British Mission to Tell el-Amarna

Great Aten Temple
Report on Recent Work
(February–March, 2021)

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Report on work done by the British Mission to Tell el-Amarna, February–March, 2021

The season of work at Amarna for Spring 2021 ran between Thursday, February 4th and Thursday, March 25th. The work was divided between excavation and reconstruction at the Great Aten Temple and the recording of objects inside the antiquities magazine at Amarna. For the site the inspectors were Osama Azmi and Sherif Ahmed; for the magazine Mohamed Abd el-Mohsen. Ali Farouk was the conservator. The mission wishes to express thanks to the Permanent Committee of the Ministry of Tourism and Antiquities for permission to work at Amarna during 2021, and to the officials of Middle Egypt for assistance in the successful completion of the Spring 2021 programme: Gamal Abu Bakr (general manager for Middle Egypt), Mahmoud Salah (general manager for South Minia), Fathy Awad (manager of the Mallawi sector) and Hamada Kallawy (chief inspector of Tell el-Amarna). The mission comprised Barry Kemp (director), Miriam Bertram and Juan Friedrichs (archaeologists), Marzia Cavriani (jar sealings study) and Andreas Mesli (photographer). Anna Hodgkinson in Berlin provided orthophoto mosaics from sets of vertical photographs of the excavated areas.

Work at the Great Aten Temple

A major aim of the Amarna Project at the Long Temple portion of the Great Aten Temple is to clean and record the foundations of the main stone temple of the Amarna Period and, having done so, to mark the main walls and other features in new stonework (Figures 1 and 2). The rebuilding is partly for the benefit of visitors to the site and partly to serve as a message to the people of the area that the temple is an ancient monument and should be respected.

In 2020 a long length of the ancient foundation trench for the north stone wall of the temple was excavated and recorded. Following this, the team of builders from El-Till who regularly work for the mission constructed a foundation of local limestone blocks exactly along the same line, to a height which corresponds to the ancient and current ground level. This left a gap of 75 m before the north-east corner of the temple, which was rebuilt in 2017. Much of the Spring 2021 season was spent filling the gap and so completing the new stone foundation along its complete length of 185 m (measured from the back of the front pylon).

The workforce comprised a group of builders (10 persons led by Shahata Fahmy) and a group of 15 workmen employed to excavate the foundation trench and then to fill with sand and rubble remaining gaps within and beside the new stonework, and finally to clean the site. In planning the work we derived much help from the plan of an earlier excavation drawn by the architect Ralph Lavers in 1932 (Figure 2).

The area of work covered two sectors

Sector 1. Across the rear of the temple the builders of the time of Akhenaten had spread a layer of gypsum mixed with stone fragments (gypsum concrete) continuously across from side to side. The 1932 excavation had exposed it completely. Subsequently it had become covered with a layer of sand about 10 cm thick which has preserved it well. The surface of the concrete bears many marks from stone blocks which had been used for walls and offering-tables (Figure 7). Our own work concentrated on the line of the northern wall and a strip of adjacent ground on the south which included a line of offering-tables. At the north-east corner, where stones had been laid in 2017 to mark the corner, the L-shaped area of excavation was extended for a short distance to the south and west to allow for the planning of a single row of offering-tables in both directions.
Figure 1. Plan of the enclosure of the Great Aten Temple. It shows the main features within the enclosure and the main area of the 2021 season which is outlined in red (see Figure 2).
Figure 2. Plan of the rear part of the Long Temple showing the progress of the work of study and reconstruction achieved in spring 2021. The underlying plan is that of Ralph Lavers, made for the Egypt Exploration Society expedition of 1932 (COA III, Pl. III).
**Sector 2.** Sector 1 ended to the west in the foundations for a colonnade, the positions of the columns marked by square open spaces defined by stone walls joined by short connecting walls. Between here and the front of the temple lay three courtyards, one behind the other, which had contained only lines of offering-tables (Figure 3). These had been laid out in groups surrounded by wide, uninterrupted spaces with a further space running on the line of the temple’s central axis. These wide spaces allowed easy access to crowds of people. The concrete foundations had not spread across the courtyards from side to side, however. They had been confined to the areas where the offering-tables stood. This left strips of sand which had been covered with an upper layer of concrete on which the stone pavements had been laid. The builders had considered it to be not necessary to provide a lower foundation of concrete.

Within the area of investigation for Spring 2021 the excavation of this sector was limited to a narrow strip of c. 5m at the western end containing the foundation trench for the wall and beside it a strip of the upper concrete (Figures 4 and 6). In places where we have exposed this before, the surface has shown no evidence for the expected mortar for limestone paving blocks even when the surface was in good condition. This time, however, clear patches of gypsum mortar containing the impressions of the underside of limestone blocks remained, showing that the upper concrete had, indeed, been paved over.

The surface of the gypsum-concrete lower foundation layer provided many clues as to how the ancient builders had proceeded. As we have noted since the work began in 2012, the workmen who made it were skilled in mixing the gypsum and the accompanying broken stones to a consistency which, as it dried, did not crack. It hardened with an uneven surface through which pieces of stone protruded. The builders needed a smoother surface and so spread (or poured) a thin layer of wetter gypsum without stones over the top.

For the next step the ancient workmen marked straight lines on the dry gypsum surface by using lengths of string soaked in black pigment. For the north wall this resulted in two continuous parallel lines (Figure 7). The distance between them varied between 1.14 and 1.18 m. The offering-tables were mostly laid out in the same way although in places no trace of an ink line remained visible. Their outlines were given emphasis by cutting along them with a chisel (Figure 9). In a few cases a workman had abbreviated his work by cutting only the corners. The area of the north-east corner showed less care in making the outlines, with a few lines cut twice on different alignments.

