British Mission to Tell el-Amarna

Report on the Great Aten Temple East Gateway Excavation, Autumn 2021

Gathering photographs for an aerial mosaic at the site of the East Gateway in the enclosure wall of the Great Aten Temple. View to the south.

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Introduction and background

A major question behind our work is why the stone temple is surrounded by so much seemingly empty space? An answer that is worth exploring is that it was to provide for the gathering of very large crowds from the city. Yet the main entrance to the enclosure on the west side, provided with large brick pylons placed only a short distance in front of the monumental front of the stone-built Long Temple, seems poorly designed for large crowds.

At the end of his 1932 season, John Pendlebury examined on behalf of the Egypt Exploration Society a gateway in the enclosure wall on the far side (thus at the back) of the temple precinct. The work in the area is not reflected in his 1951 publication, as the East Gateway report comprises only two short sentences and lacks illustrations. The eastern entrance is not included in the final plan made by his architect Ralph Lavers (Pendlebury 1951: Pl. I); one photograph was taken but not published (but included here, Figure 1). The gateway is, however, just visible on an aerial survey by the Royal Egyptian Air Force (Pendlebury 1951: 6; Pl. XXIV.2). Likewise, the report does not mention objects found during the fieldwork in contrast with these discovered around other parts of the grand temenos (Pendlebury 1951, 17–20).

The existence of a gateway would, however, fit a pattern of access to the temple from the city by means of routes which skirted the eastern edge of the city (Figure 2). The location of the northern house of Panehsy, a principal administrator of the temple, close to the south-east corner of the enclosure wall, is a pointer to the existence of this thoroughfare. Moreover, within the temple enclosure, including around the East Gateway, a superficial examination of the flat ground reveals irregular spreads of small sherds which suggest human activity but activity which did not require brick buildings.
Figure 2. Map of Amarna showing how traffic within the city could have taken people to the East Entrance of the Great Aten Temple enclosure.
Figure 3. Plan of the enclosure of the Great Aten Temple. It shows the main features within the enclosure and the main areas of the 2021 season which are outlined in red: the excavation of the easternmost part of the Long Temple and the East Gateway.
It was decided, therefore, to open this year a small exploration at the very back of the temple’s enclosure wall to run simultaneously with the excavation and rebuilding work of the Long Temple (Figure 3). The investigation was conducted between 27 September and 4 November 2021 with the assistance of five to seven workmen and covered a total area of 125 m² that comprised 5 squares of 25 m² each. It first started with two encompassing the enclosure wall (FA38–39) and two in its interior (EZ38–39). A further exploration was rapidly expanded into FB38 due to the presence of features extending in that direction but, because of time constraints, square FB39 was not opened and the spoil heap of EY39 was removed while one a little to the south was left untouched.

The main objectives were thus to re-examine Pendlebury’s former excavation at a place where ‘a small mud-brick ramp was leading to a threshold in which were two pivot-holes’ (Pendlebury 1951: 6). The other goal was to start obtaining evidence on what had been happening in a zone largely empty of visible features when seen from the ground and from above.

The initial setting out of the grid squares was done by total station and the grid extended by tape measure, in particular for FB38 and EY39. Prior to excavation, a topographical survey was undertaken across each grid square. Workmen were then employed to remove overburden layers, which usually consisted of wind-blown sand and/or backfill from the 1932 season when recognisable. All archaeological deposits were removed by trowel and brush and were 100% sieved for finds. Hollow features, for example, pit cut <19705> or foundation trenches, were initially sub-sectioned before being fully excavated in order to have sectional information. The entire area was planned at different stages at a scale of 1:25. The excavation was backfilled after the completion of the work, using spoil from the excavation and clean sand. The unit numbers used during this season were a continuation of those employed in the Spring 2021 season. No former numbers were reused but, when relevant, similarities and equivalences were noted between the newly-created ones.
Amarna Period

In terms of the temple-life phasing, the excavation carried out in the far east temenos found only evidence of one phase whereas several have been observed, recorded and discussed in the space between the front of the temple and the Sanctuary area. It appeared that the first human activity on the unused land was marked by the foundation trench <19719/19721/19797> that would hold the narrow enclosure wall [19907]. The plan and profile of the cut were irregular with a full width extent of c. 3.40 m while the wall was 2.64 m wide. A similar measurement was noted for the western enclosure wall [16284] in 2018 although Pendlebury previously wrote it was of 2.50 m. It was possible to observe that the foundation trench was filled with at least two different layers: one of almost clean sand (19720/19796/19798) and one of crumbled mud bricks mixed with greyish sand and medium stones (19709/19718/19723). It is quite possible that comparable strata were to be found further down where the sand deposits would have acted as a sort of natural bonding between the different levels giving a better stability to the whole structure (Figures 4–6).

