The New Village of Gourna, 1946-1954

The old village of Gourna lies on the west bank of the Nile River opposite the city of Luxor, which occupies the site of the necropolis of ancient Thebes. The present community is made up of five hamlets situated on the slopes bordering the strip of cultivated land. Like most Upper Egyptian villages where the Nile Valley is narrow, Old Gourna through its hill location has avoided inundation during the flood season. (Modern irrigation, however, utilizes the hod or basin system, under which certain areas of the plain can be diked against flooding.)

The number of inhabitants of Gourna is around 6,000. Their houses lie in the immediate zone of antiquities; in fact most are built over ancient tombs which are used by the villagers as storehouses, stables, or in some cases, as human habitation.

This situation is found, of course, after the tombs have been illegally robbed of their valuable archaeological contents before the government was aware of it. This practice has caused the Department of Antiquities much concern, and the matter was brought to a head in 1945 by the flagrant cutting of reliefs from registered tombs open to the public. The Department issued a decision that the whole village must be removed from the antiquities area and the land expropriated.

Then followed the discussion on the question of indemnity and the methods to be used in effecting the removal of the Gourna people. Two alternatives were set forth: to pay owners cash for houses or to provide them with equivalent shelter in an area near their farms and away from the necropolis.

The committee responsible suggested the second method
for the following reasons: One, it was feared that cash indemnities would be spent in other ways than building new houses. Also, it was feared that the Gourna villagers might receive the cash and then resist later efforts to eject them from their houses.

Secondly, the high costs of building and the scarcity of timber at the time the decision was taken, made individual construction difficult if not impossible, if the owners were given sums equal only to the value of their holdings. Those who risked building would erect inadequate dwellings which would mar the countryside in an important tourist zone.

Thirdly, collective building in an organized village would allow the people to benefit from the hygienic amenities and the efficient planning implicit in the project. Also, the inhabitants would benefit from the skill of architects, which for individual building would be unobtainable.

Fourthly, the special circumstances of Gourna would provide an opportunity to build a model village and so sorry on research in rural architecture. The results of these efforts would be a stimulating example for work in later village housing and management programs.

Accordingly, an area of 50 feddans lying at the crossing of the two main roads leading to the Ramesseum and the Valley of the Kings was purchased from its owner, Kamel Bulos Bey. The advantages of this location were increased by access to a narrow gauge railway leading to Isna, a river port above Luxor. The tract lies within a hosha, or piece of land protected by dikes from inundation during the annual flooding of the surrounding sugar cane fields.
THE ARCHITECTURAL STYLE AND METHODS OF CONSTRUCTION

It was believed that the style of the future village should be a confirmation of the indigenous architecture of the locality in particular and of Upper Egypt in general. It was decided to avoid the mechanical repetition of units and to utilize the local architectural and decorative elements to provide beauty and variety. At the same time, modern features would be introduced, providing they did not clash with the Upper Egyptian rural character.

This style would allow the use of local materials and hand labor and the employment of the craftsmen who had inherited traditional building skills. It would be far and away the most economical of all accepted types of construction.

The result of such a formula would be a village rich in indigenous spirit rather than a sterile copy of an extraneous approach to rural construction, an approach which in the last analysis denies the tenets of modern functional architecture.

MATERIALS

The underlying idea in the construction was to use materials which could be found or fabricated on the spot. Sun-dried mud bricks, mixed carefully from soil, sand from the hills, and straw were chosen for walls in general. Where exposed to water and dampness, red bricks fired in kilns built for the purpose or native limestone would be used. A mud mix similar to that used for the bricks would serve as mortar and plaster.

ROOFS

The main feature of construction in new Gourna is the
use of mud bricks for roofing, thus solving the main problem in peasant housing.

To expose this problem, statistics gathered in a housing survey carried out by the Fellah Department in the Ministry of Social Affairs can be cited. This survey showed:

Percentage of rooms roofed with:

1) wooden boards or reeds covered with earth (common in Syria) 17.9
2) palm trunks covered with reeds and earth 54.4
3) wooden beams or planks 2.5
4) roofless 27.5

We can conclude that the kinds of roofs most prevalent are made from local timber, that is, palm trunks or reeds. Immediately after these types comes the roofless group. Assuming that peasants wish to provide roofing, it is likely that they are prevented by lack of cash to buy the necessary materials. If a free material could be used, the roofless rooms, 27.5 per cent of the total, would be covered. If they are provided with a method which is possible, a latent constructiveness is released.

