

# Comparative evolution of vernacular mudbrick houses in the Nile Delta and Qurna (Luxor)

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**ABSTRACT:** Whilst during the 20th century mudbrick architecture developed into a symbol of poverty in the north of Egypt, the specific circumstances of communities such as Qurna (Luxor) – constantly threatened with destruction by the authorities due to its being built on top of ancient Egyptian tombs – meant mudbrick houses turned into a symbol of community life preservation. How did these particular circumstances reflect on earthen buildings and can they throw light into the comparative presence or absence of specific architectural features? Conversely, what part did abandonment and progressive replacement play in northern building characteristics? This paper will aim to answer these questions through a combination of key fieldwork data collected in both areas (2009-2011) and examples from a photographic archive, hitherto unpublished, showcasing Qurnawi architecture throughout the 20th century before its large-scale destruction (2006-2009).

## 1 INTRODUCTION

Mudbrick had been the vernacular building material in Egypt for millennia. However, several complex factors operating between the 19<sup>th</sup> century and recent times prompted the beginning of the decline of traditional domestic architecture. Whilst such changes occurred across the country they were more obvious in certain areas, notably in the Nile Delta, where mudbrick houses have become the exception and a mud-based village fabric is no longer visible. Geographical, political and social changes had an influence in house location, distribution, features and building material, as well as in the quantity of mudbrick buildings, which dwindled through time.

An exceptional case within this conjunction was that of Qurna (Luxor, southern Egypt), a community built over ancient Egyptian tombs and whose history is intertwined with that of ancient Egyptian discovery and study. The particular circumstances of this community encouraged, for a large part of the 20<sup>th</sup> century, the preservation of a number of traditional mudbrick house features which became rare in other areas. Moreover, their adaptation to the Theban hill topography and their quest for preservation against governmental wishes, resulted in a particular number of individual solutions worth studying.

This article seeks to present a body of data previously unrecorded, as well as summarising a series of possible factors resulting in different mudbrick architectural solutions and in the evolution of this architecture in two distinct areas. It also explains brief-

ly the means in which the gathered information is being preserved, processed and ultimately disseminated for public use.

## 2 THE CASE OF QURNA: A CELEBRATION OF MUD-BRICK ARCHITECTURE

Qurna was the name of a collection of small settlements on the Theban foothills on the west bank of the Nile at Luxor, Egypt. The foothills are a necropolis, a large cemetery used for over 2,000 years, with tombs from approximately 2,000BC scattered across the many levels of the hillside. It has been a focus for collectors, excavators and tourists for over two hundred years, but its open tombs also provided temporary refuge to local people for far longer. To take advantage of the work provided by excavators, collectors and tourists, from the late 18th century many families who had lived in northern tombs and a village nearby, then took up permanent residence in the hillside tombs. Living in the City of the Dead gave them homes and a livelihood, but in the long run led to the death and destruction of their community.

Initially they built low walls round a yard outside their tomb, and many mud structures for storage, animals and cooking both in and outdoors. In the early 20th century, realising that the Antiquities authorities were keen to claim as much land as possible, the Qurnawi enlarged their yards and extended their walls. In 1921 a detailed survey recorded the houses

and enclosed spaces so that any further expansion could be prevented (Survey of Egypt, 1924). The habitable areas were thus fossilised around the tombs.

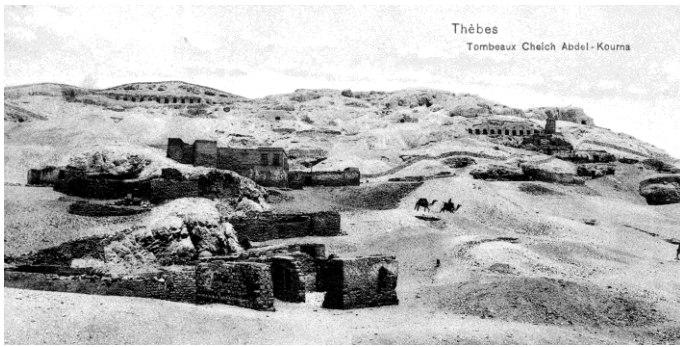


Figure 1. Sheikh abd el Qurna c. 1910.