Incense was found in several deposits. This material is no longer found in abundance on the site, despite it being a common substance likely used in temple rituals. It was found in raw lumps, on pot sherds, on charcoal and, mainly in this sandy filling (19796), in processed form – as tiny curving rods or filaments resembling dark ruddy-orange glass (Figure 7). Margaret Serpico has suggested that this shape had probably resulted from the incense being passed through a strainer in a viscous form, hence explaining the 2 mm-diameter size. Similar material was found in almost all ditches, pits and postholes of Phase I at the Stela Site which is located to the west (Figure 8; Spring report 2012: 23, Figure 24; 28). The fact that these finds (object no. 43722) were recovered from the foundation trench fillings might suggest that it could have been used as a rubbish pit connected with the use of the Stela Site. Of course, the still-standing eastern mud-brick enclosure wall does not necessarily date to Phase I but rather seems to have been built later.
Figure 6. Sections of the foundation trench of the enclosure wall [19907].
**Figure 6 (continued)**. Sections of the foundation trench of the enclosure wall [19907].

**Figure 7**. Incense filaments found in the foundation trench of the enclosure wall. Photo by Anna Hodgkinson.
Pendlebury had already pointed out the possibility that the temple precinct had expanded, referring to the 1935 aerial photograph on which can be seen shallow depressions running in the same direction as that of the current enclosure wall with the eastern linear depression passing beneath the court behind the Sanctuary’s first period Altar. The original trenches would have been 100 m west and 10 m both north and south inside the new temenos although the south line is invisible compared to the rest (Pendlebury 1951: 5–6). This likely foundation cut is still visible from above (Figure 8).

A second argument in favor for such an expansion of the temenos is given by Henry Frankfort (Pendlebury’s predecessor at Amarna) when describing the plan of house T39.1 and its closeness to the northern enclosure wall, especially since the house of Panehsy, first Servant of the Aten, located on the opposite side to the south, is quite far from the precinct wall (Figure 8; Pendlebury 1951: 25, Figure 5). The extension of the northern temenos to the north destroyed the south part of house T39.1 and a remodeling had to be made which took into account the angle of the new temple enclosure.

Figure 8. The eastern part of the Great Aten Temple enclosure and its associated buildings. North is towards the top.
As with most buildings at Amarna, the temple precinct was made from mud bricks, a material easy to produce in grand quantity as the raw material was easy to find. While the clay extracted from the Nile banks made the best adobes, some were also produced using desert mud but, in both cases, the brick-making process remains the same. The mud was mixed with sand, gravel or tiny pebbles from the desert and sherds of different sizes to which water and straw were added to bind the whole together. The mixture was then generally put into a standardised rectangular wooden mould. It was then lifted off, leaving the brick to be dried in the sun for eight to nine days and turned on its side for optimal drying (Emery 2009).

The narrow mud-brick enclosure wall [19907] was built from squarish and rectangular bricks (respectively 20 x 18 x 12 cm and 36 x 16 x 12 cm) vertically arranged on their sides within the foundation trench. They were then covered with mud mortar for soil insulation and consolidation of the substructure after a further horizontal north/south row of bricks had been added. The bricks used for the elevation were then laid horizontally in an east/west direction probably following a running stack pattern (Emery 2011: 4, Figure 1). Some of the bricks show the impressions of grass layers between brick courses, probably to assist good adhesion within the superstructure itself. As with other large buildings at Amarna, the outer façade of the wall possessed a plinth set forward by one row and composed of two courses overlaying the substructure. The foundation courses ran continuously beneath the gateway (Figures 6, 9–10).

**Figure 9.** (a) View of the enclosure wall [19907] foundation facing north-east; (b) at the south end facing west; (c) at the north end facing west.
Figure 10. View to the south-west, of the East Gateway at the end of the excavation. The gateway itself is occupied by modern tyre tracks which cross at a sharp angle.