The use of domes and vaults constructed from mud bricks is, first of all, easily the cheapest of adequate roofs (reed roofs are not considered acceptable). The following comparison demonstrates this:

Cost of roofing a room 3 m x 3 m with:

a. beams, plank sheathing, and earth layer 12.85 L.B.
b. reinforced concrete 12.5
c. dome or vault in mud bricks 4
Further material advantages are as follows:

a. an indigenous, attractive style is maintained
b. valuable but perishing skills, lost for good if the chain of their inheritance is broken, are revived.

c. the Government would be encouraged by the economy of the project to carry out much-needed programs elsewhere.

d. emphasis upon local endeavor and ingenuity, as well as local expenditures, would provide an internal economic impetus.

e. landowners and their tenants could be shown how housing requires only the cost of the necessary hand labour.

f. the termite, spreading rapidly in Upper Egypt, is no threat to mud brick construction.

g. mud brick construction provides a smooth, plastered surface which, unlike reeds and palm trunks, discourages insects and which can be advantageously whitewashed.

h. such roofs are fireproof and will not collapse when material stored above catches fire, a hazard prevalent in Egypt.

i. spaciousness for ventilation is implicit in the dome-vault method. (Taking into account the height of doors, the width of lintel, and the rise of the dome, a total height of four meters is developed.)
THE PLAN OF THE VILLAGE

The site was bounded on two sides by a light railway that curved round at the south-east corner. Here there was a little halt, which obviously determined the location of the market, for the traders and peasants would want to bring and send their goods by train. The market occupied a large square area here, and provided the main entrance to the village. Visitors would cross the railway, enter the market through a gate, and then go through a second arched gateway on the opposite side of the market into the village proper. From this gateway the main thoroughfare wound through the middle of the village like a snake, in three curves, ending in the opposite corner at a small artificial lake and park. Half-way along this thoroughfare it opened out much broader and, together with a wide street leading south at right angles to it, formed the main square of Gourna.

Around this square were disposed the Mosque, the Khan, the Village Hall, the Theatre and the Permanent Exhibition Hall. The other public buildings were further away from the centre; the boys' primary school, for example, was situated by the park at the north-west and of the main thoroughfare, where it was cool and quiet (to catch the prevailing N.E. breeze to the vicinity of the park). The girls' school occupied a similar position but rather more to the east. The Craft School I put by the market, partly to encourage its sales and partly to let the dyers drain away their waste water into an adjacent ditch.

Two other main streets curved away in crescents, one from each end of the middle part of the main thoroughfare, so that together with that they formed a similarly winding
thoroughfare connecting the north-east with the south-west corner of the village. On this thoroughfare were, south, the little Coptic Church, and north, the Turkish bath, the police station and the dispensary.

VILLAGE DIVIDED INTO TRIBAL GROUPINGS

This layout of the main streets separated the four "quarters" of the village. In each of these quarters was to be housed one of the main tribal groups of Old Gourna. Here I must explain that besides the grouping of families into badanas, there was a larger grouping into tribes or clans; in Old Gourna the five tribal groups that made up the population lived in four quite distinct hamlets. In the new village I planned to keep this physical distinction by settling the tribal groups into the four well-marked quarters, which were allotted as follows:

The Hassassna and Atteyat, who had lived in Assassif (the hamlet lying in the middle of Old Gourna) were to be housed in the middle of the new village, to the north of the square. The Hassassna are a very old clan; their name derives from Al Hussein, the grandson of the Prophet, from whom they are descended. Because of this ancestry, they have always been respected as a pious and learned people, and at the time in question they included Sheikh el Tayeb, a very holy old man who was venerated all over the region. Therefore it seemed fitting to group the Hassassna around the buildings that represented religion and learning; the mosque, the two primary schools and the women's social centre attached to the dispensary.

With the Hassassna, in the same quarter, I put the Atteyat. This tribe has always been associated with the
Hassassna, and lived with them in the same hamlet of Old Gourna. Their name derives from the word for a gift.

