

Deriving standards for designing public Baths to be compatible with the Egyptian community

Manal Tawfik, and Ahmed Esmail

Abstract— The research problem lies in the shrinkage of the role of public baths in Egypt –which had an effective social economic cultural and hygienic role in previous ages- as well as the deterioration of the condition of these public baths as facilities resulting in their collapsing and removal in some areas. The existing ones that are still operating are in a regressive condition that needs restoration, maintenance and rehabilitation. This is why it is a crucial matter to study the condition of these facilities and analyze the reasons behind their deterioration, extinction and the absence of the right concept of them being social hygienic facilities, as well as trying to put them back on the socio cultural map of the Egyptian community.

Keywords— Public baths, design, standards, Egyptian community

I. INTRODUCTION

CAIRO city is full of public baths, through which you can read the history of Cairo and the culture of its people. It descended from multitude and magnificence to deterioration and shrinkage. In ancient times, public baths used to have special attractive architectural styles and were frequently visited for relaxation and medical treatment. Occasionally, some celebrations of social events were held there such as circumcision and bridal preparations which disappeared gradually and almost vanished.

II. LITERATURE REVIEW

Public baths in their current condition are not suitable for the surrounding perimeter socially, culturally, economically and hygienically. The design standards of this type of buildings should be revised and there should be newly derived standards that are compatible with the nature of the Egyptian contemporary community. This research aims to observing and analyzing the big social, cultural, economic and hygienic role the public baths in Egypt had. As well as presenting the historic background of these public facilities and their appearance in the Egyptian society. That's why it is of the main aims of the research to study the reasons of the prosperity

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and deterioration public baths and the ways of developing and reserving them.

version, prepare it in two-column format, including figures and tables.

III. THE METHODOLOGY

The following steps were followed in the research as to derive design standards of the public baths:

- 1-Revising the standards followed to construct these baths in Egypt.
- 2-Observing and analyzing the current condition of public baths in Egypt.
- 3-Making a questionnaire for users and workers to determine the following:
 - The reasons behind the deterioration of public baths in Egypt and the reasons of people's reluctance about using this type of buildings
 - Determining the user's requirements in modern and current baths to improve them according to their hygienic, social and cultural needs.

IV. THE FINDINGS

Deriving standards for designing public Baths in Egypt and developing the existing ones as to be compatible with the nature of the contemporary Egyptian community

V. HISTORY OF PUBLIC BATHS IN EGYPT

Building public baths in Egypt returns back to the end of the fourth century BC with the invasion on Alexandria. Egyptians and Greeks used to inherit this tradition which is considered a hygienic, cultural and social practice at this time along with working on its improvement. With Islam spreading in Egypt, Muslims transferred public baths as an inherit from past civilizations, the first bath was constructed in Al-Fustat after the Islamic conquest of Egypt on year 28 AH being ordered by the leader Amr Ebn Alass and was called "Alfaar Bath"[1]. Building baths was spread at the period of the Arab rule for Egypt. Building these baths wasn't only limited to Cairo but also was spread in another areas such as Alexandria, Minia, Damietta, Rasheed and another cities all over Egypt[2].

The flourishing of these baths in Egypt was in the Ottoman era when these baths became of the Islamic architecture landmarks at this era(1517-1924), their number was 137 and was decreased to 57 baths in 1888 and was decreased again to 16 archaeological baths in Cairo [3], the most famous are "

Beshtek” which was built in 1431 by order from prince Beshtek, “Margosh” bath in Bab AL-Shaareyya, which was built back in 1780, Sultan Danial bath in Al Moez ledeen Allah Al Fatemy street in Al-Gammaleyya district which was built in 1456, Al-Malateely bath in Bab AL-Shaareyya, Kalawoon bath in Al-nahaseen street, Bab Al-bahr near Ramsis square, Al-talat bath in Al-mosky and Al-arbaa bath in Bulaq abu el-elaa, some of them were restored whereas the others stayed in their condition that was built 5 centuries ago, while the majority were faded out.