Along the line of the north wall the marking of the edges was followed by spreading between them a bed of gypsum mortar. The stones for the bottom course were then pressed into it, the workmen using their fingers to press the mortar against the bottom edge of the blocks, leaving long smooth grooves in the mortar. These often remain behind as the only direct evidence for where the blocks had been. The same is true for the shorter walls which defined the small rooms (Figure 8). As the wall rose, along the outside face holes were cut into the edge of the concrete foundation layer close to the line of the wall. They were subsequently filled with concrete and smoothed over (Figure 10). Our explanation is that they were to contain wooden scaffolding poles to support wooden planks which formed a platform for the builders as the wall rose. They were primarily to be seen along the outside face although a few were also present along one side of some of the walls which crossed from north to south. In these latter cases it could be seen that the holes had been filled in before the cutting of the lines that defined the offering-tables and the building of the minor walls.

The plan of the temple as a whole shows a major division of layout around two-thirds of the way towards the back (Figure 3). Here it was crossed by a colonnade comprising three rows of columns, although spaces were allowed for groups of offering-tables. The presence of the columns was initially indicated by square foundations, as stated above. Their presence was also marked by many fragments of limestone column found in the surrounding debris. In 2017 a large piece from the capital of a limestone column, which had been lying on the surface since 1932, was removed to the magazines. A reconstruction based on it (and using as a template the columns in the tomb of Ay, RT VI, Pl. XXIII) points to an original height of c. 5.5 m. Behind the columns stood one of the distinctive L-shaped pylons of the Long Temple.
Figure 3. Reconstructed plan of the Long Temple.
In the interior of the temple behind this rear colonnade the offering-tables are more densely arranged than in the front portion of the temple. They spread from side to side without the side aisles, and many were contained within small rooms, either individually or (against the rear wall) in groups of three. By contrast, in the front portion of the temple the offering-tables were arranged to allow ample access from the sides and from a central aisle. This division creates for the Inner Temple the semblance of a temple in its own right, its width (at 32 m) only 4 m less than the rear part of Luxor Temple. The density of offering-tables implies that access to them was far more restricted than to those lying to the west.

Although there is no proof for this, in the rebuilding of the temple walls the division between the two parts of the temple is being marked by raising the level of the floor of the rear part by the height of a single course of the Tura limestone blocks which are laid to complete the work of rebuilding, thus 26 cm.

**Progress of the work**

The rebuilding joined the length of wall completed in 2020 to the short length of wall built to define the north-east corner in 2017 (Figure 4). The first stage of the work was to clean away the cover of wind-blown sand in a strip c. 4 m wide to expose the line of the wall and the edges of features (including offering-tables) immediately to the south. All features were planned by Juan Friedrichs at a scale of 1:25 (Figure 7). Whilst this was progressing the builders addressed themselves to correcting an error of elevation in the rebuilt north-east corner. The substructure of small limestone blocks was found to be one course of small blocks too low (if the floor level of the rear part was to be made higher than the front part) or too high if the floor level was to be maintained at a common level. The builders therefore removed the entire course of Tura limestone blocks. The decision having been made to elevate the rear part of the temple by the height of one Tura block, an extra course of small blocks was laid and the Tura blocks re-laid on top. By the time this was completed a sufficient length of the foundations of the north wall had been exposed and planned immediately to the west for the builders to start their planned work of rebuilding. By the end of the season they had completed the rebuilding in four stages, keeping in step with the cleaning of the foundations (Figure 11).

The builders began by spreading over the concrete foundation layer a bed of clean sand obtained from a local sand quarry. Using string lines following exactly the ancient lines of the inner and outer faces of the wall they then built up the substructure of small blocks in three parallel lines with intervening gaps (Figures 5 and 11). Regular checking with a surveyor’s level ensured that a constant level was maintained identical to that of the sections of wall already built. The final height was close to that of the original upper pavement and of the adjacent desert. The final stage saw the workmen filling the gap on the north side of the wall and the intervening gaps with sand and dust from the old spoil heaps, taking care to extract anything of interest, mostly fragments of decorated stone.

The inside face of the wall had joined lengths of wall running to the south. The builders marked these by joining to the main wall short lengths of rebuilt wall which, in the future, can be extended further (Figure 5).

The north-east corner was given a more elaborate treatment (Figures 12–15). The reconstruction of 2017 included the final capping course of Tura limestone blocks. It was decided to complete a group of the internal walls to this height as a demonstration of the intended final appearance of the reconstruction as a whole. The group comprised a pair of joined rooms built against the north wall and part of the long narrow room built against the east wall. According to the tomb pictures and traces remaining on the gypsum foundation layer, each of the small rooms had contained a single rectangular offering-table, whilst the long room against the back wall had been provided with offering-tables in groups of three. Each of the rooms had been given its own separate entrance. The cleaned area also included the bases of offering-tables not contained within walled spaces.
Following the lines and other indicators visible on the gypsum-concrete foundation layer, the builders marked the lines of the required lengths of wall on the bed of sand which they had spread over the surface, using strings attached to small limestone blocks. When the walls of the two small rooms had been completed in small blocks (up to the level of the original floor) the spaces were filled with fresh sand. On the surface of each room an open rectangle was marked in small blocks, measuring 112 x 86 cm, the dimensions of an offering-table. A cement base was made inside it, reinforced with a grid of iron rods tied with wires. When this was dry, it was covered with a course of small blocks and on this were laid six of the large Tura blocks which formed the offering-table itself. The top surface was set at a height of 13 cm below the tops of the large blocks which formed the final course of the rooms. In the middle of the south side of the eastern room a threshold was inserted to mark the likely position of the original doorway, made from half-thickness blocks (thus 13 cm high). The store of large Tura limestone blocks having come to an end (and coinciding with the end of the season), the completion of these corner rooms was postponed for a future season.

