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Officers and Directors

The President's Papyrus

Hello, Amarna enthusiasts,

As this issue went to press, TARF's president, Floyd Chapman was unable to complete his column in time for publication, so your editor has written a few words about what's in this issue.

The first article, by Anna Stevens, outlines an ongoing problem at Amarna, how to conserve the fragile buildings that have been excavated. As soon as mud-brick walls and structures are exposed to the elements, they begin to erode away. Therefore, current conservation of these ruins is very important. Dr. Stevens discusses what is being done to help preserve these buildings for future generations.

In the second article, Prof. Kemp outlines his team's discoveries of the remains of the many offering-tables that were built inside the Great Aten Temple at Amarna. While their exact fucntions are still debated, they offer a window into the curious practices that accompanied Akhenaten's religious revolution.

In the final article, I tell the tale of my recent quest to locate one of the manger troughs that was taken from Amarna during the EES excavations in the 1920s, and sent to Denver, Colorado. It's a story of detective work, trying to locate where the trough was found, and where it currently is.

David Pepper
Editor

Safeguarding Akhenaten's city: The Amarna housing survey, 2023

Anna Stevens

(Assistant Director, Amarna Project; Lecturer in Archaeology, Monash University)

Introduction

In the early 1900s, over 1000 mudbrick houses were excavated at Amarna by teams of local workers led by the Deutsche Orient-Gesellschaft (1911–14) and Egypt Exploration Society (1921–36). As was common at the time, the work progressed very rapidly (Figure 1), and the priority was to clear each house of fill and make an architectural plan. These early excavations generated an extensive set of plans that form a unique record of pharaonic housing and one of the most important, if very incomplete, resources available for the study of urban life in ancient Egypt (Kemp and Garfi 1993; Shaw 1992; Spence 2010). The houses themselves, however, were largely left uncovered at the end of the excavations. Today, they are badly affected by exposure, and threatened by the encroachment of modern settlement, rising ground water and rubbish accumulation (Tully et al 2020, 79–80, 90–2; Figures 2–4). The challenge of protecting these ancient houses, while also balancing the needs of the local communities who live on and around Amarna, is an enormous one for heritage professionals working at the site.

Figure 1: *Excavations in housing areas during the 1930/1 season of the Egypt Exploration Society, showing the large scale of the work. EES Amarna negative TA.30–31/0036. Courtesy of the Egypt Exploration Society.*

In 2021, the Amarna Project was awarded a three-year Antiquities Endowment Fund (AEF) grant from the American Research Center in Egypt to collaborate with the Egyptian Ministry of Tourism and Antiquities on strategies to safeguard Amarna's ancient houses. This article introduces this new project, and outlines the results of its first season of work in late 2023.

Figure 2: *A recent view across an area of ancient housing at Amarna. While larger houses still stand above the desert surface, many of the smaller houses survive simply as low ridges of degraded brick. The large mounds visible in the image are piles of spoil left by the early excavators. Image courtesy of the Amarna Project.*

Figure 3: *Crumbling, cracking and collapsing mudbrick is widespread in the exposed houses. Image courtesy of the Amarna Project.*

How to protect Amarna's ancient houses?

There are no quick-fixes to the problem of how to safeguard Amarna's houses. With such a large number of exposed buildings, conservation or backfilling projects become a huge logistical and financial undertaking. Heritage that has demonstrable benefit, however, has a greater chance of long-term survival, and so the new AEF-funded project asks how Amarna's housing suburbs can becomes sites of increased, and more positive, engagements.

At the moment, there is very little direct engagement with Amarna's houses. For people in the local towns, interactions with the ancient housing areas are often non-existent, or characterised by disagreements over land use. This disconnect is in part a legacy of past fieldwork, which has long been conducted at a distance from local communities, entrenching a sense of misunderstanding and mistrust of archaeological research, compounded by the loss of local heritage to foreign museums. Tourists, meanwhile, rarely visit Amarna's ancient houses, other than one partly reconstructed villa just south of the Small Aten Temple (house Q44.1), and scholars only occasionally come and study the houses directly, relying instead on the patchy records left by the early excavators. We remain a long way from realising the research potential of Amarna's ancient houses, and there are few resources on past urban life for the wider public, educators and local communities.

The AEF project, therefore, seeks to develop strategies for transforming the houses into more effective assets for research, education, outreach and tourism, alongside direct protection and preservation initiatives. The project has four main components:

Photogrammetric survey: The first is a large-scale photogrammetric survey of the Main City, the largest of the housing areas, which starts near the palaces and temples of the Central City and extends some 2.5km southwards (Figure 4). Both the Deutsche Orient-Gesellschaft (DOG) and the Egypt Exploration Society (EES) undertook widespread excavations here between 1911 and 1925, although large areas of the Main City still remain unexcavated.

A large-scale photogrammetric model will be made of the landscape of the Main City as it survives today, and a sample of houses excavated in the early 20th century will also be re-cleared, re-recorded, and captured by photogrammetry. This will help to supplement the records of the early 20th century excavations, when little attention was given to deposits, everyday objects and environmental remains contained within houses, to the materiality and life-history of buildings, and to wider issues of urban development and the experience of past urban life. The outputs will comprise a series of photogrammetric models, and related resources, which will be made available open-access online (at amarna3D.com). This will start the process of transforming the houses into digital heritage assets, and help promote and diversify research on these buildings. Outreach resources will also be developed, and the models and digital archaeology program integrated into community outreach.