Two buttresses were discovered abutting the eastern façade despite the fact that Pendlebury wrote that no such features had been part of the Great Aten Temple’s enclosure wall (and even though his 1932 photograph seemed to demonstrate to the contrary). Moreover, on the excavation plans of house T39.1 and the house of Panehsy, projections are shown at the easternmost ends of the north and south temenos walls (Pendlebury 1951, 25, Figure 5; Pl. XI). While one might consider them as potential buttresses, there are no such representations depicted in the rock tombs. Only re-exavation might give new information on the subject. The projecting walls exposed during the 2021 season are of rectangular shape and of almost the same dimensions (Figures 4–5; 10). The northern one [19908] measures 1.86 x 0.92 x 0.42 m and the southern one [19909] is 1.90 x 0.90 x 0.50 m. Both appear to have been built directly over the desert surface (19626) or a thin layer of sand (19701). No foundation trenches were observed, though small mud mortar nodules were noticed at some points and interpreted as possibly increasing adherence between the ground surface and the buttresses. In other words, it was a mud-mortar bedding for the structure. But, in reality, the excavation at the south angle of the enclosure wall [19907] and the buttress [19909] showed a discrepancy with the northern buttress. In this particular area it seems that disturbance has occurred, perhaps through animal digging or the previous excavation as described below (Figure 4 and 11).

A 2.30 m-long mud-brick wall [19910] abutted at right angles the north-eastern edge of the south buttress [19909]. This structure, measuring 0.30 m wide by 0.40 m high, presented the same characteristic construction as that of the buttresses: no foundation trench and partial mud mortar nodules as substructure. Preserved over two courses, this feature could be the remains of the south edge of Pendlebury’s ramp since a layer made of a pebbly-stony-sandy mud combined with a few mud bricks (19703) was observed in a corresponding position towards the north. The same layer was noted in the c. 3.30 m gap left between the two buttresses, almost reaching the edge of a mud-brick platform of which the width was identical to that of the enclosure wall [19907], including the plinth. The stone threshold with its two pivot-holes was not rediscovered, however. A fragile rectangular structure, 59 x 52 x 5 cm, composed of three or six sandstone pieces, was observed near the south-east corner of the north buttress [19908]. A few similar fragments lay close to the south buttress [19909]. It is possible that these are the poor remains of Pendlebury’s threshold; likely visible on his photograph by the whiter line in the centre of it (Figure 12).
Figure 11. (top) north section of the buttress [19909] and south section of the buttress [19908] at the bottom.
Once all these structural elements had been built, a mud floor had been laid on both sides of the enclosure wall. Inside 19624/19625, from west to east, it covered either directly the compact desert surface (19626/19627) or a yellow sand deposit (19902) overlying a fine gravelly layer (19903) which was on the top of the desert. The explanation for the gentle rise towards the east was the presence of the platform. A few activities seemed to have taken place at this entrance since two roughly circular fireplaces, respectively (19799) and measuring 46 x 50 cm and (19794) and measuring 42 x 44 cm, were found on both sides of the pathway. Likewise, the pot-holes <19727> and <19730>, measuring 25 x 22 x 17 cm and 28 x 23 x 20 cm, were observed close to the north fireplace (19799) and a multitude of others further south. The pit <19995>, measuring 34 x 27 cm and 20 cm deep and containing pieces of charcoal at its bottom, could be also added to these pot-holes. Nonetheless, some of these circular holes, despite their similarities in shape and depth, could also have been either animal burrows or very small post-holes for ephemeral structure(s). With the lack of material found within, it is difficult to distinguish between the two possibilities even if a circular pattern seems to be emerging with a view from above (Figures 4–5).

The internal area showed a few rodent tunnels but also a larger burrow, c. 1.58 x 1.50 m, in the north part which had probably disturbed a former sub-circular pit, c. 1.16 x 0.82 m, since the overall cut <19705> contained two deposits: (19704) attributed to the burrow itself (it was possible to follow its direction in the foundation trench fillings), and (19710) interpreted as the original filling of the pit. This latter consisted of greyish sand including some mud-brick fragments, small stones and sherds. Nine fragments of incense bowls were present in the upper layer. The whole was then covered with a yellowish-grey sand deposit (19702) containing pebbles and a few mud-brick fragments as well as some artefacts (Figures 5 and 13).