*Figure 4. The western end of the north wall foundations cleaned in spring 2021. The new stonework at the right side of the picture was completed in 2020, and rests on a bed of clean sand which separates it from the original gypsum-concrete layer. View to the south.*
Figure 5. The first stage of rebuilding the north wall of the temple. The shape of the wall is created in small stone blocks from local quarries to form the foundation for a final layer of blocks of Tura limestone cut to the correct ancient size. When finished, none of the small blocks will be visible. The view is to the north-east, at the point where the rear colonnade marked the front of the rear part of the temple.

Figure 6. The same area as Figure 5, but viewed to the south and before any of the new stonework had been laid. At this point the nature of the foundations changed. The gypsum-concrete layer became continuous from one side of the temple to the other, instead of leaving an empty strip beside the north wall of the temple.
Figure 7. Plan of the north-east corner of the Long Temple following the re-excavation of 2021. Original plan by Juan Friedrichs. Compare with Figure 2.
Figure 8. Vertical photograph of part of the gypsum-concrete foundation layer. On the left the line of the temple wall crosses diagonally, marked especially by the row of holes cut for the use of levers to assist the later demolition of the temple. On the right comes the start of the walls which formed small rooms, each containing a single offering-table. Some of the rectangular patches of mortar bearing the impressions of stone blocks are clearly visible.

Figure 9. Vertical photograph of the outline of an offering-table which has been cut by chisel into the surface of the gypsum-concrete foundation layer.
Figure 10. Vertical photograph of one of the probable scaffolding post-holes <19508> on the north side of the temple wall. It lies against the impressions of the bottom course of stone blocks from the wall. Once the post had been removed the hole was filled again with gypsum mortar.

Figure 11. View to the west of the completed foundations for the final course of Tura limestone blocks along the line of the north wall of the Long Temple. In the foreground are the Tura blocks which form the completed north-east corner of the temple. The foundations run for a length of 185 m, to the pylon at the front of the temple.
Figure 12. The north-east corner of the temple is being used as a sample of how the rear part of the LongTemple can be presented to the public. The complex pattern of walls is first built with local limestone blocks to the level of the original floor and the completed rooms filled with sand. A final layer of fine Tura limestone blocks is then laid on top. View to the south-east.

Figure 13. At the north-east corner of the temple one of the small rooms is being prepared to receive Tura limestone blocks which will form a single offering-table. A reinforced cement base will support the blocks.
Figure 14. The north-east corner of the temple as left at the end of the spring 2021 season. View to the south-east.

Figure 15. The north-east corner of the temple as left at the end of the spring 2021 season. The left side wall of the room with the offering-table is not yet completed. View to the south-east.
Interpreting the Long Temple

It should be explained that the term ‘Long Temple’ was introduced into accounts of the current excavation early on. The term Great Aten Temple naturally corresponds to everything inside the huge mud-brick enclosure wall (Figure 1). In the publication of the excavations of 1932, Pendlebury (following Fairman) suggested that the ancient name for the large stone building was ‘Gem-pa-Aten’, a name found on several stone fragments recovered from the site during the excavations (COA III, 191–192). We cannot be sure, however, that the name applied to the entire building nor that, if it did, it had been created for the first layout (of mud-brick offering-tables) and then reapplied to the stone replacement. The term Long Temple, which is intended to refer to the whole stone building which was begun after year 12, reduces uncertainty.

The basic tools for understanding the temple have barely changed since the Pendlebury excavations. They comprise the plan of the building (well delineated in the plan of Ralph Lavers though at a small scale, COA III, Pl. III) and the scenes in some of the rock tombs, including the pair in the Royal Tomb (Martin 1989, Pls. 34, 47). The picture they create is clearly incomplete and contains contradictory or inconsistent elements. The process of excavation and of the constant work of writing reports does, however, draw one into considering the practicalities of how the building was used to a more intensive degree than would otherwise be the case. It is a time to try out ideas, rejecting them or modifying them in the hope that eventually a picture will emerge which corresponds to how things actually were, although there may never be proof than any of them is ‘true’.

With the Long Temple, constructed in the latter part of the king’s reign, Akhenaten and his builders created a building which (to judge from the stock of examples which we can use for comparison) was novel in its design. Did they allow themselves to be influenced by what they already had experience of? Were there existing buildings of importance which could have acted as models? A building which offers scope for comparisons is the rear part of the temple of Luxor. Through its centrality to the cult of kingship, annually repeated as the Festival of Opet, and having been built by his father, it would surely have been familiar to Akhenaten.

Like so many Egyptian temples, the Long Temple was arranged from front to back in a decreasing order of accessibility and corresponding increase in seclusion (Figure 3). At the front came a grand entrance portal, designed like a stage set for a performance of the king greeting sunrise. From its rear a pathway extended eastwards for almost 130 m through three long courts separated from each other by doorways with flanking wings rather like pylons. On either side of the pathway fields of offering-tables spread across the courts, stopping 6.25 m from the edges of the courts to leave wide margins that suggest a wish to provide public access. This would have been facilitated if gateways had been provided in the side walls. The central pathway provided Akhenaten with a route along which to lead a formal procession to the secluded rear of the temple. The rear of the temple, fronted by a separate colonnade extending for the full width of the building, formed what was, in effect, a separate building. Although the central pathway continued almost to the back wall, no surplus internal space was left at the sides, suggesting that the rear had no supplementary side entrances and was shut off from the public. The Long Temple thus conformed to the common pattern of temples in Egypt, of providing for movement, inwards towards restriction; outwards towards the realm of people.