The first post Coptic building on the hillside, built by a European collector, Giovanni D'Athenasi, in the 1820s, was a multi room, two storey building, with a large yard surrounded by a mud-brick wall. In the later 19th century some local people also built one or two storey square cornered houses, but many more built low, simple dwellings with reed roofs in the tomb courtyard while the tomb was still their main residence. These first simple houses usually had walls made with mud and stone mixtures, left to dry and then built up gradually. During the first half of the 20th century the most important, decorated tombs were vacated and became archaeological and tourist sites, but many of the tombs were of no such interest, so occupation continued, and yards were extended when possible. Most families built proper houses outside their tomb-houses, usually leaving the tomb entrance in the back yard, but sometimes as a cellar. In the 1930s and 50s most of the substantial square-cornered mud-brick houses were built. There was major re-use of building materials that were lying around the hillside, such as pieces of limestone (carved or plain) from tomb construction or various earlier stone buildings, and mud-bricks of many sizes from the old Coptic and Pharaonic buildings and the tomb fore-courts; large fragments of broken ceramic water pots were also incorporated into walls, but most new buildings required new locally made mud-bricks.

The pattern of the houses was largely due to the position of open tombs. Some stood alone on the hillside, but they were mostly in randomly shaped family groups which might have been above a group of tombs, or one extended family who had built additional buildings in the courtyard. There were no actual roads on the hillside – no straight lines - only paths for people and animals. The majority of the houses had two storeys, and a family group would have a mixture of one and two storey buildings. Built of mud-brick and usually rendered with mud plaster, they were often painted with Hajj paintings

by local artists (Parker & Neal, 1995). Many had brick and mud-plaster mouldings decorating the tops of the walls, and around the doors. One or two houses had large curved outer front walls which reflected the shape of the hillside behind. The large square house of the mayor had many rooms distributed over two floors and the huge tomb beneath was the village jail. Some had verandas at the first floor; the first floor of some farmers' houses had big loading doors with hoists to storage lofts.



Figure 2. Sheikh abd el Qurna in 1994.

The workshop of an alabaster vase-maker was in the big tomb at the back of his small house high on Dra Abu'l Naga, the most northerly of the settlements, where he lived with his parents and five children.

The actual shape and plan of the houses was extremely varied. This was partly due to the occupation and relative wealth of the family, but also to the number of live-in sons and expanding families, and again due to the actual position of the original tomb-house. As the family grew, so did the house; additional rooms were built up and out where possible. All the houses had flat roofs, whether above the ground or first floors. Most solid roofs had timber beams, with reed or mid-ribs of date palm leaves above, and then surfaced with mud. Many roofs were accessible by a staircase and used for storage, drying crops and clothes, sleeping on hot nights and more recently for satellite dishes. The simpler houses had roofs made of palm branches or reeds. While stairs to an upper floor were of normal width, staircases which just led to the roof were often very narrow and cantilevered from a wall on timber supports and the steps themselves roughly moulded from mud, straw and stone mixtures (Henein 2001, 46-49).

There were few fixed uses to most rooms, apart from one where the husband and wife slept. *Dekka* (long wooden benches) and cushions could be moved easily, so people could sleep anywhere - inside or out. The *mandara* or main entrance room or a room off it, was where guests were greeted and entertained. Often food was eaten laid on the floor here. The *forn* (bread oven) was in the yard, and

modern kitchen equipment fixed the kitchen area, usually on the ground floor.

Most households kept some birds and animals for food, looked after by the women and children. Sometimes a room, usually on the first floor if there was one, would be for pigeons, and mud roosting-places were created on interior walls, staircases and tombs. Other birds were in pens in the back yard, or mud bird houses in the yard or tomb. Goats or sheep were also in pens off the yard, or in a room on the lower floor. Some families also had a cow or buffalo – occasionally more than one – again kept in a lower room, stable, or pen off the yard, or sometimes in the tomb. There were some houses where the ground floor was exclusively for animals and farming – crops and machinery.