The mud floor 19714 outside the boundary wall was thicker and seemed not to have been made with the same care as the interior, as it was composed of many pebbles and gravel mixed with a little sand. Two burnt patches (19733), overlying a fine yellow sandy layer (19701), ran in the same direction as the mud-brick wall ramp (19910) but their function remains unclear. Another burnt area was found towards the south-west of the latter ones. The darkest circle (19934) probably extended further and showed as brownish sand (19935). Both deposits seem to have covered either the mud floor 19714 or the sandy layer (19701). These burnt zones will be fully excavated in the future in an attempt to better understand the possible ramp as well as the explanation of the burning.
Figure 13. View of the north section of the pit <19705> during (top) and after (middle) excavation. The bottom part shows its sections.
Eventually, the internal and external mud floor would have lapped against the edges of the different structures. In the case of the enclosure wall, some traces of the floor 19624/19625 were still visible at the junction between the first and second course of mud bricks, having been put over the foundation blocks before having been finished with a white coating. The whole enclosure wall, buttresses and long wall had also been plastered with white (19912/19913, 19914, 19915, 19916), as shown here and there on their respective façades. Nevertheless, it is more likely that the thick mud floor 19714 had not gone beyond the long projecting wall, as a probable fireplace, several trampled sherd and pieces of charcoal were detected directly on the compact desert surface. Finally, the possible presence of wooden sticks/posts should be mentioned on the north side of the gateway: five circular features <19911> contained the vestiges of wood which had been presumably eaten by termites. Close to each other, they all presented a similar shape, size and depth but their real roles will probably remain unclear (Figures 4–5).

Post-Amarna Period

After the Amarna Period the area was no longer maintained. The desertion and degradation of Akhenaten’s great city are visible in the different layers of sand, some having been blown in by the wind, and in the discovery of several episodes of wall collapse inside and outside the enclosure wall. The dislocation in situ of the mud-brick wall and of the threshold were also noticeable to some extent (Figures 14–15).

The mud bricks of the four internal collapses (19620, 19623, 19631 and 19632), mainly exposed in the north, had remained partly articulated, meaning that these events might have occurred at a time when the wall was still well preserved and standing quite high, as they could extend up to 4 m away from the wall edges. Another point supporting the interpretation that these deposits were the remains of fallen brickwork is the presence of white-plastered surfaces found upside-down. By contrast, the collapse (19728) exposed at the foot of the south buttress [19908] lacked consistency and the mud bricks, despite being close to each other, were slightly scattered (Figure 16).

All collapses covered sandy layers which appeared to have overlaid probable Pendlebury cuts. One, <19793>, was observed along the west edge of the enclosure wall while the other, <19717>, was found at the angle formed by the buttress and the wall (Figures 4–5; 10a; 17). The cuts were thought to have been made in the search for the foundation courses of the boundary wall since the mud floor in both sides had been cut in a very irregular shape. Furthermore, the trench running along the east façade of the south buttress had stopped right above the desert surface rather than continuing down, as in the corner with the enclosure wall. Consequently, the sandy layers found under the collapse layers inside and outside the temple could be Pendlebury’s backfilling. The remains of a thin layer of mud, (19606/19717), caused by moisture over the surface of one of these layers, mainly in the angle of the buttresses and the wall, would support this hypothesis (Figures 14–15). (According to another team member, Sue Kelly, a similar layer above Pendlebury’s excavation backfill was observed in the front of the temple in the basin area.)

A series of aerial photographs show that the position of the East Gateway has been used as a road since at least the end of Pendlebury’s fieldwork. The removal of the overburden exposed parallel tyre tracks <19610> and <19611> and revealed how they had compacted the surface over the subsequent period (Figures 14–15). This traffic compressed earlier deposits, notably a former, natural yellowish-grey sand deposit containing much fine gravel and tiny stones. This layer (19605) was noticed because of the hard small ridges in the trough of the tracks. Running roughly NE/SW, the tyre tracks had damaged the temple precinct, partially the north buttress and more considerably the mud-brick threshold. A modern iron tool (hacksaw blade) with paper remains was found pressed into a hollow in one of the tracks (Figure 18).
Finally, two patches of stones were found in the middle front of the mud-brick threshold when coming from the west. The first one, (19612), of elongated shape, measured 1.96 x 0.42 m. The second, (19607) was circular and measured 0.80 x 0.86 m. Both were made of fist-sized unworked pieces of indurated limestone mixed with yellow sand and contained several pottery sherds. Both were also interpreted as modern features and perhaps had been used as supports when repairing a flat tyre (Figures 14–15; 18).

A good way to comprehend the impact caused by the relentless flow of vehicles was revealed during the excavation, in particular at the end of the season, by the use of a pick-up to reach the area. A quick look at the former flat landscape surface between the East Gateway and the Great Temple shows the creation of new tyre tracks with different depths. The more the car passed, the deeper the troughs became, obliging the driver to deviate his course before going back on the main path. If the deviation could not have been possible it is certain that the ground surface, and probably any archaeological deposits underneath, would have been more damaged, as had previously happened at the East Gateway. Also, the heavier the vehicle is, the more damage is done.

Figure 14. Aerial view of the East Gateway at an early stage in the excavation, with the gateway itself occupied by modern tyre tracks which cross at a sharp angle. South is towards the bottom. Orthomosaic by Fabien Balestra
Figure 15. General plan of the East Gateway after the removal of the first superficial layers.