VI. THE ROLE OF PUBLIC BATHS TO COMMUNITY

Public baths were not only built for bathing, but besides being a place for getting clean, they played an important hygienic, social and economic role in the Egyptian society as follows:

A. Public Baths and Hygiene of the Society:

Public baths played a hygienic role in Islamic architecture desiring cleanness and due to not having baths in most of the houses, and also not having a pipeline delivering water to houses which resulted in the baths being a hygienic institution in community, bathing is considered an effective way of cleaning the body deeply, as well as nourishing the skin and adding glamour to the skin, hot steam in public baths opens the pores and helps losing sweat that is loaded with salts and harmful substances in the body (Kalpolina) which helps renewing the body vitality and activity[4].

B. Public baths and Social Development:

The bathroom played an important role in the social life of Islamic society, where it has become a place to consolidate social relations and physical health and cleansing and relax, and the baths are to contribute in solving all the problems of the people of the district, where he meets the nobles look at all issues related to the district citizens, as it formed a good venue for transactions between traders and the bath was a key element in the traditions of marriage and female genital mutilation are equal in the poor and the rich, have been recorded in a book described Egypt details of the celebrations[5]. Women visiting these baths was a part of social connections and spending hours of delight and socializing and eating and also finding brides, they may also revitalize inherited tradition e.g. weddings and special occasions.

C. Public Baths and economic development:

The baths have large advantage in getting rid of the waste, which was burned to heat water used in bathing, the output of burning is used in making Al-Qasromil, which was used in construction[6].

VII. COMPONENTS OF PUBLIC BATHS [7]

Public baths in Egypt consist of the following components:

The entrance and atrium: -is a narrow door was in some cases taken care of architecturally and ornamentally as in fig.1, it was usually announced about the bath to the public in the

road. And if the bath is a component of two groups attached to each other for men and women it used to have a small interface of two doors and from then atrium and often have an angle which lead to a lobby and in some cases it was found that this atrium is a rectangular corridor.



Fig. 1 entrance of AL-Dood bath, Mohamed Aly street- Gamaleyya district- Cairo.

Changing room (Slaughterhouse): it is a large hall for changing clothes that allows spending a period of fun before and after bathing, a deposit room box as well as having mattresses and carpets and in some cases prayer carpets spread into pavement bricks and sometimes there are apses or sitting rooms with wooden doors " partitions“ for those who want to rest or take clothes off or on, and was often topped with shokhshekha that lit its center as shown in Fig .2.



Fig .2 changing room (slaughter room) Al-malateely bath

Beet awal: it is considered a transition phase used to spend a few of time for resting before and after bathing, and the heat in this room is wet and it houses some mattresses that are distributed on a slightly higher level of bricks.

Heat House: it is a central area that is often covered by a Dome and has a huge block and often has a roof shaped as an octagon or hexagon. The massage was often done at this room as shown in Fig.3. And there are three or four side ewans that accompany the main space and are one step higher.



Fig .3 Heat house at sultan inal bath- bab al-bahr Street.

VIII. PUBLIC BATHS IN EGYPT THROUGH AGES

In this part of the research the development of the components of the design of public baths through ages will be monitored in order to derive the principles of designing public baths in Egypt

Al-dood bath was built in the 13th century: 657-1259 in Al-Gammaleyya district in Cairo. was built in the Ayubi era under the rule of prince saif al-din. Fig. 8, 9

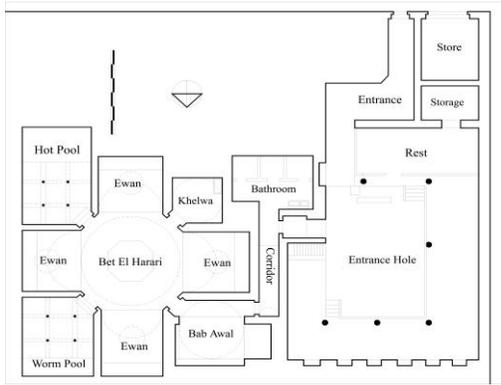


Fig.8 Eldod popular bath plan

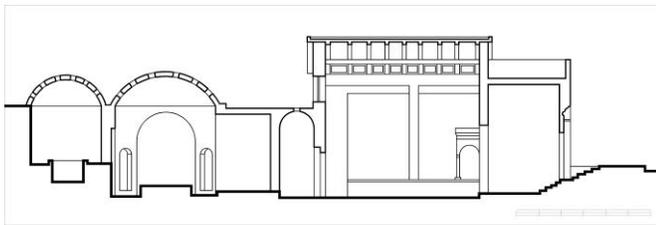


Fig.9 Eldod popular bath sec

The Beshtak bath built in the 14th century 742-1341, by prince saif al din Beshtak al Nasser in souq al salah street; it is a bath since the era of marine mamluks. Fig 10, 11