The rear part of the Long Temple closely follows, in size and proportions, the rear of Luxor temple (Figure 16). The former had a width of 32 m; that of Luxor temple was approximately 36 m (its sides are not entirely parallel to one another). The axial distance from the front colonnade to the outside of the back wall of the former was 64 m; at Luxor, the equivalent distance from the back to the front of the deep colonnade is 75 m. The layout of Luxor temple, which was fully roofed, allowed for the accommodation of portable, boat-shaped images of the gods, something not present at Amarna where the corresponding areas were filled with offering-tables. Where the two temples converged was in the provision of many small spaces, each almost square, arranged along the sides (and
in the Long Temple along the back wall as well). At Luxor they numbered 27, at Amarna 35. The larger number at Amarna was accommodated by subdividing the total space by a cross wall (to create Courts 5 and 6) on each side of which nine extra rooms were built.

The outside walls of the rear part of Luxor temple and the attached short walls which formed the sides of the small chambers lost most of their stone masonry, mostly down to floor level, in antiquity. The most informative part that survives is the remaining stonework of the south-east corner room (Figure 16). In the currently used reference system for the decoration of Luxor temple (Nelson 1941, Pl. XXXIII; Brunner 1977, 64–65, Taf. 169–172) this room forms part of the larger suite, Room XVI, the reliefs having the reference numbers 175 for the east wall of the corner room and 176 for the south internal wall. The adjacent south wall of the corridor bears an upper and lower register of reliefs, 177 and 178 (Brunner 1977, 28, Taf. 5, 6). Although only two of the walls of the room and access corridor survive, the surplus stone that was left after the builders had dressed the surfaces in preparation for the decoration has left clear profiles which tell us where the floors were, the thickness of the doorway and the details of the cavetto cornice (Figures 17, 18). We can thus measure exactly the dimensions of the room: 2.10 m (E–W); 1.62 m (N–S), the thickness of the doorway being 70 cm. One can compare these measurements with some from the rear of the Long Temple. At the back of the Long Temple, in the area planned in 2017/2020, a pair of chambers each containing an offering-table had the internal dimensions of 2.17 m and 1.92 m. The thickness of the front wall was 90 cm. The Luxor rooms are not of uniform size. Because the temple is not a perfect parallelogram the south-east corner room is slightly narrower than most of them although the widths are similar. Once this allowed for, the dimensions of these small shrine rooms are closely similar in both temples. The Luxor rooms also supply a vertical measurement: they were c. 6 m high (Brunner 1977, 16), something to remember when trying to imagine those at the Long Temple.

The small rooms at Luxor have a distinctive character, in that they are not rooms in the accepted sense at all. Brunner, in his detailed study of this part of Luxor temple, calls them ‘Naoi oder Kapellen’ (Brunner 1977, 28). In each of them the floor, of stone blocks, was raised c. 1 m above the general floor level. The floors filled the doorways and ended in a cavetto cornice which protruded beyond the line of the doorways (Figure 19). The profile across the southernmost doorway, however, shows a possible step below the cornice which would have helped to give access and could have supported cult objects at the moment of their use. (A more detailed study of the architecture is needed to confirm if there are traces of the step at other locations in the temple.) The use of a cavetto cornice across the doorways gives to the rooms the appearance of small shrines in which objects of veneration were placed on a shelf fronted by a cavetto cornice. Well preserved examples, built of mud brick, are integral to the Main Chapel at the Workmen’s Village (Figure 20; e.g. Weatherhead and Kemp 2007, 82, 120, Figure 2.7). Another way of arranging the elements is in one of the rooms on the south side of the temple of Abu Simbel, where a continuous shelf fronted by a blocked-out cornice runs in front of the niches where presumably the objects of veneration stood. In Luxor temple, the surviving reliefs depict each chamber holding one or more cult images before which the king performed an act of deference in which a particular object or substance was presented (Figure 17). The raised floors, which stood at 1.09 m above the floor of the access corridor in the south-east corner room (thus somewhat above a man’s waist height), would more comfortably have accommodated statues and other objects without them having to be of large size. As for the number of these rooms (27) they have been called ‘Ennead Chapels’ (Bell 1997, 149, Fig. 56, no. 22; 156, n. 81, 291) although around half of them are arranged in groups of four.

The shrine-rooms at Luxor are a valuable point of reference when considering their equivalents at the Long Temple. We can gain some idea of how different the experience was at the latter even though the basic architectural spaces were similar. The waist-high floors at Luxor supported statues or other cult objects which faced the officiants during temple ceremonies. At the Long Temple spaces of near-identical size substituted rectangular stone offering-tables of probably similar height. In order to place offerings on the tables the officiants had to enter
the doorways and the narrow spaces around the offering-tables. In both places the walls of the narrow chambers soared upwards but here came the great difference. Instead of ascending into gloom (at Luxor, but were there small roof lights?) each chamber offered the contrast of bright sunlight and shadow within a carved and painted shaft. Despite the differing ambience, however, a very similar offering ceremony was performed in front of these shrines, to the total of 35 in the case of the Long Temple.

In his studies of talatat-blocks from El-Ashmunein, Hanke has developed the work of identification of blocks begun by Roeder, leading to the suggestion that a group of blocks could perhaps have come from some of the actual small rooms at the back of the Long Temple (Hanke 1978, 106–125, Abb. 30–41; following Roeder 1969, Taf. 17, 18). The reason for the identification is that the blocks are decorated on both sides, implying a wall thickness of \(c. 25\) cm. The foundations for the actual walls themselves, however, have a uniform thickness of 90 cm. Hanke's solution is to imagine that the foundation course of stone blocks, laid directly on the gypsum-concrete foundation bed, was wider than the wall that stood upon it. One cannot prove that this was not so. On the other hand, one can judge that the overall appearance of the giant concrete foundation system that extended continuously from the front to the back of the Long Temple represents a carefully thought-out system of building which created a uniform monumentality. One part of this was near-uniformity of wall thickness. The comparison with Luxor temple also encourages one to think that the proportions were similar, each small room rising to a considerable height, necessitating reasonably thick walls for the chambers (90 cm for the Long Temple compared to 70 cm for Luxor). The subject-matter of this group of blocks is the royal family offering to the Aten (mostly lillies), which is perhaps to be expected from a range of architectural locations at Amarna, not necessarily a temple.