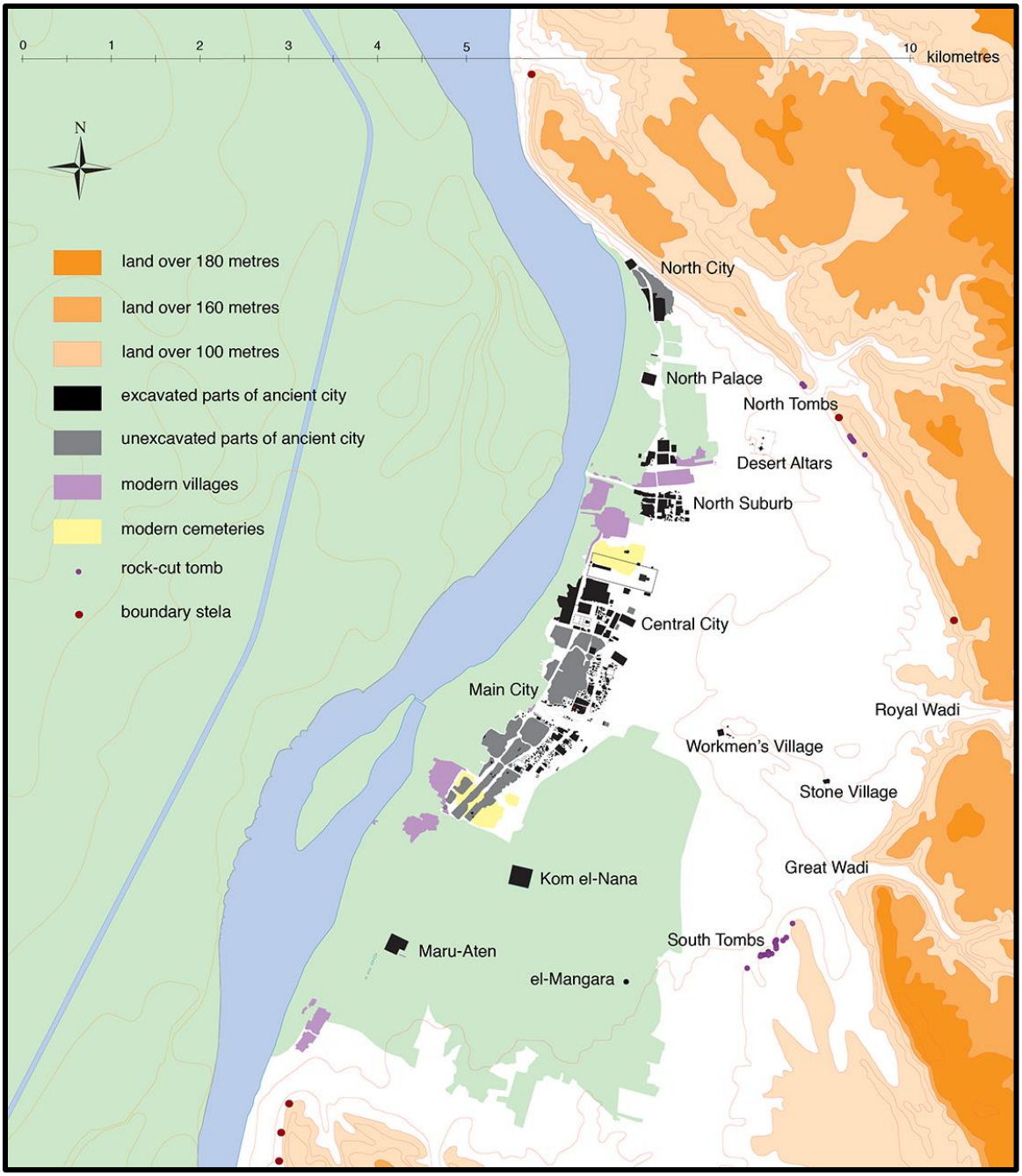

Figure 4: *Plan of Amarna showing the location of the Main City. Image courtesy of the Amarna Project/Barry Kemp.*

Construction of protective walls: The second component of the project involves the construction of boundary walls to protect particularly vulnerable areas of the site from illegal encroachment. This element builds on a 2021 AEF project that saw the construction of two boundary walls at the northern end of Amarna, to help protect the Desert Altars and the North City (Stevens 2021; https://www.arce.org/project/protecting-amarna-desert-altars). Consultation with local farmers will consider the impacts of the construction and need for interventions such as thoroughfares. It is anticipated that the walls will provide greater clarity over boundaries and help prolong the lifespan of Amarna's ancient suburbs, extending the time that archaeologists have to study these areas.

Community archaeology and outreach: The third component is a program of community archaeology and outreach. This is designed to create opportunities for dialogue and collaboration between heritage managers, local communities and other stakeholders during the project, and develop outreach resources and activities themed around Amarna's houses and the people who lived through the Amarna period. It aims to understand and improve public engagement with the houses (cf. Regulski et al 2018, involving more recent domestic heritage), ensure local needs are considered during the project, and continue the process of developing the Amarna Visitor Centre as a community heritage hub (see Tully and Stevens 2020). Public workshops, community visits to houses during the on-site work and the co-production of a folio of activity guides to sustain outreach at the Visitor Centre are among the outputs.

Conservation of the House of the Vizier Nakht: The final element of the project will see conservation of the House of the Vizier Nakht, which lies in the southern part of the Main City. The house was cleared in 1922 (Peet and Woolley 1923, 5–9, pls III–V), and was identified an excellent example of an Amarna villa. Unfortunately, Nakht's house has also become an example of the vulnerability of Amarna's urban heritage, with foot traffic, animal activity and a makeshift roadway greatly damaging the building. This element of the project will see the clearance, replanning and conservation of the house, with Arabic-English Visitor Information Panels also installed. In this way, the partly reconstructed house will become an ongoing asset for tourism and outreach.

