



## **Introducing the Rehabilitation Policy in Order to Safeguard the Built Heritage**

### **Case Study: Hammam El Masry in Alexandria**

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#### **Abstract**

In order to maintain the old historical image of the city, it is necessary to look back into the past and identify the iconic buildings that have been existing during the last decades. By recognizing those valuable structures, architects together with the help of decision makers should take actions to revitalize the uses of those valuable buildings in order to prevent building's decay or destruction.

Old historical Arabic public bathhouses (Hammam) were chosen as distinctive buildings that have been used frequently during the 19th century in Alexandria city. The main objective of this paper is to highlight the importance of applying the rehabilitation policies for the revitalization of those heritage buildings that have shaped for a long time the character of the old town in Alexandria. This paper will first discuss the beneficial use of the rehabilitation scheme that helps in safeguarding the social, cultural and economical value of the built heritage. The concept of rehabilitation mainly focuses that no historic building should be pulled down until serious effort has been made. Then, El Masry Arabic public bathhouse (hammam) located at Minet El Basal district in Alexandria old town has been selected as a case study on which the rehabilitation process has been applied through field surveying study and a literature background as well. Finally the study has proved that the rehabilitation process for the historical structures can lead to a great social contribution that help in preserving the original identity of the historical town.

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#### **Keywords**

Rehabilitation; Alexandria; Heritage Conservation; Public Arabic Bathhouses

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### **1. Introduction**

Rehabilitation of different historical buildings types represents one of the great policies that can be used in order to prevent identity loss for historical streets within the old centre of the city. This will also help our cities to keep their original character and atmosphere that will be reflected to the cultural and economical benefits in their communities. The main objective of this paper is to inform professionals who are specialized in the conservation of historical building with different techniques and rehabilitation strategies that help preserving the loss of cultural heritage of the cities. Old Egyptian bathhouse rooms situated in Alexandria city have been neglected during the last decades that is why it is necessary to cultivate people awareness about the importance of the conservation and

rehabilitation of these historical structures as an important step toward preserve the historical identity of different places in Alexandria city from being lost.

### **1.1. Research Methodology**

The research methodology carried out in this paper first consists of a theoretical literature review about different rehabilitation strategies as well as showing its positive impact in preserving the social, cultural and economic heritage of the cities. Then it goes to investigate an explanatory case study that presents how to apply these strategies for the rehabilitation of old public bathhouses (Hammam) as a type of historical buildings that their original function doesn't exist at the present days. The rehabilitation process help to preserve the valuable means of the historical building and at the same time try to find a new usage that match with the present community needs.

### **1.2. Definition of Rehabilitation**

Based on the secretary of the interior's standards for rehabilitation, "introduction to the standards", the rehabilitation process was defined as: *"the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architecture and cultural values"*.

It can also be defined as applying few modification and additions to the existing historical building without affecting the original architectural identity of the building. That can be achieved by the replacement of the missing architectural features and by fixing and repairing the deteriorated elements and materials. It can also include re-using of the historical building without creating identity loss within the historical town (Feilden, 2003).

The repair and alteration of the old deteriorated architecture features should not destroy or damage the original materials and elements of the historical building in order to preserve the original character of the historical building (Morton, Hume, Weeks, & Jandl, 1992).

### **1.3. Advantage of Applying Rehabilitation Policy**

The rehabilitation process has many advantages that help preserving the social and cultural values as well as the economical assets of the community. Social and cultural values can be achieved as the main objective of this process is to preserve to architectural and archaeological values of the historical building in order to maintain the original identify of the town. Rehabilitation process has also the advantage of saving the economical assets of the city as in most cases demolition costs are annulled by using the existing capital of the original building. Using the existing infrastructure of roads and services also saves energy (Feilden, 2003).

### **1.4. Rehabilitation Process Criteria**

To choose the rehabilitation policy for the conservation of historical buildings some criteria should be checked before approving the usage of this policy. Such as the rehabilitation cost, which should be calculated and if it doesn't exceed two-thirds of the money needs for building new structure with the same area, then this process can be proposed as an efficient solution for the conservation of the historic building. Another point is that different element of the building such as walls, floors, roof, doors and windows as well as all services and infrastructure should be checked so that:

- The structure should minimally contain walls and floors.
- There can be some deflection on the roof so that it can need re-covering or some times will demand re-designing to prevent rainwater disposal.
- In some cases doors and windows will need total manufacturing but with respecting the original form with its

decorative elements.