Egyptian temples were pre-eminently places of performance ideally led by the king. What was to be done, what words were to be spoken was recorded in books. The individual acts generally seem to have resembled one another. What was important was that they were numerous, stretching out the overall performance to give it greater dignity and significance. The performance chain was an end in itself. Satisfaction came from completing the schedule as much as from contemplating the meanings that it represented. At Luxor an act of deference was evidently performed before each of the 27 images or image groups (how often we are not told). This number alone implies that the acts were delegated and not performed by the king in person. Moreover, the plan of the temple implies that the 27 shrines were not visited in a single sequence. The set was broken down into groups of three or four chambers which were integrated differently with other chambers depending on where in the temple they stood. They must also have played a subordinate role in the overall purpose of Luxor temple, which was to provide a solemn space for the annual re-enactment of the renewal of the king’s \(ka\) during the Opet Festival (Bell 1985).

As far as we can tell from the surviving evidence, Akhenaten had dispensed with the need for aids to memory for the myths and festivals recognised at Luxor (and elsewhere). What remained at the rear of the Long Temple was space in which to develop a satisfying, in other words lengthy, performance directed towards the honouring of the Aten, a being who did not require images in the form of statues. Luxor temple provided a template for repetitious ceremony made up of numerous episodes which were variations on a single action: holding and thrusting forward a distinctive object or sample of a commodity whilst, in the case of the Amarna ceremony, standing in front of an offering-table on which were piled food-offerings and incense. The selection of objects and commodities was based on tradition, including those things which appear on the walls at Luxor. One of them was a broad collar with fastening, known in real specimens from the tomb of Tutankhamun, for example (e.g. Reeves 1990, 150–152; a convenient summary is Wilkinson 1971, 108–113, Pls. XXXIII–XXXVII). They are also known from pictures as being objects available to the king in his palace (e.g. RT I, Pls. XVIII, XXVI; RT II, Pls. XI, XIV; RT III, Pl. XXXIII; RT VI, Pl. IV); and from pictures of the objects included amongst royal funerary equipment (e.g. Martin 1989, Pl. 26). Scene 178 in room XVI at Luxor shows Amenhotep III presenting a broad collar (on a tray) to a goddess (who is already wearing one, Figure 17, top, scene 178; cf. Figure 21). There is no equivalent scene at Amarna of Akhenaten doing the same, but we cannot doubt that on occasions he (or someone deputising for him) did
so. Two broad collars on stands are amongst the equipment shown in corner rooms in the rear part of the Long Temple (Figures 21, 22). With them, we move perhaps as close as the Aten cult gets to admitting to a human-like recipient to the offering ceremonies.

The parallel with Luxor suggests that each of the small rooms was the focus of one of the acts which Akhenaten is shown performing in the reliefs. In performing them he (or his representative) would face towards all four cardinal points depending on the location of the room. Those against the north and south walls contained the only offering-tables within the temple which deviated from the north–south orientation of their longer axis. Each room saw the performance of an act of deference to the sun god: sprinkling incense into a burner or presenting an incense-filled censer, presenting one from a range of objects: a broad collar, a sceptre in the shape of the hieroglyph for ‘power’, a pair of ornate manufactured cartouches, vases containing unguent, incense cones, a water-filled vessel over which lotus flowers were draped, a full bouquet of flowers (Spieser 2010; Vomberg 2014; the ornately manufactured cartouches are in RT IV, Pls. XXXI, XLIV). The number of rooms (35), however, precludes the possibility that he performed each act himself. Moreover, as the text of the first set of Boundary Stelae admits, he envisaged his life after the creation of Akhetaten as including times when he would not be resident there (Murnane and Van Siclen 1993, 41, 43; Murnane 1995, 78, 79; Hagen 2016, 166). There could have been times when the cult of the Aten at Amarna was carried on without him.

The performances in temples of the New Kingdom followed a prescribed and written order, well known, for example, from the temple of Seti I at Abydos (David 1981, 166–168). The various texts were to be recited by priests, one of whom, a ‘lector-priest’, had specific responsibility for the written matter itself. Sources from Amarna reveal little on the composition of administrative bodies there. The Karnak building blocks are more informative and document the existence of a ‘chief lector-priest’ for the Aten temple(s) there (Smith and Redford 1976, 95–99). It is likely, therefore, that a written book of instructions had been prepared for the Long Temple. When we note the similarity between the materials used for earlier temple ceremonies (specifically Luxor temple) and the materials used for the cult of the Aten we can assume with some confidence that the written content was similar also.

Much of the space in the Long Temple was occupied by limestone offering-tables of a standard size (nominally 112 x 86 cm). The total of those not within separate walled spaces was 756. On practical grounds we can exclude these from the duties of the priests who must have assisted Akhenaten (or replaced him when absent) in carrying out the main ceremonies. We can conclude that the mass of general offering-tables was not part of a ceremony in which individual acts of deference to the deity were performed at each one. In the pair of scenes in the Royal Tomb which depict the life of the temple the general offering-tables are shown being attended to by many stooping figures of men whose attention is not on the king but on the tables and their offerings (Martin 1989, Pls. 34, 47). Could they be restocking the tables with ‘offerings’ as the food was removed for consumption (although this part of the routine is not shown)? The temple would thus have provided for the king (and his representatives) to lead a lengthy performance of offering to the Aten in the specially designated rooms at the back and, at the same time, to have accommodated a feeding ceremony (arranged each day?) to which a proportion of the city’s population was invited. The building of the all-stone Long Temple brought more formality (thus discipline) to the more informal feeding ceremony which had previously been centred on the earlier, more expansive but open field of mud-brick offering-tables which must have been more difficult to supervise.