Water damaged the tombs, and there was no piped water in the hillside houses. In recent times, all water was brought up from the water taps down below the hillside by donkey carts with ex-oil barrels or by women carrying large water-jars. Nearly every dwelling had to have a space, preferably inside the front yard, for the cart and the donkey. Until the late 1970's there was no electric lighting in the houses, and it was very much an outdoor culture, both day and evenings. *Dekka* were often outside in the front yard, in addition to the mud-brick *diwan* or *mastaba*, a bench built off the bottom of the exterior wall.

The shape and form of some living spaces was very much central to the occupation of the male members of the family. One family of Coptic weavers on Sheikh abd el Qurna had a very simple exterior space and when indoors lived mainly in one small room and their tomb. After climbing the hill the visitor was faced with a pale washed wall, the lowest metre or so built of large pieces of limestone, and the rest mud-brick covered in rough mud-plaster at the higher level. The door, with raised mud moulding round it, faced west to the tourists and road below and led to the enclosed, partially shaded little yard which was their day-time space. This space was a workshop filled with the long loom which Rushdy or his older sons worked almost every daylight hour, and the other end of the space had the earthen *for*n for bread making that was exclusively the work of his wife, and daughters. Haniya, his wife, sat on the ground and did the spinning, while the older kids were often out selling trinkets to tourists. There was one small room extending from the workshop. The roughly shaped window and roof were made of re-used timbers, and the window had wooden shutters. The back wall of the workshop was the limestone of the hillside and the tomb entrance.

Many of Rushdy's poor neighbours from the higher occupied levels of the main central settlement of Sheikh abd el Qurna, who had moved off the hillside in the previous fifteen years, also mainly lived in the tombs and had small low-wall enclosed

areas outside them with the characteristic mud storage and cooking structures (Borchardt and Ricke 170, 188-192). The 'Nobles Shop' was down near the car park of the much-visited Nobles Tombs area, and the shop-owners made their living from selling to locals and tourists, some farm labouring, and breeding goats and sheep.

They had a fairly formless, mud and mud-brick low building with a reed roof covered in heaps of straw, a group of low tombs and the open courtyard between. Often the lack of a second storey indicated a poor family, but not always. Mahmoud abd er Rasul, multi-lingual and well-travelled, was the owner of the popular Ramesseum Resthouse, but had a low, unimposing house with a large outdoor area with many chaotic animal pens and working spaces. Mohamed Lazim was also a richer man, and the village headman's family house had been there since the late 19th century, but it was still a single storey range of buildings with a small open front space, and a large low-walled yard at the back and side. It may be that Al Sadat's Presidential Decree No.267 of 1981, which forbade any new construction or extensions in the archaeological area, had indeed prevented these two owners from building a second floor. In Lazim's yard there was a family *zawye*h, or meeting room. There were many *zawaya* on the hillside, sometimes a single-storey free-standing building, sometimes a special open fronted room on the outside of the main house (Simpson, 2001). They were easily accessible, often had verandas, and enough floor space for many benches to hold a large family gathering. They were usually clearly visible on the hillside as they were there to welcome guests, often in the dark.

### 3 THE DECLINE OF MUDBRICK ARCHITECTURE IN THE DELTA

In contrast to the more widespread preservation of mudbrick architecture in southern governorates, of which Qurna was a prime example until recent times, Delta governorates suffered a dramatic decrease in the presence of vernacular architecture, to the point that nowadays most villages are home to none, or only one or two, mudbrick houses, which have been trapped amongst the many red brick and concrete buildings around them (Fig.3).

The reasons for the different development of both areas are complex and manifold, as it is the case for all vernacular architecture. Social, cultural and political factors amongst others influenced the recurrence and preservation of mudbrick architecture in Egypt. Egypt's most precious resource – despite recent difficulties - also had a direct effect on them; while Qurna's houses were deemed to cause 'sight pollution' by Egyptian officials (Hawass, 2008 ) who saw

them as an obstacle for the preservation and touristic appeal of the ancient tombs underneath, it was largely due to tourism that the communities made a living and that the nostalgic view of ancient times conveyed by mudbrick fabric and wandering people and donkeys endured.