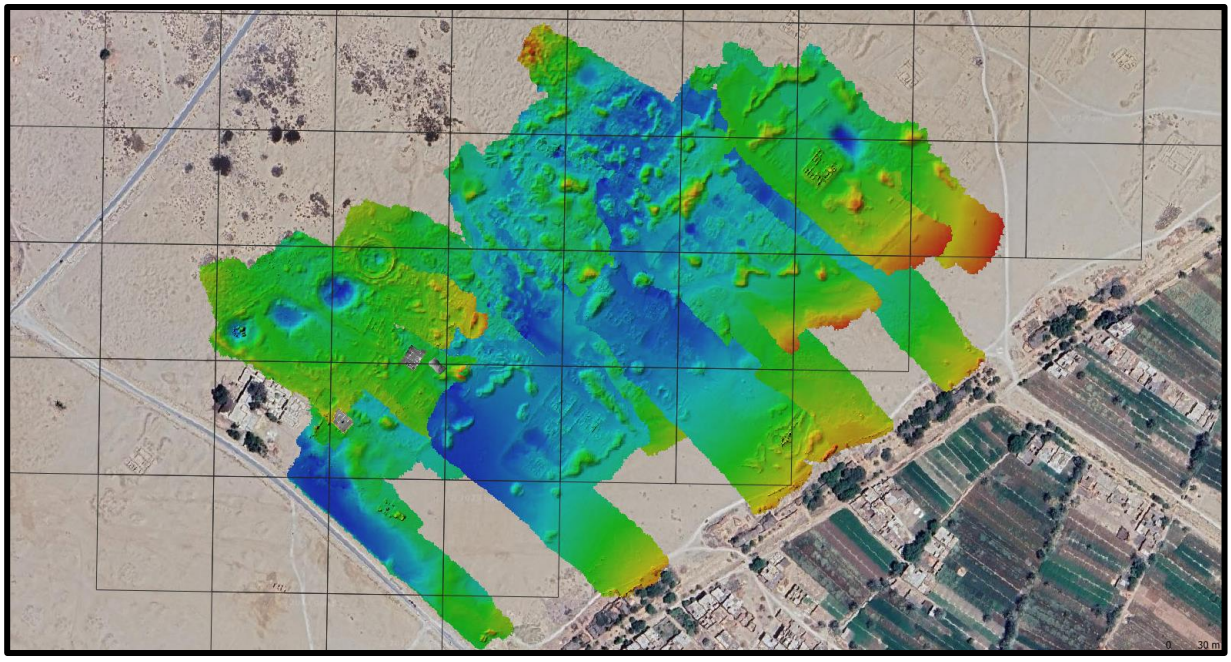

Figure 5: *Draft image showing the area covered during the 2023 landscape survey. The black grid is at 100m intervals. The image is a height map, with the highest areas in red and the lowest in blue, but shows individual capture sections which have yet to be normalised with regards to heights. Image courtesy of Paul Docherty/Amarna Project.*

The 2023 season

The first season of the project was held in November/December 2023, at which time we focused on the photogrammetric survey of the Main City, outreach and the launch of the walling project.

Photogrammetry

The landscape survey began near the southern part of the Main City, by the modern dig house, and moved northwards. At the close of the season, c. 18 hectares of land had been covered (Figure 5).

In addition, detailed recording was undertaken at seven locations:

Garden shrine at estate M50.1: M50.1 is a large estate containing a villa, magazines, secondary house and a garden shrine, among other features. It was excavated by the Deutsche Orient-Gesellschaft in 1911 (Borchardt and Ricke 1980, 280–2, Hausplan 93). The garden shrine was a space where the Amarna royal family were likely worshipped. These shrines are not well recorded in the early excavation reports, so in 2023 we re-cleared, documented and made a photogrammetric capture of this example. The work exposed the rectangular foundations of the shrine with approaching staircase or ramp. The shrine is shown in Figure 6, where small dark circular areas of fill can be seen either side of the stairs/ramp. These are the remains of 'tree pits', which are not marked on the early DOG plan of the structure.

Figure 6: *The garden shrine at M50.1. Image courtesy of the Amarna Project.*

House M50.3: This is a well-built house, measuring c. 17 x 14m, that was originally excavated by the Deutsche Orient-Gesellschaft in 1912 (Borchardt and Ricke 1980, 282–4, Hausplan 94). In 2023, we cleared the house of the fill that had accumulated in the past century, and re-recorded the building to add further detail to the early records, including via photogrammetric capture.

Houses M50.24 and M50.25: These two small adjacent houses were excavated by the Egypt Exploration Society in 1924, but only rapidly planned and recorded. They have never been published, other than as a basic outline plan (Kemp and Garfi 1980, Plans 7, 8). In 2023, we cleared the houses of fill. A new plan was made, capturing many additional details than were unmarked in the original plan, and a photogrammetric capture was taken.

Unnumbered building in square M50: This building is one of several that were rapidly cleared by the Egypt Exploration Society in 1924, but never planned or published. We cleared the windblown sand and rubble from the building, exposing a rectangular complex measuring c. 11 x 10m. Its northern end contained three small rooms, and much of the rest of the complex seemed to form a large courtyard, although this area was heavily denuded. The building still contained many of its original ancient deposits, often rich in mudbrick rubble, ash and sherds. The complex seems to have been built over a natural gully in the desert, which was filled to create a more even surface for the construction of the building.

House M51.5: This is another well-built house, measuring c. 17 x 12m, that was excavated by the Deutsche Orient-Gesellschaft in 1911 (Borchardt and Ricke 1980, 326–7, Hausplan 108). We again cleared the windblown sand and rubble that had accumulated in the house and made a photogrammetric capture. Figure 7 shows an orthophoto generated from the capture. One feature of note is a secondary burial in the centre of the room, discussed further below.