According to the tomb pictures (mainly Penthu but also Meryra) wooden tables (with four curved legs) were also available in large numbers to hold offerings (RT, IV, Pl. VI; I, Pls. XI, XXXIII). Were these brought out when the crowds were larger?

It should not escape notice that, after the end of the Amarna Period, the development of Luxor temple continued, in its plan following the general layout of the Long Temple. The colonnade of Tutankhamun and Horemheb replaced the long processional pathway between the fields of offering-tables. The forecourt and pylon of Rameses II replaced the pylon and colonnades at the front of the Long Temple. Whether there was any underlying continuity of meaning cannot be answered. We might be looking at examples of a widely accepted model of how flows of human energy should be directed within large city temples.
Figure 16. The plans of the rear part of the Long Temple (left) and the rear part of Luxor temple (right) at the same scale. The side walls at Luxor have largely been lost to later modifications, the best preserved part being the south corner. The areas of raised floor are largely restored. The Luxor plan is a composite from several sources, including Nelson 1941, Pl. XXXIII.

Figure 17. Above: sections through the surviving masonry of the south room of Room XVI of Luxor temple (aft Brunner 1977, Taf. 6, 7). The completion of the profile of the foundations relies on Arnold 1991, 112, Fig. 4.3. Below: north–south restored section across the rear part of the Long Temple. The two sections are at the same scale.
**Figure 18.** Luxor temple, part of the rear wall of Room XVI. The outline of the dividing wall, the raised floor and cavetto cornice are preserved from how the builders dressed the surface of the walls prior to carving the decoration. Photograph by Juan Friedrichs.

**Figure 19.** Luxor temple, part of the preserved façades of three of the small rooms on the south-east side. The red circles indicate parts of the cavetto cornice which originally ran continuously and fronted the raised floors inside each room. Floors and partition walls were removed in later times. The smallest of the red circles is the location of Figure 18. Photograph by Juan Friedrichs.
Figure 20. One of the shrines in the Main Chapel at the Amarna Workmen’s Village. Objects of veneration were placed on the shelf inside the room, the shelf being marked with a cavetto cornice. View to the north-east.

Figure 21. Broad collars used as temple offerings. Left: two collars on stands in the rear part of the Long Temple, as shown in the tomb of Meryra (after RT I, Pl. XXVIII). See also Figure 22. Right: Amenhotep III presents a collar to a goddess in one of the small chambers that make up Room XVI in Luxor temple (see also Figure 17, top part).
The main offering-tables at the rear of the Long Temple and a possible granite naos

The remaining spaces at the rear of the temple were occupied by offering-tables not standing within walled spaces. They are grouped around two areas, central to the two divisions of space in this part of the temple, Courts 5 and 6. The westernmost space is marked on the Lavers plan by a set of five concentric rectangles, the outermost measuring 6.90 x 4.90 m (COA III, Pl. III). The easternmost was completely destroyed. They are described in the excavation report thus: 'Towards the back of each court was a clear indication of a great altar surrounded by offering-tables' (COA III, 15). It remains to be seen (from future re-excavation) if the preserved area shows marks of a continuous cover of limestone blocks from a platform or if the foundations are as neatly delineated as in Lavers' plan. (Archive photograph 1932/7 = COA III, Pl. XXVIII.4 seems to support the former although the level of the camera is too low for one to be sure.)

The area of the ‘great altars’ is depicted in the tomb of Meryra (RT I, Pl. XXVIII = our Figure 22) and (in a simplified form) in the tomb of Panehsy (RT II, Pl. XIX). The appearance of the Meryra altars (or offering-tables) invites the interpretation that they were of openwork form, with separate legs and cross-bars; thus, that they had most likely been made of wood (perhaps covered with gold leaf). There is, however, an alternative, which is that part of one of the large offering-tables still remains close to its original location. It concerns a large rounded granite lump with rough surfaces (Figures 23, 24) that rests on the layer of wind-blown sand in a location which is c. 3.5 m from the nearest corner of the outermost rectangle that is marked on Lavers’ plan (Figure 2). It appears in this position on the 1935 aerial photograph of the temple (and is visible in the background of two of the EES archive photographs, 1932/32 and 1932/43). It has the approximate dimensions 1.00 x 0.85 x 0.70 cm, and has been given the identifying unit number [19512]. In a personal communication Kristin Thompson, who notes that the lump is not altogether rounded but tends towards two rough faces forming a corner, suggests that it could be the remains of one of the offering-tables. If this is the correct explanation, it follows that this large block of granite was broken into pieces in this place and the pieces were removed during the 1932 excavation into the dumps which flank the temple site. The same would apply to the second granite block which had once stood further to the east.

If the provisional interpretation of the concentric rectangles is correct, that they mark where a layer of limestone blocks had been set, it would follow that the granite block rested on a limestone base and could have been smaller than the base.

Amongst the many fragments of carved stone recovered from cleaning along the nearer edge of the northern dumps in this part of the site are several of granite which could derive from the cavetto cornice which the tomb pictures show surrounded the top of the pair of large offering-tables (Figure 26). The piece that most likely is from a cavetto cornice (S-14949) was found in the thin surface layer of wind-blown sand close to the large granite lump. Another fragment comes from a corner of a protruding edge (S-15509, Figure 28). Could the table shape shown in the tomb pictures have been carved into the granite? This fragment would then have come from one of the legs. These possibilities have to be set within a consideration of the strictly limited space available for sculpture in this part of the temple. They encourage explanations of maximum economy, in particular that the granite fragments come from two duplicate examples of a single kind of object.