- Services could be archaic that they will have to be replaced by new one.
- Finally, original data that document the original form and usage of the building should exist (Feilden, 2003).
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### **1.5. Rehabilitation Schemes**

A multi-disciplinary team should work together from the beginning of the rehabilitation decision for any historical building. The collaboration of different professions aims at achieving efficient and holistic study of the building. The team can be formed from several professions that are involved in architectural conservation such as: Architect and urban planners, structural Engineers, mechanical and Electrical engineers, Archaeologists and Art Historians, Materials scientists and Crafts men, surveyors, Building economists and building contractors as well as a traffic manager and health officer.

- The team has to be in frequent contact to discuss their work and in some cases they have to meet the owner of the building
- This rehabilitation team will normally analyze the building condition then they will recommend the most suitable usage either by reviving their original use or by proposing new contemporary usage for the building that fits with the fabric of the historical town.
- The new use should comprise minimum changes in order to preserve the historical value of the building as well as protecting the character and identity of the historical town. Minimum changes will also tend to reduce costs.
- Architects must respect Art historians and archeologists advices that aim at saving the special values of the historical buildings.
- In some cases it counts positively to understand the spatial environmental system of the historical building, trying to modernize the mechanical and electrical services. This process will reduce rehabilitation costs by avoiding cost of demolition and benefiting from using the existing urban infrastructure (Feilden, 2003).

### **1.6. Rehabilitation Standards**

In order to reach an efficient rehabilitation project, some standards have to be followed. These standards have to be applied in a reasonable manner considering technical and economic feasibility.

- First choice is to use the building for its original function, if the usage does not meet the contemporary needs of the community, then new usage that requires minimal change of the building character can be assumed.
- Avoiding the removal of historic materials and features as much as possible in order to retain the original character of the historical building.
- Avoiding the addition of new architectural features in order to maintain the physical character of the historical building.
- Architectural historical elements that are deteriorated over time shall be repaired rather than replaced.
- If many architecture features are totally demolished, they will need replacement. In this case the new element

should have the same design, color, material and texture of the original one.

- Documents and pictorial evidence are very important to help in replacing the missing elements of the historical building.
- It is forbidden to use cleaning material that may damage the historical features.
- New adjacent construction should be differentiated from the existing building but in the same time should be compatible with the masses, scale, size and architectural elements in order to preserve the original character of the historical property (Morton, Hume, Weeks, & Jandl, 1992).

## 2. Case study: Hammam El Masry at Mina El-Basal District in Alexandria

Arabic Public bathhouses that work with steam are considered as a type of heritage buildings that have historical significance. They were distinctive buildings that have been used by a wide range of people in Alexandria city during the 19th century when Mohamed Aly Pacha was ruling Egypt. During this period many of public Arabic bathhouses were built in order to satisfy the community needs, however only three of them have been survived until today. Although the significant historical, cultural and social values of these heritage buildings, they are all left in a very poor condition. (Awad M., AbelHafiz M. A. , 2007)

Hammam El Masry situated at mina el basal district is considered one the survival old Arabic public bathhouses in Alexandria. Its name goes back to it builder Mr. Ali El Masry El Khatab.



Figure 1. A panoramic view for Hammam El Masry taken from the main street of Escal Elghelal in Mina El-Basal Source: Image taken by the Researchers

The analysis of this case study is based on a documentary book titled “Hammams of Alexandria in the 19<sup>th</sup> century” prepared by Bibliothque D’ Alexandrie “Alex Med” as well as on a field surveying by the researchers. Two historic “Hoga” have mentioned that Haman El Masry was built from around 150 years ago. It was built using the bearing wall structure. Based on the arguments of “el Hoga” the bathhouse cover an area if 2495 and one-sixth ft (Awad, AbelHafiz, 2007).

### 2.1. Building Components (Based on the Documentary Book)

- Two adjacent bathhouses, one for men and another one for women.
- Seven storages: six of them are located on the south elevation and one is located on the west elevation.
- “Sabil” which is located on the south-west corner of the building.
- A space to put wet towels and for fuel storage, its door open from the north side.

- Fireplace and a well which was reached from the towel room.
- A housing floor on the upper floor, which was suspended on El Maghaz and El Sabil, and it contains seven rooms.



Figure 2. (a) Shows the original spaces usage of the bathhouse



Figure 3. (b) Shows the existing spaces usage of Hammam El Masry Source: (Awad & AbelHafiz, 2007) modified by the Researchers

## 2.2. Building Borders (Based on a Field Survey)

Hamмам El Masry has three facades and an adjacent side:

- The main south west elevation face the larger Street (Escal Elghellal Steet).
- The south east elevation face another large street (Osman Abaza Street).
- The north-west elevation face a narrow street (Hassan El Basry street).
- The forth side is recently adjacent to new and old buildings, while in the time of construction it was adjacent to an empty land that belongs to a lady named: "Nargole Bent Abdallah El Baydaa".