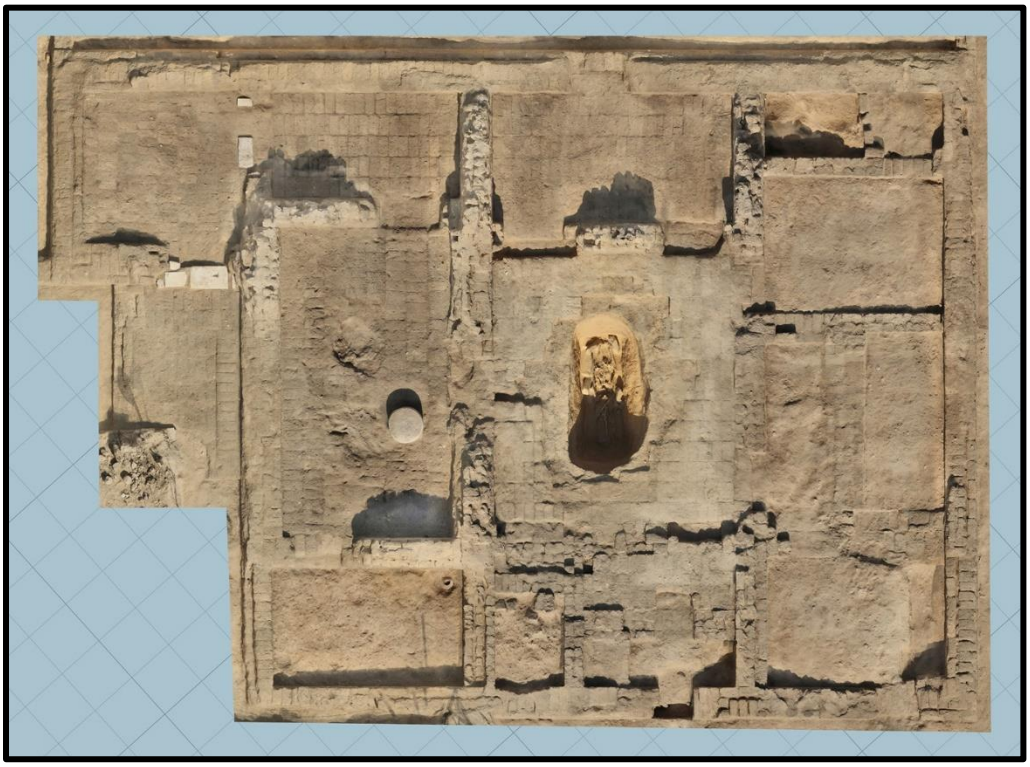

Figure 7: *Orthophoto of house M51.5.*
Image courtesy of Paul Docherty/Amarna Project.

House N49.18 (House of Ranefer): The house of the chariotry officer Ranefer (N49.18) was excavated by the Egypt Exploration Society in 1921, and then re-studied by the Amarna Project from 2002–6 (Kemp and Stevens 2010). Ranefer's estate is of interest for the fact that it was built over an earlier house. After the excavations ended in 2006, the house was partly covered with clean sand, although the tops of the walls were left exposed. Since this time, the brick walls have eroded quite noticeably, and some bricks seem to have been purposefully removed from the walls. In 2023, we partly cleared the house of its sand backfill, and cleaned up modern rubbish and eroding brick from its surface, and then made a photogrammetric capture of the house.

House N49.19, 32, 33: These three small-to-mid-sized houses located beside Ranefer's house were cleared by the Egypt Exploration Society in 1921, but again were only rapidly planned and recorded at this time (Peet and Woolley 1923, 23, 25, pl. I). We cleared and recorded them, and again made a photogrammetric capture of the buildings.

The re-clearance of this sample of buildings in the Main City added many new details to the excavation plans and records left by the early excavators, pertaining both to urban life at Akhetaten, and its later history. While the 2023 data is still being processed, preliminary themes to come out of the work include the degree of modification that took place to the natural landscape before houses were built, with several houses founded on 'levelling fill'. The work also produced further evidence for the modification of buildings during the occupation of the city, as seen with the house of Ranefer. This was particularly evident in the ground immediately south of M50.24 and M50.25, where one or more houses appear to have been demolished and a thoroughfare created through part of the levelled space.

Evidence for possible residual occupation at Amarna was provided in house M51.5. In 1911, the DOG had exposed a grave cut through the floor of the central room of this house, briefly describing it as an intrusive burial (Borchardt and Ricke 1980, 327, Tafel 24B), but with no further details. This season, we re-opened the grave, revealing a skeleton in an anthropoid wooden coffin, with an associated steatite scarab. The scarab was decorated with a royal figure worshipping an obelisk. The coffin itself was black-painted, with a red footboard. The black colouring is consistent with a New Kingdom date, as is the decoration of the scarab. This raises the possibility that the interment was placed in the house during residual occupation at the city in the decades after Akhenaten's death.

The work also produced important data on the nature of the early excavations. In house M51.5, we encountered deposits of objects that seem to have been deliberately discarded by the early 20th century excavators; a couple still had excavation numbers written on them. Among these finds were pieces of carved stone relief, limestone furniture, faience objects (vessel fragments, a model fish, etc.), fragments of alabaster vessels, and more (Figure 8).

Unsurprisingly, the fieldwork also demonstrated the variable degree to which houses have been preserved at the site, with the larger, well-built houses (especially M51.5, M50.3) surviving in much better condition than smaller houses built with walls a single brick wide (especially M50.24, M50.25).

Figure 8: *Some of the artefacts recovered from house M51.5, most or all of which were probably discarded on site by the early 20th century excavators. Image by Amélie Deblauwe/Amarna Project.*

Outreach

The main outreach event in 2023 was a Community Open Day, co-hosted with the Ministry of Tourism and Antiquities at the Amarna Visitor Centre on 2 December (Figure 9). Between 200–300 members of the local communities at Amarna attended the event. Most were children aged 12 or under, but several older children and adults were also in attendance. A series of 'drop in' activity stations were set up around the Visitor Centre where attendees could learn about: making pots and jewellery; drawing and photographing artefacts; surveying; excavating replica skeletons; painting using replica pharaonic brushes; and reconstructing pottery. Three short lectures were also held on the houses of Amarna, urban life and how to do photogrammetry.