That said, one fragment in particular (S-15692) does not fit this picture. This is part of a base of a statue on which was preserved a pair of feet which, from their tiny size and absence of sandals, likely represented one of Akhenaten’s daughters in a family group (Figure 25). The figures were joined to a back surface. One is reminded of the family statue groups that accompanied some of the boundary stelae. This possibility makes it particularly hard to estimate how large the group was, given the disproportionate smallness of the daughters. This type of statue does not accord with the shape of the large offering-table even if the sides were carved in relief which expressed the three-dimensional form of the legs and cross-bars of the table. The alternative shape into which the statue could have fitted is a naos, of the kind represented by the quartzite example which contains the statues of
Bek and his wife Taheret (Krauss 1986), and is also represented with greater depth and scale in the tomb of Any (RT V, Pls. VIII, XX). A naos would also accommodate better the corner fragment S-15509, the longer of the two sides preserving traces of a continuation of the decoration beyond the paired cartouches. It would have come from one of the sides. The other granite fragments would fit a naos equally as well as would the large granite offering-table.

The possible use of the naos-form at the Long Temple has been mentioned before. The spring season of 2019 saw the discovery of an unusually large piece of indurated limestone of puzzling shape (S-12758). It lay in debris which filled the foundation trench for the northern wall of the temple, undisturbed probably since the temple was demolished after the end of the Amarna Period. It measured 68.9 x 80.6 cm, with a maximum thickness of 32 cm. The suggestion was made at the time that it belonged to a naos. If it had contained a statue group of the royal family it is likely to have been larger than the granite naos suggested as the framing for fragment S-15692 (Figure 29).

In summary, the rear courts of the temple are so thickly provided with offering-tables and dividing walls that little space would have been left for sculpture. The large rounded granite lump that, on the grounds of its weight, might not have been moved far from its original location has to be accommodated somewhere, and a granite offering-table in the middle of one of the courts disposes of it satisfactorily. The area has provided evidence for something possessing a granite cavetto cornice and this can be regarded similarly. This still leaves other granite pieces that are not so easily given a home: statue fragment S-15692, and vertical, inscribed edge piece S-15509. A third piece, S-16042, could belong to either group (Figure 27). It comes from a hieroglyphic inscription that ran horizontally from left to right (in contrast to the inscription on cavetto cornice fragment S-14949). It contains parts of two lines. On the upper line is the phrase ēnh ḫt(wy), ‘Long live the (twice royal) father’ (a reference to the Aten, often in the rock tombs, e.g. Meryra, RT I, Pl. XXXV; Huya, RT III, Pl. XIII; translated by Murnane 1995, 134). The lower line preserves part of the text [ɪtn] ēnh ṯrt [ḥb(w)-sd], ‘great and living Aten who is in festival’, an epithet which, it is claimed, is found with the early form of the names of the Aten (COA III, 184–185; Wegner 2017, 38). Fragment S-15509, the corner piece, is also inscribed (twice) with the cartouches of the Aten in their earlier form. It will be some time before a full inventory is possible of the forms of Aten names in the mass of fragments so far recovered from the excavations at the temple (and not forgetting that a greater proportion still lies in the old excavation dumps, some of them now inaccessible beneath the modern cemetery). In the meantime, we should not exclude the possibility that the changes in Aten names were not introduced rapidly or consistently. An example of the later name from a context which seems to derive from the early period of building is S-12233 (Horizon 15, Autumn 2014, 3).

As the study of the temple has developed since 2012, from time to time the question has been considered, was the main stone temple built in a single stage or might the parts towards the front have been added? If the answer is yes it might remove the need to imagine that a smaller stone temple had been built during the early years of the occupation of Amarna and then demolished to make way for the later temple, which seems to have been begun in or after Akhenaten’s regnal year 12. We have now uncovered and recorded the entire length of the foundation trench for the north wall of the temple and a short section of the south wall, where it joins the front pylon and the foundations for the front colonnades. For the most part the floor of the foundation trench is covered with the original gypsum-concrete foundation layer. An important gap is where the north wall had joined the front pylon but this junction is covered by a complete length of foundation concrete on the south. We have found no sign of a break or join in the concrete such as would suggest an interruption in building. The entire 200-metre long building, with its hundreds of offering-tables, seems to have been planned in detail from the beginning, and the plan to have been followed by the builders without changes or corrections. The rapid hardening of gypsum when mixed with water must have required, on the part of the builders, full and confident control over this initial stage in the construction of the temple. This reinforces the view that the main stone temple was built as a single edifice.
Figure 22. Courts 5 and 6 at the back of the Long Temple, as depicted in the tomb of Meryra. A large offering-table, shown as if of openwork design, stands in the centre of each of the two courts (after RT I, Pl. XXVIII). See also Figure 21.

Figure 23. Large piece of granite (now numbered [19512]) standing in the rear part of the Long Temple, where it was left by the 1932 expedition. View to the west.
Figure 24. The large piece of granite [19512] in the rear part of the Long Temple. When viewed from certain directions one could think that the underlying shape is oblong rather than rounded like a boulder.

Figure 25. S-15692. A granite fragment which preserves a pair of small feet standing on a flat surface which is starting to rise towards the back. Do the feet belong to a princess in Akhenaten’s family group where they stand against a solid background? Photo by Andreas Mesli.
Figure 26. Granite fragments from the rear of the Long Temple. S-14949 was found on the surface close to the large granite lump. The other pieces come from the 1932 excavation dumps. Drawings by Juan Friedrichs.

Figure 27. Granite fragment S-16042, from an excavation dump on the north side. Drawing by Juan Friedrichs.
Figure 28. S-15509. Two faces (set at right angles) from a corner or edge fragment (see Figure 26). The left picture shows the left side; the right picture is from the left front face which probably contained a carved figure.