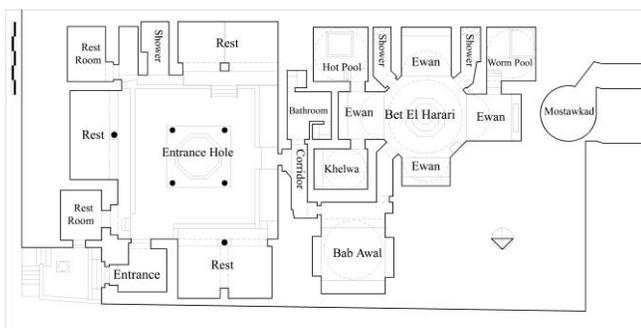


Fig. 10 Pishtak popular bath plan

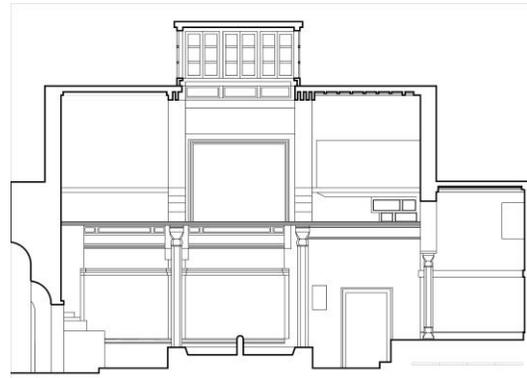


Fig. 11 Pishtak popular bath sec

Al-Malateely bath, built in the 15th century 1780-1194, built by prine Ezz al-din maaly menswid. Located in bab Al-shareyya Fig. 12

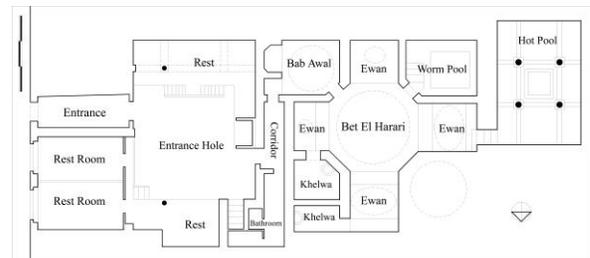


Fig.12 Elmalately popular bath plan

Senan bath built in the 16th century 1571. It built by prince senan bashayekka. Located in Bulaq. Fig . 13

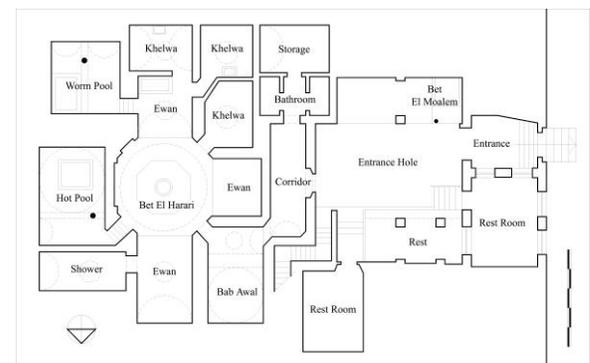


Fig. 13 Cinan popular bath plan

Through studying the development of public baths in Egypt through ages, we can deduce the general principles for designing public baths concerning the plan, privacy, heat, lighting and hot water

A. Concerning the Elements of the Plan:

The three main structures identify a range of properties:

- 1- Linear structure found in almost all popular baths the progression inside the popular baths follows a linear disposition sequential relationship from the street (from outside to inside and from public to private or semi-private). The private cells are normally at the end of the line which permits privacy and less interaction with other spaces

- 2- Transition control of movement between spaces for a climatic reason, following the obligation to pass from one space to another gradually with a temperature that is higher or lower while entering or going out.
- 3- subspaces found especially in internal bathing area with private bathing cells [7].