Walling project

In November/December 2023, the line of a protective boundary wall was also surveyed near the town El-Till. The wall will measure 320m long and will help to protect the remaining houses of the ancient North Suburb from encroachment. Construction of the wall will commence in 2024.

Closing remarks

The 2023 season marked the first steps in developing and testing best-practice methods to ensure the ongoing preservation of – and positive engagement with – Amarna's houses. The season successfully demonstrated the feasibility of the photogrammetric

work, including the large-scale landscape capture; the extent of local community interest in engaging with the Amarna Visitor Centre; and the amount of new data that can still be obtained via the careful recording of previously excavated houses. If the project can be extended beyond this 3-year pilot program, it has great potential to help safeguard the future of this unique heritage site.

Figure 9: *The Community Open Day at the Amarna Visitor Centre.*

Acknowledgements

The housing project is a collaborative initiative, with the core team comprising Paul Docherty (photogrammetry), Gemma Tully (community archaeology), Wendy Dolling, Melinda King Wetzel and Anna Stevens (archaeology) and Alexandra Winkels (conservation). Our key collaborators from the Egyptian Ministry of Tourism and Antiquities are Mr. Gamal Abu Bakr, Mr. Fathi Awad and Mr. Hamada Kellawy. We thank the Egyptian Ministry of Tourism and Antiquities for permission to undertake the work and for their support.

For the 2023 season, we thank our MoTA inspectors Ms. Mona Abdeldaiem Nan, Mr. Salama Nagi Mohamed, Mr. Mustafa Khallaf and Mr. Mazhar Khallifa. We are also grateful to the staff of the Amarna Visitor Centre for their collaboration on the Community Open Day.

Other members of the 2023 field team were Pamela Rose, Sarah Ricketts, Tracy Lakin, Amélie Deblauwe and Alice Salvador. Fieldwork assistance was provided by Waleed Mohamed Omar, Ahmed Mokhtar Mahmoud, Abdel Hafiz Abdel Aziz, Abdel Malek Mohamed, Mohamed Saleh Osman, Bakr Amin Abdel Rakhman, Abu Zeyd Ezz El Din, Mohamed Rabia Fatih, Mohamed Mahmoud Mohamed, Shahata Mohamed Sayed, Yahya Sadiq Abdel Fattah, Ahmed Sayed Nassar, Mahmoud Bakr, Arabi Abdel Sabour, Ahmed Mezagher, Mahfouz Mahrous and Mohamed Abdel Sittar.

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An obsession with offering-tables

Barry Kemp (with Delphine Driaux)

(For this article regular reference is made to a composite plan of the front half of the Great Aten Temple, Figure 1, a composite plan of the western part of the Great Aten Temple enclosure, which attempts to draw together observations from many sources, particularly from the succession of seasonal excavation reports published in the *Akhetaten Sun* and on the web site of the Amarna Project. It combines results from the current programme of fieldwork with details taken from archive black-and-white aerial photographs, especially a pair taken in 1935 by the Royal Egyptian Air Force. The plan provides the basis for an extrapolation of the recovered evidence for offering-tables to recreate the full scale of their presence, amounting to more than two thousand. This is the implications of the 2023 season's discovery of evidence from a new excavation (supervised by Delphine Driaux) that a suggestion made by Pendlebury (from his 1932 season at the temple) that the huge field of over nine hundred offering-tables which covered the ground on the south side of the Long Temple had been repeated on the north side was founded on firm evidence. It also draws upon the findings of one of the excavation areas of the autumn 2023 season carried out by Delphine Driaux on the north side of the Long Temple.)

Near the end of 1932, the Egypt Exploration Society (its field director at Amarna being John Pendlebury) spent one month (more precisely 27 working days, according to his diary) excavating the principal building within the enclosure of the Great Aten Temple which might or might not have been given the name Gem-pa-Aten ('Finding the Aten') and for which I prefer the more neutral name 'Long Temple'. Pendlebury's work was obviously rushed. I am tempted to imagine the athletic Pendlebury (probably assisted by Stephen Sherman, an RAF engineer) devoting much of his time and energy on site to urging on his workforce and paying particular attention to the operation of the light railway used for the moving of the excavated spoil. He was also fortunate in having as one of his assistants a gifted and conscientious architect, Ralph Lavers. The principal result of this grand clearance was the exposure of a huge surface of gypsum concrete (210 x 32 m) on which were marked the builders' outlines for the temple. First had come a series of neat lines derived from stretched lengths of string which had been coated with black pigment. Then followed reinforcement by cutting along the lines with a narrow chisel. The builders then laid the bottom course of limestone blocks in gypsum mortar. When eventually the temple was demolished, the impressions left in the mortar by the blocks often survived, serving as further clues to the temple layout. I am always surprised at how successful Lavers was (using only tape measures) in interpreting this varied evidence to create a coherent and accurate plan, and in such a short time.

Pendlebury's excavation also took in the ground outside the Long Temple. Lavers duly included the details on his plan but here the scale of the task defeated him. It was known from the excavations of W.M. Flinders Petrie in 1891–1892 that immediately to the south of the Long Temple a large area of desert had been covered with rows of mud-brick rectangles which Petrie identified as pillars belonging to a huge hall similar to that which

he had found adjoining the southern end of what later became known as the Great Palace (Figure 1, area 6). Pendlebury changed the identification from pillars to offering-tables, the brick equivalents to the numerous offering-tables of limestone blocks which had covered much of the gypsum-concrete surface of the Long Temple. Both Petrie and Lavers approached the task of recording them in the same way. Since they stood in rows, their intervening distances having been carefully measured, all that was needed to record them was to dig pits at the expected crossing-places of the east–west and north–south rows (Figure 3 illustrates the result).