The Hassassna and Atteyat occupied a semi-circular quarter to the north of the square. South of the main road, and embracing this semi-circle, lay the large quarter of the Horobat. Their name means "the warriors", and they were in fact an active group that included the most prominent tomb-robbers. So their quarter included the market-place, the Khan, the village hall, the theatre, the craft school, the craft-exhibition and the police station.

The Ghbat, the third tribe, take their name from the word "forest". Their quarter, therefore, adjoined the artificial lake and the park.

There was a fourth tribe, the Baerat, which lived mainly in the neighbouring village with this name while a small number of families lived in Gornet Moraï, one of the hamlets of Old Gourna. They had always kept themselves rather apart from the Gourni, and in fact came under the mayor of Baerat. These were housed at the extreme western end of New Gourna, separated by a broad street from the rest of the village.

The broad streets separating the quarters were intended as main "traffic-routes" connecting all the public buildings and meeting in the square. To ensure good ventilation and insolation of the blocks of houses, as well as to facilitate movement and to mark off the quarters, these streets were all at least 10 metres wide.

By contrast, the streets giving access to the semi-private squares of the different badanas were made deliberately narrow — no more than 6 metres wide — to provide shade and a feeling of intimacy, and included many corners and bends, so as to
discourage strangers to the badana using them as thoroughfares. On the plan they appear to be interlocking, as they are meant to facilitate intercommunication between the member-families of the neighbouring badanas.

I did not give the streets this crooked plan simply to make them quaint or because of some love for the Middle Ages. If I had adopted a regular plan like a grid-iron, then the houses would have been forced into a uniform design too. In long straight streets, and even in symmetrical curves, the houses must all be exactly the same if the general appearance is not to be messy, yet the families who live in these houses will not be all the same.

Furthermore, however convenient the grid-iron layout may be in large cities where the planner's chief concern is to achieve the optimum speed and volume of motor traffic, in a small village whose peasants will probably never possess even bicycles, such a pattern is positively harmful. To have a little village cut up by its streets into small rectangular blocks, one next to the other without any inter-connection, is to make a kind of civilian barracks of it, whereas it is the architect's job to make his village as charming as possible. If the architect is to offer any excuse for his arrogance in dictating what his fellow-men shall live in, that excuse must be that he can surround them with beauty. It would be grossly discourteous of an architect whose imagination had been enriched amid the loveliness of Siena or Verona, or the Cathedral Square of Wells, to scamp his work and fob his clients off with something less than the most beautiful architecture he can create.

There is still less excuse for an Egyptian architect, who ought to know the beautiful streets of Old Cairo, if he
deliberately adds to the weight of bad building that burdens Egypt today. He should go and look at Darb el Labana street, with its seventeenth-century houses leading to the gate of the Mosque placed just in the corner where the street makes an L-turn, or he should examine again the group of mosques and buildings round the Saladin Square, or the precinct of the citadel itself. He should go to Dardiry Street and see how the architect has turned a difficult problem to good account: having to set his rectangular upstairs rooms on a curved street, he has set each one slightly askew on its bottom storey, so that one and of it juts out more than the other, and supported it on brackets of varying sizes and depths to suit the amount of overhang. He should recollect all those places - villages, whole towns, quarters, squares, streets - that he longs to visit again and again, those rare achievements of beauty, civility and culture which by their existence somewhere on the surface of the earth shore up our confidence in civilization and raise our esteem for humanity, and in the spirit of their designers he should go to work on his own task.