The bath can be divided into three main spaces:

- The cold space:

where people get rid of their clothes by putting them on shelves or closets, then they wear aprons, and do some body stretching, this room is also known as slaughter room.

- The intermediate space:

This is supposed to be a transaction so as not to have a shock from coldness to extreme hotness, and a room for bathing people to rest if he got tired from the hot temperature inside the bath.

- The hot inner part:

Where the bathing process takes place, sweating, massage and other things. Most baths starts with a long corridor connecting between the entrance and the slaughter room which was previously mentioned as the cold space.

B. Privacy

Through analyzing the plans and in accordance to the bathing process in the popular baths we can identify three types of relations [7]:

- Public/Users (multifunctional area or the reception area): Less control from outside – double barrier at women session – entering could be controlled by workers
- Users/Users (bathing area): Controlled by workers, deciding who and when to enter. Governed by respect to sociocultural norm that is managed by architectural features.
- Private / Family (private bathing cells): More control by users and workers – Protected from being - Khelwa A space where one can be alone The popular baths permits to have some privacy by using the khelwass which means “small palace” and that is because usually rich people reserve these private spaces for their use only, and they may reserve the whole popular baths In the reception hall of the popular baths in Egypt

C. Heat:

Heat in baths is processed from the oven and fire places as shown in Fig. 14, which is a device that heats water, its located near the tanks of cold water and it is a huge group completed by the oven which used to burn the wastes of the whole district in it, the heat produces steam that is transferred through pipes passing under the bath floor till it reaches the chimney, the hot room gets the biggest amount of heat through having the vertical pipes passing in its walls giving away steam through narrow openings.

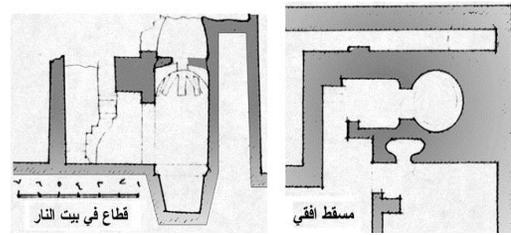


Fig.14 Plan and section in fire place(Algoora [8])

D. Fourth: Lighting:

The only lighting inside the bath comes through small openings in the domes and vaults or through al shukhsheekha on top of changing room.

E. Fifth: Hot water supply

The bathtub is supplied with hot water through a stream connected to the roof and adjacent to the dome, where hot water flows to spread heat and steam in all the place as shown in Fig 15.

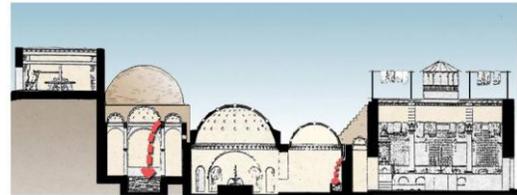


Fig.15 Water supply for the bathtub from water flowing from dome [9]

IX. THE CURRENT SITUATION OF POPULAR BATHS IN EGYPT

Despite the big role of public baths whether in social, economic or hygienic manner, it didn't receive much attention in Egypt by taking care of them, most baths in Cairo are in bad state and Dilapidated and some are almost demolished as shown in Fig. 16-21 despite having a big amount of marble ornaments and marvelous mosaic



Fig.16 Beshtak bath rooftop in its current state [10]



Fig.17 Al-darb al-ahmar bath rooftop in Cairo. Showing the neglecting the bath suffering from resulting in the demolishing of some components of it as the dome



Fig.20 The current state for the entrance of al-malateely bath



Fig.18 Current state of Beshtak Bath[11]



Fig.21 On the left an old photo from the forties for the entrance of Beshtak bath in souq al-selah street. On the right a picture for the entrance on 21-8-2013 where the neglecting appears while the entrance became a trash space [12]



Fig.19 On the right, a photo in 2011 for the entrance of Al-tambooly bath in bab al-shareyya, on the left a picture for the same entrance in 2014 where the destruction of a part of the bath and blocking the entrance in al-sabban street being affected by the demolishing of the adjacent building appears.[12]



Fig. 19 The current state of Al-moayed bath.

The popular bath is under the threat of disappearance in Egypt for the following reason[13].