Petrie describes this part of his work as follows:

> ‘On the south of the entrance was a great forest of pillars of brick, like that south of the palace. These pillars are smaller than those in the hall of the palace, the pillar and space together averaging 113 inches east to west, and 121 inches north to south. I began by discovering and clearing those near the gateway, and gradually extended the clearance until about 15 or 20 rows were bared. As nothing of interest was found in the depth of a yard or more of earth, I then prospected for the next, and traced them by sample out as far east as they are drawn, 36 rows in all. At that point they were denuded down to only an inch or two, and all beyond that has been entirely denuded away, so that we cannot know how far this hall originally extended’ (Petrie 1894, 19).

Petrie's published plan, however, draws the pillars as forming east–west rows of 45 (by 27 in the north–south direction, giving a total of 1215). Aerial photographs still show a pattern of regularly-spaced pits, looking like 'dimples' (Figure 2), which are the result of the policy of predicting where each offering-table lay. The answer to the question, where did they dump the spoil from this exercise, is to be seen in spoil heaps located at intervals beyond all four sides of the area.

Lavers’ plan of the Long Temple includes a row of 46 offering-tables running almost but not quite parallel to its south wall (Pendlebury 1951, Pl. III). At both ends the field widens to show a few more offering-tables from three further rows. This is a sample, by now properly planned by Lavers, of the much larger field of offering-tables included on Petrie’s plan. In the accompanying text volume Pendlebury refers to ‘forty-five from east to west and twenty from north to south, a grand total… of nine hundred’ (Pendlebury 1951, 16). Lavers’ plan, with its 46 rows (to give a total of 920), is presumably to be preferred to Pendlebury’s text, with its 45 rows, all made of mud bricks. Our own excavations have revealed an additional 21st row on the north, made of limestone blocks which had been removed before the remodelling of the site in or after Akhenaten’s year 12 (Figure 1, area 2). Because it would have been necessary to clean the ground down to floor level for the remains to be visible they were not noticed by the Pendlebury team.

Moreover, as the excavation of the Long Temple proceeded, the spoil (a mixture of sand, dust and stone chippings) was dumped immediately over the margins of the building. The offering-tables which Lavers included on his plan must have been extrapolations since he must have found, as he made his plan, that much of the ground where he placed them was actually buried beneath spoil heaps.

