

EGYPT'S VERNACULAR ARCHITECTURE, FROM RURAL SETTLEMENT TO EXOTIC RESORTS

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Abstract

For millennia, the Nubians of Upper Egypt faced harsh climatic conditions and scarcity of building materials. Yet they succeeded in building their shelters by using mud bricks to build thick walls, arches, domes and vaults. Nubian vernacular architecture, with its aesthetics and functionality was not discovered and appreciated until the late Egyptian Architect Hassan Fathy had started to study their settlements, architectural elements and building techniques in 1946. Since then Fathy has incorporated the traditional mud brick vaults and domes in his designs. His work is considered to be a revival in Traditional Architecture, and he became known for his theory of "Construction for the poor".

Unfortunately most of his theories were neglected, and what attracted a number of architects was the use of traditional architectural elements. This led to the emergence of what can be called "Hassan Fathy Style", a style that has been applied tremendously in the past three decades to create luxurious resorts on the Red Sea shores. Such appropriation was encouraged by investors and developers to create an attractive and exotic built environment, one that fulfills the dreams of tourists who come to the region to enjoy the sea, sun plus an extra piece of cultural heritage.

The aim of this paper is to trace the evolution and revival of a type of Egyptian Vernacular architecture, and how it is transplanted in a new environmental, cultural and social context. The failure or success of this trend needs to be assessed, as it can either be a step on creating Neo vernacular architecture or just an abuse of Egypt's cultural and architectural heritage.

Keywords: Vernacular Architecture, Hassan Fathy, Egypt, Tourism



Figure1: A cluster of Nubian houses

The start, Nubian Vernacular Architecture

Nubia is a geographic region concentrated along the Nile, in the south of Egypt and North of Sudan. The culture of the Nubians is very different from that of the Egyptians. The houses in Nubia extended along the Nile at irregular intervals in a staggered line more or less parallel to the river. Where the bank was steep the dwellings extended inland following the contours of the ground, forming clustered terraces. Where the bank was relatively flat, the dwellings stood out in bold outlines in rows. The square contained the main mosque, a communal guesthouse, a post office and a few shops. The Nubians, faced with the challenge of a harsh, barren environment, and the problem of roofing spaces without wood for beams, have perpetuated a building

Figure2: Vaulted rooms around small courtyards



technique that has been used in Egypt since at least the 13th century B.C.

The Nubian house

The main entrance led into an open courtyard. With rooms adjoining the exterior walls on one or more of its sides. The courtyard was the vital part of the house and despite its proximity to the main entrance, was private, secluded and reserved for members of the family or their intimate friends. It was provided with raised seats along the walls, which made the courtyard flexible for most activities, cooking washing, sitting and even sleeping during the hot summer nights (el- Hakim 1993, 16). Fresh air was circulated through and sunlight was allowed into the internal part of the dwelling via the courtyard. This acted as a ventilating device and “ a private piece of sky” for the benefit of the household. The internal openings onto the courtyard were usually doorways and sometimes, medium sized windows, covered with wood shuttering. The very small windows lying just below the vaulted roofing allowed hot air, rising from within a room, to escape and fresh air to enter from the courtyard.

Methods of construction

The walls were made of mud, mud brick or stone and were almost 60 cms thick, thus minimizing the heat transfer by either



Figure 3: Building a Nubian Vault



Figure 4: Building a dome

convection or radiation from the surrounding ground. Roofs were constructed in two different ways, either using split palm trunks and acacia wood beams, with palm reed thatch and woven palm fronds covering the beams, or catenary vaults and domes.

The earliest recorded evidence of mud brick construction using a catenary vault date back to 2000 B.C. Examples of more sophisticated mud brick architecture date back to the Byzantine- Christian era and also early Muslim mausoleums dating to the 8th century. The construction of domes and vaults was an old Ancient Egyptian construction technique that was prevailing all over Egypt. Examples can be found in different parts of the country, but unfortunately the Egyptian peasant abandoned this technique, and it has prevailed only in Nubia.