## 2.3. Studying the Architecture Elements of Hammam El Masry

Based on the literature review mentioned above that states the rehabilitation process criteria's, different element of the building as well as all services and infrastructure should be checked and analyzed in order to achieve a successful rehabilitation project.

### 2.3.1. First the Study of the Bathhouse Elements From Outside

Table 1. Study of the external architecture element of Hammam El-Masry

Element	Condition	Materials	Suggested rehabilitation process
External walls of facades	Good	-Small and medium stone. -The building blocks are interspersed with mid or large veins of wood. -Walls are covered with thick layer of mortar in a yellow color.	-Protect and maintain masonry surfaces. -Cleaning of masonry surfaces. -Repair of stone walls and careful removing by hand-raking of deteriorated mortar and other added ceramic tiles
External doors	Good	Wood with its natural color (Dark Brown)	-Protection and maintenance of the doors -Cleaning of timber - Repair of timber
External windows	Bad	Timber, glass and steel	- Need replacement

### Observations

The previous figures show that the building elevations suffer from many problems such as:

1. The demolishing of the upper floor.
2. The building structure is exposed and the exterior walls plaster is removed from several parts.
3. visual disturbance by electric cables as well as by the addition of ceramic tile on the shops elevations.
4. The corrosion of the metallic features of the building windows and the demolition of its glass.



Figure 4. Images show the defective points in the external facades of the bath house, Source: Image taken by the Researchers

### 2.3.2. Second the Study of the Bath Elements From Inside

Table 2. Al Dorkah (dimension 2.20\*3.25 meter square) in men's bath

Element	Condition	Materials	Suggested rehabilitation process
Floors	Bad	White marble	-Cleaning of good marbles -Repair of broken parts. -Replacement of missing and deteriorated part.
Roofs	Very bad	Timber Clapboard painted with green color	-Protect and maintain existing wood. -Repair of broken parts. -Replacement of missing and deteriorated part of wood. -Coating the wood with waterproof materials.
Walls	Good	Small and medium pieces of stones. The building blocks are interspersed with mid or large veins of wood.	-Protect and maintain masonry surfaces. -Cleaning of masonry surfaces. -Repair of stone walls

### Observations



Figure 5. (a) : image showing the arches inside the men's cold bath





Figure 6. (b): image showing the mater's bench (deket elme'alem) Source: (Awad & AbelHafiz, 2007)



Figure 7. (a): image showing the wooden posts condition inside the men's cold



Figure 8. (b): image showing the wooden staircase to the second floor Source: (Awad & AbelHafiz, 2007)



Table 3. The cold room (changing room) for men's and women's bath

Element	Condition	Materials	Suggested rehabilitation process
The fountain	Good in men's bath very bad in women's bath	Stones covered with tiles of marble	-Protect and maintain existing stones. -Cleaning and repair of marble -Replacement of drainage pipes.
Roofs	Very bad	Timber Clapboard painted with green color	-Protect and maintain existing wood. -Repair of broken parts. -Replacement of missing and deteriorated part of wood. -Coating the wood with waterproof materials.
Columns	Good	Circular timber columns painted with green color. They have square stone bases with height 45 cm	-Protect and maintain existing wood. - Repair of broken part of timber column and stone base.
Arches	Good	Built from thick sticks of Alboghdadly timber coated with a thick layer of mortar	-Protect and maintain existing wood arches - Repair of broken parts
Stairs	bad	timber	-Need repair and replacement for some parts to unsure safe vertical circulation
Handrail	bad	timber	-Need repair and partial replacement
Master bench	Very bad	timber	-Need replacement

By analyzing the different interior spaces of the building it has been concluded that there are many points will need major innervation for the rehabilitation of the Hamam.

- Renewal and replacement of water system;
- Renewal and replacement of sewage system;
- Renewal and replacement of electrical system;
- Windows are faulty and need total redoing, doors are good and need refinishing.
- Replacement of the plaster work which has deteriorated and flaked in places;
- The general cleanliness of the buildings, and the different types of flooring;
- Roofs have many defection and need recovering and protection from rainwater disposal.

#### 2.4. External Services Conditions

- Streets are paved

- The building is locating on two major streets
- It is easy to access the site with public and private transportation
- Electric, drainage and sewerage systems exist on site
- The use of the existing urban infrastructure will be a strength point for the rehabilitation process.