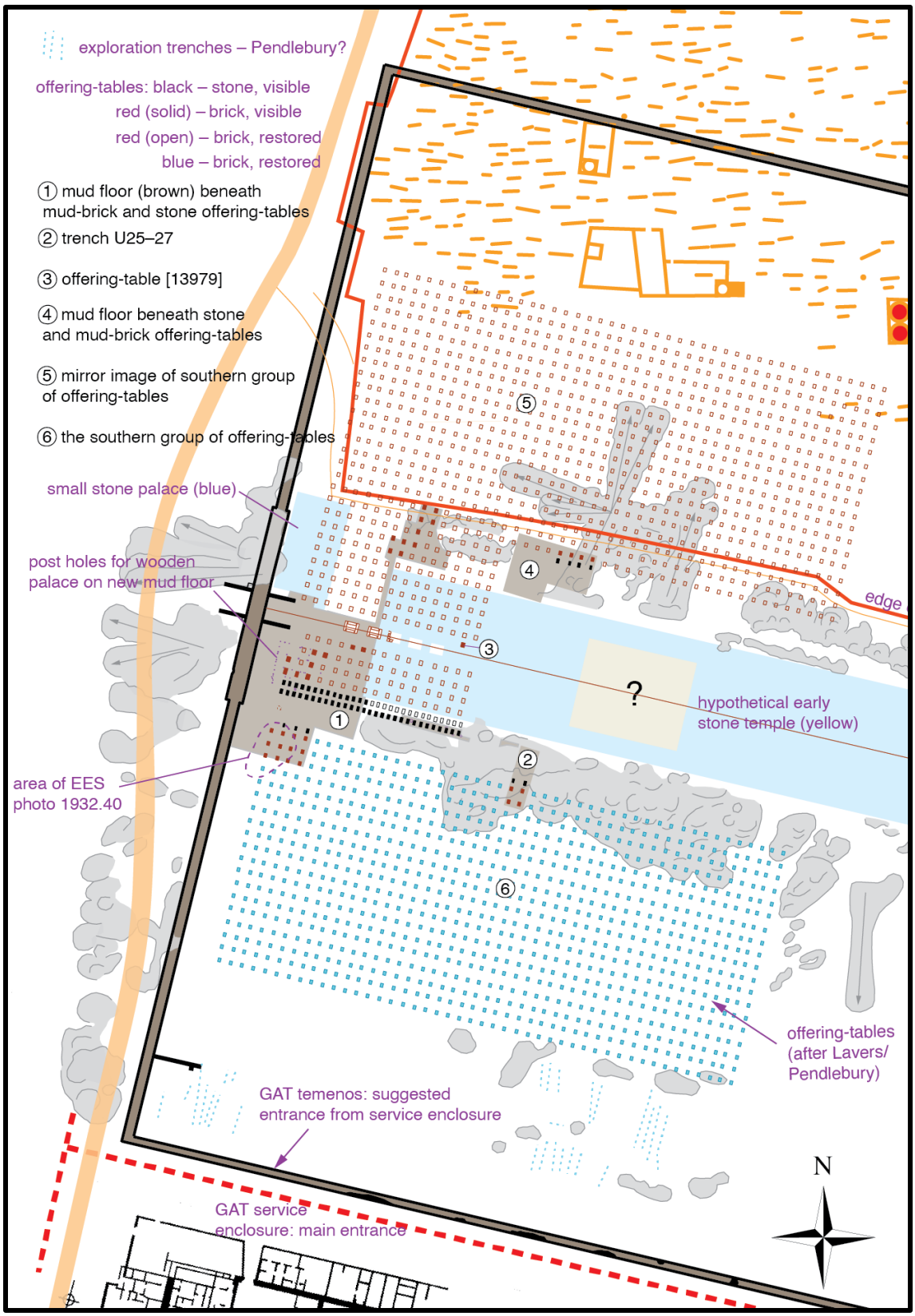

Figure 1: *Composite plan of the western part of the Great Aten Temple enclosure. Across the middle of the plan and coloured blue is the rectangle which represents the ground covered by the Long Temple. Most of the evidence considered in this article belongs to the short interval of time before it was built.*

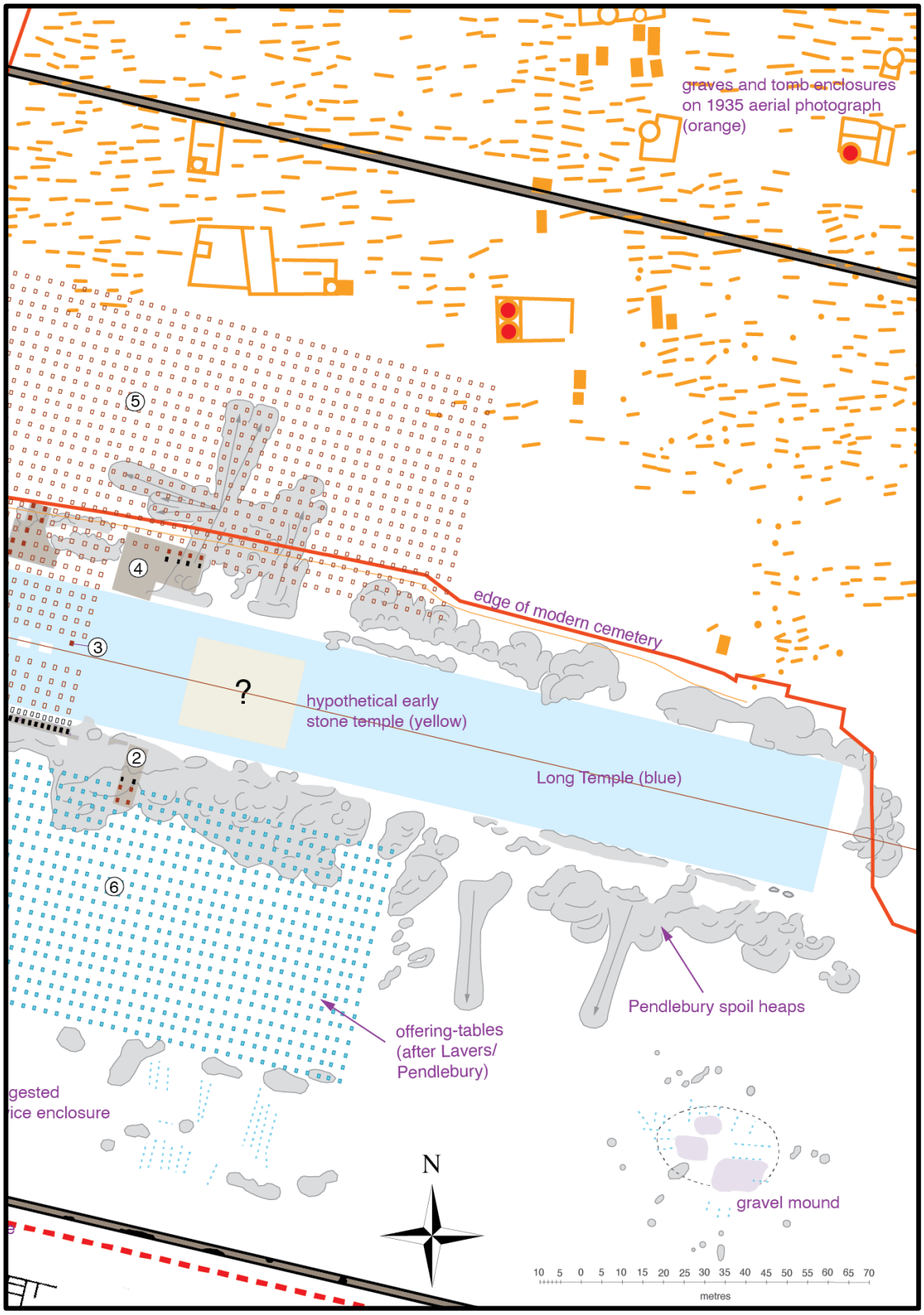

Figure 1 (continued): *Composite plan of the eastern part of the Long Temple.*

Figure 2: *Aerial photograph (from a helium balloon) of the area south of the Long Temple, the foundation trench of the south wall of which is visible at the left edge of the picture (beside the two white tents). The dimpled surface of the desert towards the right marks the positions of the field of mud-brick offering-tables. North is towards the left. Photo by Gwil Owen.*

A single photograph from the 1932–33 season (EES Amarna archive photo TA.NEG.32–33.A.0040, Figure 3) shows a group of the mud-brick offering-tables recently exposed. Each sits in a hole dug into a cover of sand and rubble which has an even thickness and had, prior to the digging, evidently possessed a flat surface. It is the result of the archaeologists, knowing already the distances between the offering-tables, exposing them by predicting their locations. With two of the offering-tables in the foreground of the picture, the pits have been merged into a larger hole to expose a group of limestone pieces of which some are building blocks to which cylindrical corner-mouldings are attached and others are cylindrical corner-mouldings which have been broken from their parent block.