Figure 16. View of the collapse (19728) behind the projecting wall [19910] towards the south.
Figure 17. Pendlebury’s cut through the possible mud floor 19724 inside the enclosure wall [19907]. North is at the top.

Figure 18. The modern iron tool found within the trough of (19610), facing north.

Figure 19. View of the stony patches, with (19607) at the back and (19612) at the front. View towards the south.
The finds

The excavation yielded quite a large number of artefacts. They were sorted according to their material: pottery, worked stone, stone tool (hammer and flint), metal, faience, glass and organic remains (charcoal, animal bone, shell, jar sealing and others) before being separated into fragments, type of stone, beads, inlays and working pieces. The sherds received special treatment due to the amount and the variety recovered and were then pre-sorted into standard and special types. The first category was organised according to the use of Nile or marl clay with subdivisions according to their shape (rim, base, handle or body). The second category comprised all other vessels (blue-painted pottery, containers of gypsum, pigment or incense, and miniature vessels). The blue-painted fragments, being characteristic of pottery at Amarna, followed the same subdivisions as the standard vessels.

Although the post-excavation analysis is still in progress, a preliminary overview is possible. The overall amount of ceramic predictably outnumbers the other kinds of objects, with a large representation of Nile-clay standard vessels. A surprise discovery was the wide range of incense bowl fragments, along with many pieces of charcoal with resin residues. By contrast, the blue-painted pottery is barely represented at the East Gateway (Figures 20–21). Hopefully, a fuller study of the pottery will give an insight into the nature of human activity that occurred in the area or, at least, into the function of the vessels (amphora, beer jar, bowl, etc.). Eventually, hypotheses could emerge on the possibility of relationships with the Stela Site or the Sanctuary itself, the latter being almost on the east entrance axis, making it the first building to be seen by people entering the temple precinct from the east.

Mud jar-sealing fragments were discovered in a smaller quantity than at the front of the temple even though the vessels, having been sealed, were used in temple activities. Among the dozen of jar-sealings found, none showed the remains of recognisable stamped designs, although grass impressions remained on the underside, making the identification of the vessel contents and its institutional attachment impossible. The composition (dark grey Nile clay or yellowish-beige desert clay) and, perhaps to a lesser degree, the form of the sealing (cap, dome or cylindrical shape) may also indicate the organisation of the economic system within the country as
well as outside, in particular its connection with Canaanite regions (Wegner 2018: 244–245; Bavay 2015). The majority of those found at the East Gateway were made of Nile mud and a small proportion revealed the possible use of marl clay where the latter could also reflect the import of Canaanite jars. These containers might have contained products such as incense, olive oil or honey. These items of merchandise were widely used at the temple as offerings along with wine which, according to the number of recovered stamps, was the most characteristic edible liquid (Bertram 2019).

Very few worked alabaster pieces were discovered during the excavation. They are mainly of conical shape with one or two smooth surfaces. Faience items amounted to a fragmented vessel, one thin and long inlay, two tiny lumps, and three beads of which one is half-broken in its length but presents engraved hieroglyphs. Glass objects are exemplified by one opaque rod and some tiny lumps. There remains to be listed one very small and thin gold sheet, a broken feather, a few plant remains, including seeds, and samples of plaster.

Figure 21. General and specific types of vessels.

Figure 22. Distribution of sherds by vessel part and fabric.
Conclusions and Perspectives

The investigation carried out this year in the eastern part of the enclosure highlighted the human presence at the Great Aten Temple as a whole. Although Phase I seems not to have reached the very back of the temple, it was nonetheless possible to attach some material to this phase, and perhaps to the area of the Stela Site itself. The zone had developed immediately after the construction of the boundary wall and the ramp leading to a mud-brick threshold during the expansion phase of the temple. The entrance had faced almost exactly the back of the Sanctuary. A few activities probably linked to guarding could explain the fireplaces, pot-holes and post-holes. These features and the finding of fragments of incense bowls and pieces of incense could also indicate the possibility that people procured such material on the way to the Stela Site, for instance.

Further investigations should be undertaken to verify the existence of a second projecting wall which would validate the ramp assumption and to continue to explore the internal entrance and to sample areas of the desert surface between the gateway and the back of the Sanctuary. It would also be of interest to examine the wall further to the south, where another modern entrance occurs. When passing by, one can observe the presence of a long mud-brick feature running east–west, similar in shape and orientation to the one exposed this year. Whether it is a real parallel or is merely a large collapse from the enclosure wall remains to be seen.

References