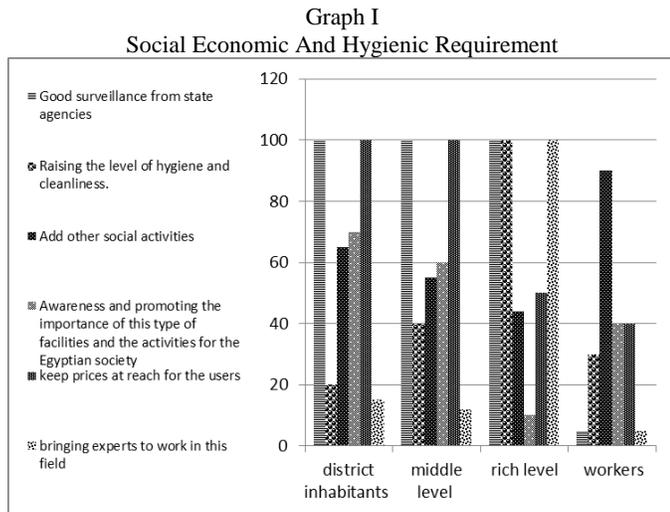
1. The lack of control in hygiene and cleanliness constitute threat to the survival of the popular bath facility.
2. The introduction of contemporary private baths, as well as new sport centers with sauna and steam rooms put additional pressure on the traditional use of the popular baths.
3. One of the main problems is that the popular bath as a business is no longer seen as profitable. Therefore popular bath owners do not invest in the maintenance and renovation of these structures, putting at risk the buildings themselves with some being are under the threat of collapsing.
4. The appearance of new modern popular bath with more facilities) another reason is the change that has occurred in the society in relation to the perception of the human body.
5. Change the social structure in the old residential neighborhoods

X. DETERMINING THE USER'S REQUIREMENTS IN MODERN AND CURRENT POPULAR BATHES

In this section, a questionnaire was made on a sample of 100 persons representing different levels of the Egyptian society to determine the social, economic, hygienic, urban, and architectural requirements for the Egyptian community, the district inhabitants represent 40% of the whole study sample, the middle level represents 25%, the rich level represents 25%, the workers in the place represent 10%. Through analyzing results of the questionnaire, the following requirements were deduced:

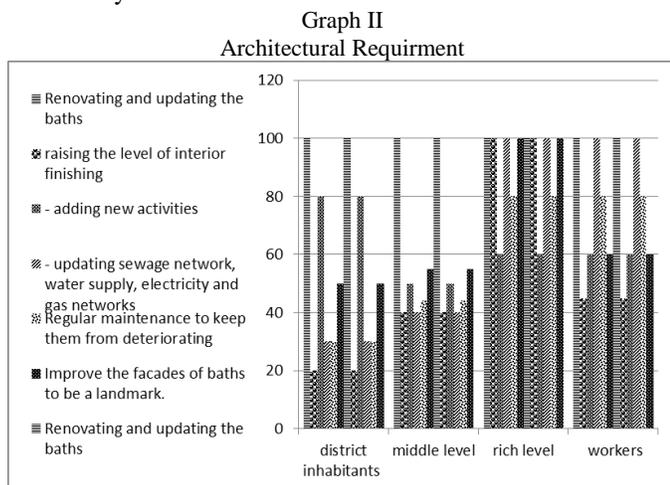
A. The social, economic and hygienic requirements:

Good surveillance from state agencies - Raising the level of hygiene and cleanliness. Add other social activities awareness and promoting the importance of this type of facilities and the activities for the Egyptian society – keep prices at reach for the users -bringing experts to work in this field. Graph I shows the percentage which shows the importance of these requirements for each level of the Egyptian community.