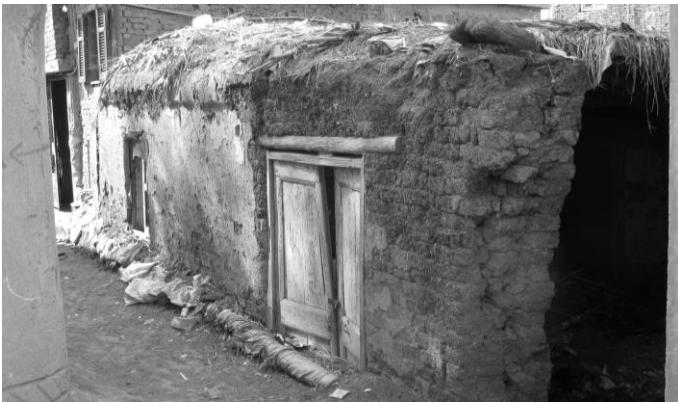


Figure 3. A mudbrick house in Kom en Naggar, Gharbeya.

The following data was collected between 2009 and 2011 through individual fieldwork, mainly in the Gharbeya and Kafr el Sheikh governorates. As seen in Qurna, a sturdy type of roof built with wooden beams and a weak type made with reeds, could also be found in the Delta area; weaker roofs were usually present in animal and storage areas, although they could be used regardless of room function if the financial situation did not allow for sturdy roof building. The main difference resided in the external finish of the sturdy roofs; whilst in the Nile Delta the majority of roofs were finished with branches and/or hay piled on top of a flat surface, this was a rare occurrence in Qurna, where objects were stored directly on the roof top and the presence of any hay there also pointed at its storage and was not structural. In the Delta, there was a low proportion of unroofed rooms, which in turn could be commonly seen in Qurna. The main explanation given by oral sources for such differences was the fact that precipitation in the Delta was more abundant, hence the presence of a thick roof providing the required protection from the rain. In reality, both areas are subject to flash floods and although rain is more frequent in the north (compare the annual 26 mm of Cairo with the 1 mm of Luxor, [www.climatedata.eu](http://www.climatedata.eu)), it does not offer a solid enough justification for the differences in roof finishes.

House walls in the Delta are almost ubiquitously built with mudbrick, while the use of wattle and daub for walls is confined to low fenced areas, such as pens, and stone is only used for foundations and only very seldom. Several types of bonding were recorded and brick-on-edge appeared often to be used as structural reinforcement for roofs or openings. Similarly, the colour of the bricks varied both within each area and between areas, being directly related to proximity to water sources, particularly

the main body of the river Nile, which determines a higher proportion of muddy earth vs sand, therefore affecting colour and consistency. The manufacturing process was essentially the same in the two areas, the main difference being the exact size; however, this size could also vary between different villages within very little distance and seemed to reflect the masons' preferences. Mud mortar was used to stack bricks together. The proportion of straw in the rendering could vary within the same area, giving walls a different aspect; whilst in the Nile Delta most houses were not painted, whether due to it not being preserved or to the original design, in Qurna the majority of facades were painted over the render, which facilitated the analysis of the render. Where walls were painted, they present similar Hajj pilgrimage designs to those described for Qurna.

Traditional and Western-type doors were present; locks were widespread but their specific features seemed to respond to the amount of security that the owners felt was needed, rather than to regional preferences. For example, within the same area, locks with a pronged key could be found inside or outside the front door. Arches or buttresses around main doorways played a decorative, structural and protective role, ensuring the safeguarding of the house. On the other hand, features such as fan lights revealed practical requirements, for example house ventilation.

Windows were similar to those described for Qurna, though openings could also be covered with grills made from branches, rather than metal.

Additional features, such as mud drainage channels at doorsteps, were characteristic of the Delta, as this area was susceptible to flooding prior to the build of the dam; for the same reason, some examples can be found in specific locations in southern governorates.