The bricks used for vaults contained more straw than the ones used for building walls, to achieve greater lightness and strength. Without scaffolding or centering, the mason roughly outlined the parabolic form of the vault in mud on the end wall of the room, which was raised higher than the others. He then began to

lay the bricks against this wall. After 5 or 6 courses, it formed an inclined parabolic arch leaning onto the end wall and supported underneath by the two sidewalls. This arch was slowly extended until the whole room was covered and was then plastered on both the inside and the outside. The resulting room was naturally air-conditioned, since the ceilings were higher than usual and had openings at each end. Mud brick domes were rarely used in houses, as they were always associated with religious buildings such as tombs and mosques.

The vaults and domes, built entirely by hand and eye, required the builder to work with remarkable skill in order to find a proper sense of proportion to meet the structurally vital curves, proportionate to the width of the room being roofed.

The owner of a house would simply draw up the plans for his home on the ground, discussing his various requirements with his neighbors and the builder. The people of the area voluntarily supplied the labor, and the house was built with materials available from the immediate vicinity: alluvial mud from the

river, and sand and stone from nearby quarries (el Hakim 1993, 38).

The vault and dome construction is more economical than using reinforced concrete; for example, roofing a room measuring 3m X 4m with a vault would cost 1/7th of the cost of a flat reinforced concrete roof. More importantly the vaults create far more beautiful and spacious spaces. This style of construction represented the cultural identity of the Nubians in contrast to the people of the North, and was the symbol of their artistic heritage.

The Rediscovery of an abandoned Building Technique

"If you had seen some of the works of these Nubians when they were building for themselves, you could not have failed to appreciate at least some of the beauty of what they have made.... Today, everything is evaluated merely in terms of its material cost. There seems to be no place for art, no place for creativity"

Hassan Fathy

In *Architecture for the Poor*, Fathy wrote, "I suddenly felt terribly responsible. Nothing had been done out of consideration for the human beings who spent their lives there (countryside); we had been content to live in ignorance of the peasant's sickening misery. I decided I must do something" (Fathy 1989,4). Thus he began his quest for a means of rebuilding communities that would allow people to live with self-respect despite their economic status. He never turned away from

this goal, and the poor became his constant preoccupation. As Fathy realized that people who possess no cash can hardly become an architect's clients in the usual sense, and that they cannot be simply integrated on command into a cash economy, he set to work devising techniques of producing low-cost, energy-efficient houses. It was impossible to use concrete, as it required skilled labor, expensive equipment, and industrial materials produced abroad, all of these aspects put it out of reach of the budget of the Egyptian peasant. Concrete has another negative aspect, as in hot climates it traps and holds high temperatures unbearably, exactly the opposite of traditional earthen interiors, which remain cool during the day and release warmth at night (Swan 1999, 22). Fathy's solution was to turn to sun-dried bricks made of mud and reinforced with straw. In the early 1940's, he began to design dwellings that demonstrated an unprecedented degree of harmony with the natural environment, climate and local culture, and the spiritual traditions of Islam. With inspiration from the soil of Egypt, he aimed to help the poor build for themselves. Yet roofing remained a problem, the peasants could afford neither wood nor corrugated metal for roofs, nor could they even buy the wood needed to make forms to shape vaulted adobe roofs. The only economically sensible solution was to build adobe vaulting without wooden forms, which were used in Nubia to build ordinary houses, tombs and even royal buildings. Fathy feared that the secret had been lost, but in 1941, in the Nubian village of Abu al-Riche, he found village masons building catenary vaults of mud brick that could measure two stories high, up to three meters wide and of any desired length, without forms. The technique,



Figure 5: New Gourna Market



Figure 6: Public Square in New Gourna

he was exhilarated to learn, was simple enough to teach to any willing person (ibid).

Nubian vernacular architecture opened up a whole new world of possibilities for Fathy. Once convinced of the long history, durability and cultural applicability of mud brick vaults and domes, as well as their low cost and environmental advantages, adobe became his technological passion. Not only because of the adobe's durability over millennia, but also because of its thermal properties: In many desert climates it maintains comfortable temperatures within a range of three to four degrees centigrade over a 24-hour cycle. Furthermore, it is plentiful: Approximately one-third of the world's people already live in houses made of earth. Finally, the flexibility of a material for which right angles and straight lines are not always essential nourishes architectural creativity.