In designing a village the architect has need of the greatest artistic care if he is to create a unity, character and beauty that will even approach the natural beauty that the peasants create unconsciously in their villages that have grown slowly and naturally. It is no courtesy to them to make the price of good plumbing the loss of all delight to the eye. Yet what rules should he apply, upon what principles proceed, to achieve his object? Certainly the magical effects produced in those few masterpieces of composition did not come by chance, but unfortunately, the rules are not set down and tabulated. The
controlled variation of line, volume, shape, colour, surface and texture in the Piazza Signoria are the solid equivalent of modulation in music. There is an exact analogy between music and architecture, and the rules for beauty in both are the same. Where a single house may be a melody, a whole town is like a symphony, as in Wells the town squares ascend, movement by movement, to the climax of the cathedral. But in music there are rules for the ordering of harmony and counterpoint, for avoiding ugly sounds and producing a composition that pleases the ear, while in architecture the quality of rightness must be felt intuitively. In this it is more like poetry than music. If only there could be a canon of architectural composition that would help the architect to order his light and shadow, mass and void, plain surface and decoration, so that the total design should present the same succession of themes, of crescendos and climaxes, the alternation of calm and animated passages, the unfolding of an overall design and gradual revelation of structure, as does a symphony by Beethoven or Brahms. In the absence of any established canons of composition, the architect must rely upon his own sensibility to produce town plans to which visual modulation gives constant variety and beauty within an overall unity of conception. Such designing by its example creates, or at least demonstrates, the as yet unwritten rules of visual harmony.

Yet modulation and variety are not elements of the design that can be stuck on to an otherwise dull plan to liven it up. If the variations in shape and size do not spring directly from the needs of the buildings - and therefore from the needs of their inhabitants - then they will be just sham beautification and will in fact fail in their object of pleasing the eye.
In Gourna, by compelling myself to fit the houses, which varied in size according to the area of the original houses they were replacing, into a variety of irregular plots, and by being ready to vary the plan of each to suit the people who would live in it, I made sure that I should think carefully about the design of each one, avoid the trap of adding variety without purpose, and produce a village in which the playing modulations would have a demonstrable "raison d'etre". I gave myself the problem of arranging a large number of different dwellings on curiously shaped and angled sites; such a problem is creative, and evokes an original and honest answer, while the problem of applying some beauty to a predetermined design can never produce more than a stale and insincere plan. My irregular plan made for variety and originality in design, for constant visual interest, and precluded the building of those boring ranks of identical dwellings that are often considered to be all that the poor deserve.

THE PUBLIC BUILDINGS

THE MOSQUE

Lying in the center of the village on the main square, the mosque comprises an open court planted with tamarisks and four adjoining iwans for the four Islamic sects of the village. It is large enough to accommodate all the worshipers during Friday prayers. The minaret has the exterior staircase prevalent in Upper Egypt and Nubia.

The mosque has a small chapel for individual prayers, located near the hygienic ablution section, which has showers for summer and hot water basins for winter.
THE TOWN HALL

Located also on the main square, the town hall includes a double arcade, roofed by domes, where postal, telephone, telegraph and other services are found. This area may be used as a madyafa or reception place by the public on special occasions. The building itself has an open interior court leading to the courtroom, the mayor's offices and the meeting room of the cooperative society. Included is a suite of rooms where delegated officials staying overnight in the village may be lodged. Space is available for all the offices and services necessary in the future.

THE KHAN

The word Khan is used generally for town commercial centers with storage places for goods in transit or for sale, and sleeping places for merchants. The Khan of Gourna will rather accommodate visiting craftsmen, and provide ateliers and shops for their work and teaching. The large interior courtyard connects to the village utility shops and these shops in turn open to the public under an arcade.

THE MARKET-PLACE

The market-place is within a short distance from the railway station in the southeast corner of the village. It is divided into three parts. (1) A series of vaulted stalls connected by a lateral arcade provides shade for sellers, their wares, and their clients. (2) Opposite the stalls is a livestock market shaded by eucalyptus trees planted equidistantly. Sections are planned for camels, cattle, buffaloes, donkeys, goats and sheep, with mangers and water troughs in correct sizes and heights. (3) An open space for grain.
SCHOOLS

Three schools have been built in new Gourna apart from the Khan: a primary school for boys, a one for girls, and a crafts school. The indigenous style of architecture has been used throughout.

Since the school is the first agent in cultural progress, great care has been taken to provide students with surroundings which are beautiful, restful, and suggestive of the paths that progressive living may take. The style of the schools complements the domestic architecture and provides an emphasis upon the cultural and aesthetic unity of life.

An inexpensive cooling system is provided in classrooms by built-in shafts which continue for some distance above the domes of the roof. The drafts created in these shafts will be cooled by passing over a layer of moistened charcoal resting upon a sheet of metal suspended in the shafts.