Figure 29. S-12758, a large piece of worked indurated limestone found within the foundation trench of the north wall in 2019. It is probably from the side of a naos and, if so, would have contained a statue of the royal family.
Other stone fragments found and recorded

The cleaning of the foundation trench for the last section of the north wall and of adjacent areas of the gypsum-concrete foundation layer produced (in addition to those in granite) many broken fragments of decorated stone, primarily of limestone.

One fragment came from a cornice of indurated limestone with compartments cut to receive inlays (S-16041, Figure 30). Many pieces of this kind have been found in the past, by the present (e.g. S-8326) as well as by earlier expeditions, but, when the location is known, they come from the front part of the temple. This is the first fragment recorded as coming from the rear of the temple. Since it is still not clear from what kind of object these pieces come it is hard to assess its significance. The front area of the temple has also produced many inlays of quartzite and grano-diorite which had been made to fit the spaces in these indurated limestone cornices, to create a pattern of parallel feathers. Pieces of green marble of similar shape also from the dumps on the north side of the north-east corner could have been their equivalents (Figure 31).

The cleaning included an area which belonged to the rear colonnade which stood in front of one of the L-shaped pylons which divide the temple into separate sections. The debris in this area, which included the edge of old Pendlebury dumps, contained many fragments of limestone which derived from the shafts of papyrus-bud columns. Some could be recognised by the sharply angled ridge separating pairs of plant stems; some could be recognised by the overlapping angled strips that represented the leaves at the base of the plant stems. It was in this area that, in 2017, the expedition recovered a large fragment from the base of a capital from a column of this type which had lain on the surface since 1932. It appears in photographs of that year.

Also notable was that several decorated fragments were carved in a limestone of better quality, whiter and finer-grained. A few fragments had come from a scene showing chariots (Figure 32). Others point to the existence of one or more scenes of the countryside, which included trees (one with a seated man underneath, Figure 33), the zig-zag pattern denoting a body of water (Figure 34) and papyrus plants (Figure 35). These fragments add to the impression that the rear colonnade and associated pylon marked a major division within the temple as a whole and that some flat surfaces carried a wider range of subject matter than conventional scenes of the royal family making offerings to the Aten. Many of the most interesting fragments, of carved limestone and granite, were drawn by Juan Friedrichs and photographed by Andreas Mesli.

As new pieces came from the cleaning, many were passed to SCA conservator Ali Farouk. He first cleaned them (usually of patches of dirt cemented by salt encrustation) and then coated the surface with PVA, which helps to consolidate especially layers of paint.

Time was also spent in the magazine, recording by drawing and by photography objects and stone fragments from previous seasons. Particular attention was paid to two categories. One was of fragments of alabaster, the other of pieces from mud jar-sealings. Some of the alabaster fragments come from one or more panels which showed the royal family and Aten discs with rays; also offerings that included grape bunches. One fragment was from a panel that served as a balustrade (Figure 36). Another fragment showed an archer’s bow (S-8113, Figure 37). This is significant because in 1932 the Pendlebury expedition found up to six fragments from a scene of foreign captives, one of them including a bow (COA III, 18–19, nos. 32/51, 32/52, 32/62, 32/70). The subject matter suggests paving stones or the treads of stairs on which the king would walk, trampling his enemies as he did so. The context of S-8113 suggests that it had been incorporated within the layer of sand which had been used to raise the floor of the later stone temple and thus had originally belonged to the earlier temple.

The mud jar-sealings derive from several past seasons, primarily those from excavations towards the front of the temple. Marzia Cavriani is undertaking a detailed study of them and this season examined the entire collection, drawing many for the first time. Andreas Mesli photographed any that he had not photographed before.
Figure 30. S-16041. Fragment of a cornice made from indurated limestone. The surface has been cut to receive inlays of a different material, perhaps of green marble (Figure 31). Photo by Andreas Mesli.

Figure 31. S-15383. An inlay made from green marble. It had a shape which would have suited it to be fitted within a cornice of the type represented by S-16041 (Figure 30). Photo by Andreas Mesli.
Figure 32. S-15422. Limestone fragment from a scene that included a chariot. Photo by Andreas Mesli.

Figure 33. S-15742. Limestone fragment from a scene in which a man sits beneath a tree, his hands on his shoulders. Photo by Andreas Mesli.

Figure 34. S-15627. Limestone fragment from a scene that included a body of water. Photo by Andreas Mesli.

Figure 35. S-15649. Limestone fragment from a scene that included a papyrus marsh. Photo by Andreas Mesli.
Figure 36. S-8106. Alabaster fragment from the side of a balustrade, marking the angle of ascent at the top. Photo by Andreas Mesli.

Figure 37. S-8113. Joined alabaster fragments carved with the design of a bow. Photo by Andreas Mesli.
Acknowledgements for sources

Help was given in providing information and copies of literature by Kristin Thompson, Marsha Hill and Pamela Rose. To Kristin also goes the credit for suggesting that, in the large piece of granite that still stands near the back of the temple, we might have the remains of a large granite offering-table. Juan Friedrichs, on a visit to Luxor, visited Luxor temple and provided information about the architecture of the rear part. Pamela Rose sent a photograph of the shelf and niches in one of the side rooms at Abu Simbel.

Abbreviations


Website references

For the indurated limestone fragment (S-12758), the likely part of a naos, see:
23–25, Figs. 29a, 29b.

For the fragment of indurated limestone cornice (S-8326) and associated stone inlays (quartzite and grano-diorite), see:
10, 20, Fig. 32.

For the fragment of limestone lintel or architrave bearing the later form of the Aten names (S-12233) and from a context which suggests that it derives from the earlier phase of the temple, see:
10, 17, Fig. 29

Printed references