Accordingly, it can be stated that Fathy rediscovered existing architecture in Nubian villages, where he found aesthetically

pleasing structures that also had great functional value in hot, dry weather. These forms were not used in the Nile valley, where the flat roofs are the norm, but he succeeded in introducing these structures to other regions in Egypt. The following images show two of Fathy's most important projects regarding the rehabilitation of the rural communities: (New Gourna village in Upper Egypt and Bariz in the Western Desert Oasis)

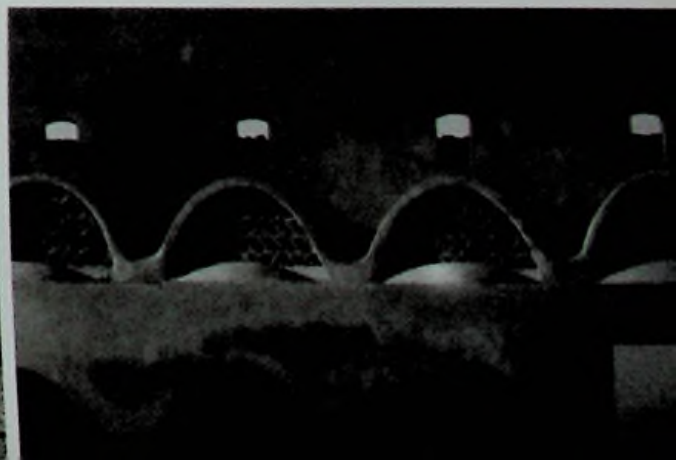
“Hassan Fathy’s” Style and the Tourism Boom

According to Hassan Uddin Khan “Fathy tried to relate processes of building to culture, place, and milieu, but what happens as time goes on is that gradually there is a kind of deterioration, as forms and symbols begin to be used with less and less

Figure 7: Bariz Market



Figure 8: A detail of the market's arcade



discrimination and less understanding of the process that brought them about or their meanings to society" (Khan 1999, 56).

In the 1990's, the young Egyptians who had some contact with Fathy during the course of his career were suddenly taken over by the international tourism industry. Since the late 1980s, large companies have been forming in Egypt, and it is essentially Fathy's stylistic model, that they are choosing for their holiday hotels. These are not business hotels downtown, but the ones tourists go to in order to experience the place, and which say, with their forms, "This is what Egypt is about", or at least, "This is an environment that we tourism promoters like, as an image of our country and ourselves, and want foreign visitors to experience."

The numerous tourist resorts along the Red Sea coasts that are outfitted with domes and air-conditioning units, prove that many designers have appropriated only a shell of Fathy's vision (Siddiqui 2000, 38). This "Disneyfication," represents a deterioration and a denaturing of the signs and symbols that Fathy used and intended. Much of his architecture has moved, ironically, from what it was supposed to be, architecture for the poor,

to architecture that is built and used by other groups of people who are not poor at all.

Case studies

Two touristic projects located along the Red sea in Egypt were selected as case studies.

1- Serena Beach al Quseir Resort

Designed by architects, Rami El Dahan, and Soheir Farid (Fathy's most successful disciples) in 1987. The project is 6 km north of the city of Quseir, and includes 180 rooms clustered around inner yards and connected with clear paths to the main building, cafeteria, restaurants, a health club, a gym, and a diving center. The resort complex appears to emerge from the earth because of the use of natural building materials. The stone used was quarried from the mountains behind the coastline, and the roof was made of sun-dried bricks that were produced on site. The combination was successful aesthetically and economically, and its architecture was copied in many resorts along the coastline.



Figure 9: An Overview of Serena Beach al Quseir Resort



Figure 10: Building a Nubian Vault in al Quseir

In fact this resort has always been praised for its environment friendly and sensible design, yet it had also stirred debates. Ashraf Salama believes that: "The major positive aspect in the project is that it became an exemplar of using local materials, where other projects are now utilizing same construction techniques without addition or modification. Also, it helped to create a character for a coastal desert area. However, there is a conflict between three aspects in this project, building materials and traditional construction techniques, the image and character, and the new lifestyle. Although the use of local materials contributes to the creation of a local image, it does not help to create local lifestyle, where central air conditioning systems are operated to reduce the temperature in all buildings. In fact, it is disappointing to see the grills of air exists and returns of an air conditioning system in a dome built with local materials. Thus, it can be argued that the project is superficially appealing to the local community, visitors from Egypt, and international visitors" (Salama 1999,18). While some architecture critics were expecting more from the Serena Beach al Quseir resort, others believed that its architecture is associated with Fathy's signature style, particularly the integration of the Nubian vaults and domes.