Balconies were rare; their presence could have been linked to architectural trends which, it should not be forgotten, would have also occurred in the history of mudbrick houses, and whose presence in rural areas might have been influenced by the same social processes that prompted the appearance of red brick, that is, a desire to show affluence.

Just as was the case for Qurna, animal keeping was essential. Birds could be found roaming on upper storeys and structures dedicated to the breeding and keeping of pigeons whether external or internal were ubiquitous, reflecting the importance of these birds for food and the production of fertiliser. Other animals such as cows were frequently found in ground floors and in areas immediately off houses. *Mastabas* and *dekka*, such as those described for Qurna, were also present, reflecting Arab traditions regarding the importance of hospitality and of having a socialising space open to the community. The lack of community fabric associated to mudbrick meant the disappearance of *zawaya*. Ovens were

present too, indicating the habit of each household of producing their own bread.

Mud containers were also a prominent feature, sometimes with an added structural function, acting as pillars supporting partial roofing in upper storeys.

The most apparent difference between preserved houses in the Nile Delta and those in Qurna was in the roof and number of floors. While Nile Delta houses almost invariably were single-storey high, Qurna houses were no different from most southern Egypt houses in presenting several floors, though, as has been detailed above, single storey extended dwellings were also present. As is well known, maintenance is paramount for mudbrick architecture, and upper floors are particularly vulnerable to it. In the Delta, only solid staircases appeared to have been preserved, while the cantilevered staircases used to access the roof in Qurna were not recorded. Niches featured in them; in addition to the niche practicality for economising space, they also perhaps reflected difficulties for acquiring furniture. When located on the side of staircases they also were an indication of the low natural light level conditions, which meant that traditionally oil lamps were required. In addition, as explained, Nile Delta roofs were often covered by large piles of hay, plastic, etc; while this was infrequent in Qurna, where roofs could be used for storage, but they were normally flat and large amounts of coverage did not feature.

#### 4 SOME REFLECTIONS ON GEOGRAPHICAL, POLITICAL AND SOCIAL CHANGES AFFECTING DOMESTIC ARCHITECTURE THROUGH THE 19<sup>TH</sup> AND 20<sup>TH</sup> CENTURY

The damming of the Nile was a fundamental factor affecting Egyptian domestic mudbrick architecture. It was prompted by the cultivation of all-year-round crops, which became necessary in Egypt in the second half of the 19th century due to the need to feed a fast-growing population, as well as the external demand for products such as cotton, amongst other factors (Ibrahim 1982, 63). While cultivation in the Nile valley had relied for millennia on the annual flood (Ibrahim and Ibrahim 2003, 73), these new crops required permanent irrigation, and for this to be possible, it was necessary to raise the groundwater table. To achieve this, several attempts were made to dam the Nile which culminated in the building of the Aswan dam at the end of the 1960s. This affected mudbrick architecture location, distribution, features and material, as well as the overall number of buildings. Location, distribution, and features were affected by these changes in landscape and land cultivation; while the flood forced rural communities to build very dense villages on high ground, the building of the dam allowed the habitat

to become more disperse by allowing the possibility to build on flat ground (Demangeon 1926, 173).

In addition, because of the need to be permanently close to the crops, new types of extended habitat appeared, located in the fields, to host all the land workers, 20 or 30 families living in simple accommodation all arranged around the foreman's house (Lozach 1930, 40; Mahgoub 2000, 6).

Lastly, the building of the dam affected individual houses directly because those built before the dam started to collapse when the groundwater rose. This had a particularly dramatic effect further south from Qurna, in Egypt's border with Sudan, where 70000 Nubians lost their homes and had to be resettled elsewhere, in most cases to non-mudbrick houses (Ibrahim and Ibrahim 2003, 90).

Red brick and mud brick production relied on Nile silt. With the loss of Nile silt after the building of the Aswan dam, it became necessary to obtain it from the river banks, or removing the topsoil, therefore affecting the river course and the soil productivity (Ibrahim 1982, 66). This had as an ultimate consequence the banning of these activities by president Mubarak in 1985, as well as the closing of red brick factories which relied on mud for their production.

