incentives and supporting them to participate in maintaining to encourage them stay in the city and preserve it. It is necessary to study the environmental importance of the old city, open spaces, gardens, and infrastructure, and involve the population in developing protection plans in cooperation with the competent authority. It is also useful to encourage tourism to the old city without harming it. This makes the population feel that they are materially benefiting from the tourists and that their cultural property deserves maintenance and protection because it is part of the world heritage.

Therefore, this awareness should start from people, society, and enterprise to achieve our goal of preserving heritage buildings and historic cities, in order to preserve the cultural and urban identity. We should also bear in mind the importance of the contribution of heritage protection in sustainability and sustainable development, which varies from case to another, during the three "pillars": the social dimension, the economic, and the environmental dimension.

Finally, we must emphasize that the overlap of several aspects is needed to achieve a successful preservation experience of a city. These aspects are planning, designing, housing and construction, laws and legislation as well as the field of tourism, preservation of the architectural heritage, infrastructure, services, environment and community participation with media to activate the sense of responsibility, awareness of the importance of the city, and its cultural and historical value.

Conservation should also include traditional and local architecture, as it always places the option of preserving through rehabilitation and letting the inherited buildings up-to-date.

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