THE THEATRE

Located on the public square, the theatre provides facilities for folk drama and singing, lectures, films, and gatherings of various sorts. National stave fencing championships were held there. Since its inauguration it has been the setting of semi-annual folk festivals with Gourna performers, both the present workmen and their friends whom they invite from the old village in the hills. Thus the inhabitants of the old village are gradually drawn into the life of the new village, and their interest and loyalty developed.

The theatre is built around a square which upon occasion
can serve as an arena for sports. On three sides are tiered seats of stone, with a ribbon of steps serving as an aisle in the middle of each side. The fourth side is the stage with a permanent stage-set suggesting a village locale, with a balcony in the rear, steps descending on stage right, and two high windows on stage left. Two exits are found on stage left and one on stage right.

Above the seats is a broad passageway, covered with a pergola over which vines will be trained. Broad stairways from the two outside entrances lead up to the passageway. In addition side entrances give directly upon the area. Claustro screens are used liberally to provide decorative variation in the upper walls and textural variation is found above the front entrances.

**DRINKING WATER**

The old village takes its water from open wells situated far from dwellings. Petching water over long distances is undesirable in the area, where heat is excessive eight months during the year and dust is prevalent. It has been noticed that cattle have died from thirst upon reaching the hill dwellings even though they had drunk before ascending. Furthermore, chemical analysis showed that the present water supply is not safe for human use.

In the new village, a water source will be located in the middle of each neighbourhood unit. Wells furnished by hand operated pumps descend to a depth of twentyfive meters. The water obtained is bacteriologically and chemically safe for drinking. The floors of these fountains are lower by two
steps than the street and are cemented and waterproofed by asphalt, thus preventing overflow and muddying of the streets.

Surplus water is drained off through connected trenches, where it will sustain fruit trees.

Seats for women awaiting their turn at the pump will make for a sociable atmosphere wherein views and news may be exchanged, resulting in a steady social amalgamation.

Water will be stored in each house in large glazed pottery jars to be manufactured in the village. Pottery reservoirs are chosen because they do not rust. They fit their surroundings, and can be made locally, thus providing employment for town potters. Galvanized pipes will lead the water to baths, kitchens, and laundry basins. This situation represents an intermediate stage between old-style water jars and the running water which will be installed when dwellers have learned to use water faucets economically.

DRAINAGE

Boreholes six meters deep will be used to receive wastes from latrines, kitchens, and laundries. An interior drainage system will avoid the formation of mudholes both in courtyards and in streets.

HOUSES

In planning the dwellings to which the people of Gourna would be moved, our considerations were numerous. The daily habits of the villagers as well as the more intangible manifestations of their humanity must be completely familiar. In hygienic surroundings, the houses must have warmth in winter,
coolness in summer, and facilities for household functions, such as baking, cooking, laundry, bathing, and waste disposal. Storage space for personal belongings, foodstuffs, and fuel must be available.

Since the Egyptian villager traditionally houses his livestock within his living enclosure, this problem caused concern. An enclosure for livestock was included in each dwelling, near the entrance, and separated from the rest of the dwelling area by a bend in the corridor or a claustra screen. The possibility of having closed manure pits is feasible. Although flies do not communicate diseases between animals and humans, precautions should be taken to prevent flybreeding and the subsequent spreading of diseases from man to man.

The daily life of the Egyptian peasant goes on around the courtyard, as that of the European around the fire. But in the restricted space in Gourna, the courtyard could not be large enough to accommodate all the multitudinous activities. A solution was found by having two floors.

On the ground floor is the mandara or men's reception room, which has sleeping accommodations for guests. Also there is the loggia, a "family" room, for cooking, eating, and washing. It opens on the courtyard, as do the latrine and the shower. On the top floor are found the bedrooms, reached by simple stone stairs laid on mud-brick walls rising from the courtyard, and the prospective owner's expressed preferences.

**THE ROOMS**

The strongest roof-form for the ordinary room is the spherical dome. But it has one defect: it can be used only over square areas, not the preferable shape. In Gourna houses
this defect is nullified by the use of vaulted alcoves in one or more walls. These alcoves can be utilized as bed spaces, or fitted with cupboards, leaving the floor clear of massive furniture and lending spaciousness.