Other factors, such as lack of land ownership, may also be considered as explicative of the differences in building appearance between areas. For most of the 20th century, most *fellahin* (peasants) did not have any land of their own or had very little (Baer, 1962). This meant that any building had to be small and preferably expand upwards; it might be assumed therefore that there was a correlation between the amount of land available and the size and distribution of the house. President Anwar Sadat's open policy in the 1970s meant that Egypt increased the dependence on Western countries and a new consumerist class developed; this reflected not only in the import of new building materials, but also on a new fashion which identified red brick and concrete with progress and modernity. In addition, many agricultural workers emigrated to oil-producing countries due to the economic difficulties; when they returned, having substantially improved their financial conditions but finding problems re-adapting to agricultural life, they used these buildings as a means of differentiating themselves from the rest of the community (Fakhouri 1972, 19). Although no official data is available to confirm that most migrants hailed from the Delta governorates, northern Egyptians are traditionally, and according to surveys, more prone to migration than their southern fellow countrymen (Farid & El-Batrawy 2015, 32; Zohry, *per.comm.*). Perhaps, this could be one of the main factors explaining the fastest disappearance of mudbrick houses in the Delta governorates. This mudbrick architecture disappearance trend, which started in the 19th century, has done nothing but accelerate ever since.

## 5 PRESERVATION OF EGYPTIAN VERNACULAR ARCHITECTURE: PHOTO ARCHIVE AND WEB DISSEMINATION

The fieldwork undertaken in the Delta governorates between 2009 and 2011, was the fundamental pillar of a doctoral thesis presented in 2012 to Durham University (Correas-Amador, 2013). This represented the first academic recording, surveying and documenting of Egyptian vernacular architecture in the Delta area and allowed for the recording of a rapidly disappearing tradition. It resulted in an abundant corpus of photographs which are in the process of being organized in an online archive. Since the fieldwork took place, most of the houses recorded have been demolished.

In Qurna, realising there was no future for them on the hillside, some families moved voluntarily and others were resettled. Between 2006 and 2008 nearly all the houses on the hillside were bulldozed, and the spoil carried away in large dumper trucks and lorries. This was a World Heritage Site (UNESCO, 1979) and this built heritage should have been treated with respect and conserved, but the physical buildings have gone so other ways of preserving the built heritage of the Qurnawi must now be used. Until recently very few Qurnawi had cameras, and no photos except of weddings and major family events. Portraits of local people and their houses were in books in foreign languages and in photo collections of foreigners far away. In 2004, when it was clear that people would be relocated to modern estates some distance away from the hillside, Caroline Simpson made over 100 A4 laminated photos of individual houses in various parts of the hillside and walked the paths with a Qurnawi friend delivering the photos to heads of households so that they would have at least one pictorial record of their Qurna house. Such photos are treasured. In April 2016, a major oral history project was carried out by the Qurna History Project and the American University in Cairo, recording over 75 elders of the relocated communities, and gave each interviewee an A3 laminated photo of their hamlet or group of family houses. A hundred A3 house portraits will also be put on display at a Qurnawi craft centre in one of the new settlements. Caroline Simpson's archive spans over 850 photos of local buildings, mainly houses. With this body of evidence, an online resource is in the process of being set up. The aim is to make it possible for any family who lived there, and the many millions who were not lucky enough to experience how fascinating Qurna was on the hill, to see it on-line. Any Qurnawis will be able to search for their family name in Arabic or English or search by the area the house was in, and photos will be available for the general public to browse through [www.qurnainthesky.org](http://www.qurnainthesky.org).

## 6 CONCLUSION

It is hoped that this brief summary has offered a general overview of the importance of undertaking work to preserve the rapidly dying Egyptian vernacular architecture in some form. Sadly, the future does not look promising for the preservation of mudbrick buildings; however, by presenting an analysis of the intertwined myriad of factors which these houses are vulnerable to, some clues have been offered as to how this could be achieved through detailed recording. Egyptian vernacular architecture is a rapidly disappearing heritage, and it is our wish that these projects have at least assisted preserving these traditions both for the Egyptians and the rest of the world, before their complete disappearance.

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