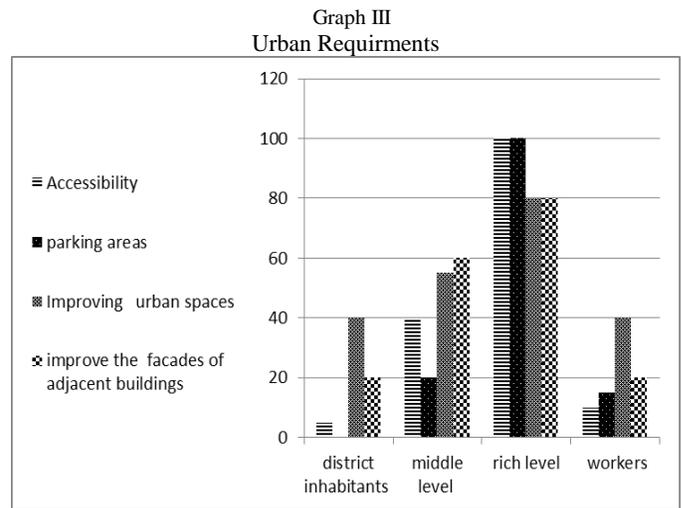
B. Second: Architectural requirements:

Renovating and updating the baths to get back to their original state- raising the level of interior finishing- adding new activities- updating sewage network, water supply, electricity and gas networks – Regular maintenance to keep them from deteriorating- Improve the facades of baths in order to be a landmark. Graph II shows the percentage of the importance of architectural requirements to every level of the community



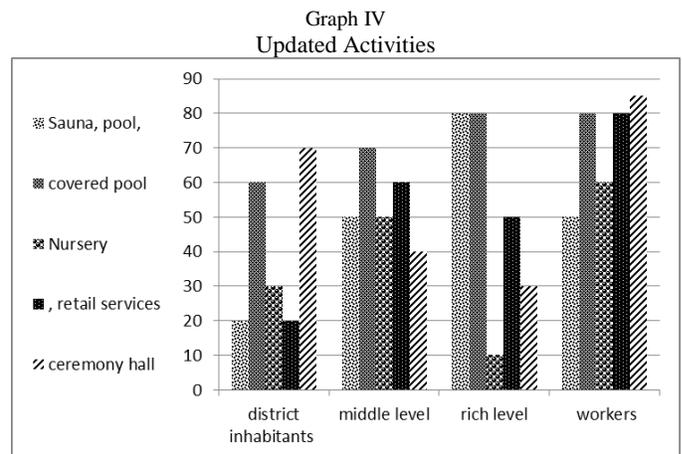
C. Urban requirements:

Accessibility - parking areas- improving urban spaces from cleanness and finishing- improve the facades of adjacent buildings to reflect the urban environment with special style. Graph III shows the percentage of the importance of urban requirements for every level of the Egyptian community.



D. Updated activities:

Add Sauna, acovered swimming pool, ceremony hall used for marriages and other ceremonies, retail services inside the bath and a kindergarten to fulfill all the needs of visitors during their visit in the bath. The graph IV shows the importance of the new activities that are required to be added in the program of public baths for every level of the Egyptian society.



XI. DERIVING STANDARDS FOR DESIGNING NEW POPULAR BATHS AND RESTORING THE OLD ONES

Through studying the components and standards of designing public baths in Egypt through ages and through monitoring its existing state and the requirements of its users and workers, the standards of developing archaeological public baths and contemporary baths were derived:

1. Rrestored and returned the old of the popular bath to its original condition.
2. Treatment thought society and change the way it looks at this bathes and health expand their role and their importance.
3. Different methods should be applied to revitalize the to its former practices for hygiene and health.
4. New acceptable additional services could be introduced, as it is the case in newly built popular bath

5. Keep the traditional style of popular bathes in Egypt and developing it by using methods of construction and modern heating
6. It is essential to keep prices at reach for the local users, in order to sustain its socio-cultural and economic activities.
7. This improvement must be at the request of the local community and not only as an investment in tourism development.
8. Maintaining the economic diversity of the clientele is very important in order to sustain the use of the popular bath by a large spectrum of the population living in the Egypt.
9. The technology for the operation of conventional popular bath needs to be modernized as far as methods of operation, maintenance, environmental performance, hydraulics, sanitation and restoration of such exclusive archeological building type. This requires more research and experimentation, particularly as regards sustainability, provision of energy and water, relation with the surrounding society; in addition to methods of restoration and maintenance, especially retaining the materials and techniques that proved successful in the traditional practices of the past
10. The privileged location of popular bath in the heart of the Cairo could enhance the visibility and the accessibility of the popular bathes

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