THE MANDARA

The mandara, or reception room, is demanded by the tradition of hospitality. It may have vaulted alcoves for storage cupboards, and a bed alcove where guests may be put up accommodated.

BEDROOMS

Similar to the mandara, the bedrooms have storage and bed alcoves. The bed is built of mud bricks and is covered by a strong reed platform, leaving considerable storage space below. Along the floor beneath the bed is the scorpion barrier, a channelled indentation which prevents the scorpions from climbing up to the level of the bed. The use of bed alcoves helps prevent sleeping in drafts, an important consideration in Gourna where well fitted windows are hard to obtain and bedding is generally scarce. Many homes have windows totally blocked against drafts. It is thought that the alcove arrangement will eliminate the tendency to cut off ventilation entirely.

THE FAMILY ROOM

Generally opening on the court, the family room has as its main feature a cooking place constructed of mud, with a hood and flue to prevent the smoking of the interior and the resultant loss of reflected light. Adjoining the cooking place is a fuel bin, where straw, branches, or maize stalks can be stored in quantity. Also provided is a low cement basin where the women may wash food or dishes in the favourite sitting
posture. A place for the meal tray and a sitting ledge is provided.

THE COURTYARD

Paved with fired bricks, the courtyard gives space for an oven, a laundry basin, and a shaded counter with holes for receiving water jars. The oven is the typical domed mud oven made by the peasant women, but with the addition of a flue to avoid smokiness. The laundry basin is a depressed cement structure, with compartments for receiving water from the faucet above and a disk in the center for holding a basin if desired. The disk is of a size and height determined after observation of actual scrubbing methods. Waste water is drained directly from the basin into the six-meter boreholes constructed below the courts, thus avoiding mud in the street and courtyard. The basin is located in the part of the courtyard where shade is provided and drafts are avoided. It can be used for bathing also.

Opening off the court are the shower room and the latrine, the latter being fitted with a floor-level cement latrine slab constructed locally, and draining into the borehole.

THE KACHELOFEN

An inexpensive, economical, and efficient heating method similar to the Central European Kachelofen can be constructed in any bedroom or mandara. It is made entirely of mud. By using an intricate arrangement of flues, one hour of firing will give heat for 12 hours. Every peasant attempts to heat his house with charcoal braziers, but unsatisfactorily. There occurs a waste of fuel and heat, and the discomfort of fumes.
A kachelofen is inexpensive as well as effective, for it can be constructed by the women at a cost of 32 piasters (about 70 cents). It can also be used for baking, although in summer, the courtyard oven is necessary.

THE STABLE

Necessary items in the stables are stalls or pens and mangers in the interior end which are separated from feed storage by a passageway. The stalls will generally be vaulted, or in the case of the smaller houses, roofed with reeds and mud with space for fuel storage above. Original designs called for domed roofs set on arches. This was expensive, needed centering, and called for special skills in construction. The vault will be standard stall roofing in the future.

By having the stable areas of adjoining dwellings backing each other, it is possible to have between them a long covered manure pit which each stable will utilize. Made of cement and extending below ground level, it would receive manure forked into it, and liquid manure would reach it by drains from the stalls.

CONCLUSION

Initial hostility from the villagers has given way largely to acceptance and in many cases eager cooperation. Many of them are fully aware of the principles guiding the construction of their new village and are active in planning variations and in maintaining the attractiveness of the settlement.

At present writing, the mosque, town hall, and theatre are completed, while the primary schools are substantially finished. The craft school is in use, and the Khan also, as
well as several storehouses. The market is ready for all comers on market days.

As for dwellings, accommodations for 500 persons are now available. Moving of villagers from their hovels in the tomb area await official decision on the question of how to arrange the financial aspects of the shift. It has been recommended that the shift be made on the basis of equivalent dwelling space, that is, a householder with three bedrooms at present would be allowed to move into a new house with three bedrooms.

Since 7,000 villagers have eventually to be resettled, considerable construction remains to be done. But since design, construction, and labor problems have already been solved through experience, building should move fast when the government has determined the basis of exchange and provides the funds needed for the balance of the dwellings.