Figure 11: Domes and Vaults of the Resort

The architects' efforts to assimilate Fathy's teachings and produce unique work have led them to create a tourist space that neither challenges nor obstructs local topography nor upsets the social fabric (Siddiqui 2000, 46).

The success of this resort, has allured others to imitate its architectural style, yet unfortunately most of the trials were not very successful as they tried to create a certain "fusion" of Nubian, Mediterranean, Moorish and even Islamic architectural style with a touch of elegance and comfort to suit the tourists needs. This takes us to our second example:

2- El Gouna's Golf Resort

Designed by Michael Graves in 1997 in el Gouna, 20 km north of Hurgada. The Project consists of a golf course, a hotel, a residential area, and a clubhouse. It is built on clusters of islands and surrounded by turquoise lagoons. Graves used many elements of the Vernacular Egyptian architecture, such as the arches, domes and vaults, to create variations in height, skyline, and colors and thus give the hotel a distinctive character. Graves stated in the Project Profile "... Local Egyptian traditions influence the architectural character of the resort as seen in the use of construction techniques, which reflect its desert and



Figure 12: An Overview of el Gouna Golf Resort villas

waterfront context in an elegant manner”. The resort’s website states that: “The El Gouna Golf Resort is a stylish Nubian oasis of serenity and beauty within one of Egypt’s most attractive holiday destination. A sensational experience complimented by stunning architecture, breathtaking landscapes, sparkling lagoons and a stay that grants pure tranquility and joy”..... “Welcome to your very own fairy-tale hotel designed by world famous architect Michael Graves. An inviting, magical mix of Arabic and Egypt’s Nubian styles...”

These two examples are considered among the most successful resorts in the Red Sea coast. Yet it is obvious that el Dahan and Farid had tried genuinely to develop Fathy’s architectural style and to adapt it to the current economic realities and to the clients’ aspirations. On the other hand, Graves work could be easily recognized as an Orientalist’s piece of art, where he used arches, domes and vaults differing in color and scale, in a haphazard way

to create an exotic location where elements of vernacular architecture are abused as mere decorating shapes, lacking any authenticity. The difference between the two examples is obvious, yet there are numerous other resorts that are trying to find its place in the spheres of authenticity and exoticism.

Concluding Remarks

Suha Ozken eloquently summarized Fathy’s journey and career, “ Fathy’s priority had been to improve the living conditions of the poor by using appropriate architecture, but the outcomes of his endeavors led him instead to the design of exquisite stone masonry villas for the well-to- do intelligentsia of Cairo. Cynics, envious of Fathy’s international reputation, voiced this contradictions with slogans such

Figure 13: A cluster of el Gouna resort



Figure 14: Villas designed by Graves



as:” He is writing about the poor and building for the rich”. However, they deliberately ignored Fathy’s underlying belief that if the leaders of Egyptian society would appropriate and make good use of his architecture for their high aspirations and lifestyles, the underprivileged would follow suit” (Ozken 2006, 105). However, what had started - almost sixty years ago- as a revival of a type of Egyptian Vernacular architecture has been reduced and degraded – in most cases- to an exotic type of architecture that appeals to tourists and investors.

In fact, Fathy transplanted some of the vernacular architectural elements in a new environmental, cultural and social context, creating a type of what can be called “Neo vernacular architecture”. But unfortunately some of the architects who claim a strong

intellectual and architectural affinity with him are merely copying shapes, and the spread of the distorted replicas of “ Hassan Fathy’s Style” buildings is a striking example of how Egypt’s cultural and architectural heritage could be turned into kitsch. In order to be fair, we must wait till the Red Sea resort architecture is more mature and re-examine it. The numerous resorts that are being built are depending on the success of few examples that adopted this style. Their popularity is creating a new architectural trend, and as in any trend, there are genuine and fake designs. However the sustainability of these projects, and how successful will they be in responding to the emerging and ever changing environmental, economic and social needs will give this emerging style the needed credibility.

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