Figure 9. (a): shows the master's bench and the fountain in the women's cold room



Figure 10. (a): Showing the amount of trash and the mess in the current situation



Figure 11. (c) showing the inner walls and the timber ceiling condition in the women's cold room, Source: Image taken by the Researchers

Table 4. The warm room for men's and women's baths

Element	Condition	Materials	Suggested rehabilitation process
The fountain	Good in both men's women's bath	Stones covered with tiles of marble	-Protect and maintain existing stones. -Cleaning and repair of marble -Replacement of drainage pipes.
Roofs	Good	Nine domes made of brick. The domes contains multiple holes covered with glass	-Protect and maintain existing domes. -Repair of bricks. -Replacement of glass -Coating roof with insulation materials.
Arches	Good	Built from masonry bricks coated with a thick layer of mortar	-Protect and maintain masonry - Repair of deteriorated brick - Repainting in same color
Doors of the four shower rooms	Good	Timber doors painted in green color	-Replacement of doors. -Repainting in same color
The basin	Bad	Marble	-Repair of the marble basin - Replacement of drainage pipes.

## 2.5. Proposals for the Building Function After Rehabilitation

This research proposes two different usages for the rehabilitation of Hammam El-Masry in order to benefit from the cultural value of this historical building as well as its economic value as an asset that already exist and belong to the Egyptian government.

- The first proposal is to be used as a historical and touristic building. The building will be used as a physical illustrative model by revitalizing its original usage.
- The second is to modernize the place and turn it into a modern contemporary health center including spa and sauna and Jacuzzi.



Figure 12. (a): shows the octogonal central fountain in the women's warm room

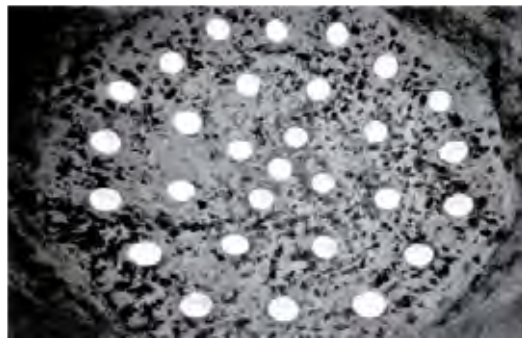


Figure 13. (b) Shows the main domed roof of the men's worm room, Source: (Awad & AbelHafiz, 2007)



Figure 14. image showing the services condition and the streets around the building  
Source: Image taken by the Researchers

The active participation of the local society is an important process that can lead to the success of any proposed action for the historical building. Hence, fifty structured interviews were made with a variety of social contributors including architects, local residents, historical activists and critics. Fifty five percent of the interviews has taken the side of the first proposal , and twenty-five percent was impressed by the idea of turning the place into a modern day spa while, twenty percent was not concerned by the importance of any conservation action toward such a facility.

The reasons for supporting the first proposal was that the facility is deteriorated and will not sustain the process of being active and in function. The second proposal will require technical intervention that would harm the main components of the building. As a result; being a touristic destination that will tell a story and describe a social activity that once took place in this location will be of a better use. Another point is that a modern day spa will not be an idea welcomed in such a low started location which is not suitable for such an activity.

The research concluded through field surveys and questionnaires, that the best practice for the case study discussed within the research; is to restore the building and maintain the original functions for the space to achieve a touristic destination describing an era where a social space was used for an activity which is not popular in modern days.

It is suggested that the rehabilitation process would be divided into several stages;

The first stage is to remove any labels, paints or any exotic materials from the building facades.

- The second is to rebuild the demolished second floor which was once used as a residential floor
- The third is to restore the main usage of the spaces to their original use, such as; el sabil which is used recently as a grocery shop, and one of the iwans and the maghtas , situated in the men bath are also used as shops
- In addition to restoring the storage spaces around the bathhouse , which are currently used as a bakery and a cotton storage. These should be included into the complex to support the rehabilitation process and to be used as bazaars selling related product such as organic soaps, bathing equipment and natural cosmetics. It is recommended that the bazaars should follow the structural form of the building in order to maintain the building character and the context in which it is located.

## 2.6. Conclusion and Discussion

Conservation of the built heritage in Egypt is partially neglected, where there is a weak public awareness about the importance of preserving the cultural heritage and the resources of such a historical town like Alexandria. During the field survey it was noticed that the Egyptian government is concerned by the physical preservation of the studied historical building (Hammam Elmasry). This was obvious in providing structural support for the ceiling of the bathhouse as well as assigning engineers and archeologist in charge of this heritage building to prevent trespassing. However, these actions are not enough for a real cultural and economic benefits from this rare type of historical building that was once representing a social character of the old town in Alexandria city in the 19<sup>th</sup> century. Therefore, the analytical study has highlighted the importance of applying the rehabilitation process on such types of historic buildings which could be the best practice for the heritage building conservation, as it can provide an appropriate use of the building without affecting its original character and identity.

## 3. References

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