There is nothing from the records of the 1932 season to show where, across the field of mud-brick offering-tables, this photograph was taken. To judge from the shadows and the general orientation of the lines of offering-tables, it is likely that the direction of the photograph was roughly towards the north or north-east. In order to locate more closely where the photograph was taken I made a sketch of how the ground appears, using the dimensions of the offering-tables and distances between them given by the excavation (in 2017) of squares I24, I25, J25 in which eight mud-brick offering-tables were uncovered. I laid this sketch over a diagram based on the 1935 aerial photograph and searched for a match. The closest is a group in the north-west corner of the whole field, one of them the actual north-west corner table [17477] in square I25, excavated in 2017.

The identification is supported by the way the ground on the left side of the picture seems to slope down slightly and the nearest double hole extends to the left as a trench in which no table appears. Evidently, we are at the western edge of the whole group. A further piece of supporting evidence is that the excavation, in 2018, of square H25 immediately to the north (and thus into ground which appears at the top left-of the picture) uncovered a further limestone block with cylindrical moulding sitting well down in the covering rubble, almost touching the underlying mud floor. This block has the catalogue number S-14749.

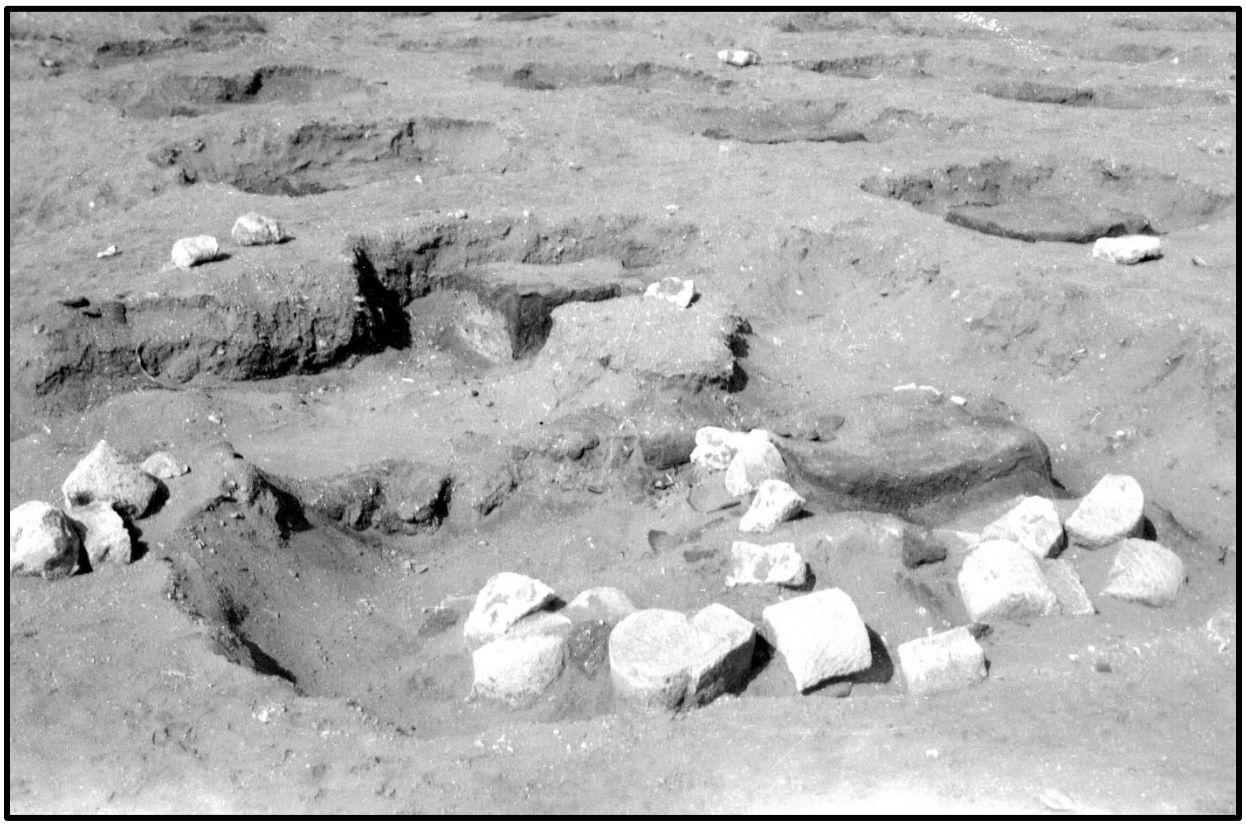

Figure 3: *EES Amarna archive photo TA.NEG.32–33.A.0040. View to the north-east, see Figure 1 for location. It shows a small group of mud-brick offering-tables exposed by pits excavated by Pendelbury's workmen. The stone blocks are either corner blocks from a demolished building or corner mouldings from corner blocks.*

One conclusion that can be drawn is that the material which covered the offering-tables must be a continuation of the levelling-rubble which covers the ground at the front of the Long Temple and had been laid down prior to the building of the Long Temple as a way of raising the ground level. The stonework that has been exposed must derive from the demolition of a limestone building which had previously stood not far away. Other material from it was found in the deposit (15374) in square L26 during the excavations of 2014. This deposit included the fine limestone torso of Nefertiti.

We began our work at the Great Aten Temple early in 2012. Not long before (May 2010) a series of models of parts of Amarna had been completed by a firm of model-makers (Eastwood Cook Ltd) intended for the displays of the Amarna Visitor Centre. One of them was of the Long Temple in the Great Aten Temple (Figure 4). An earlier model of a large part of the city (by the model-making company Tetra Ltd) and intended also for the Amarna

Visitor Centre had included the entire Great Aten Temple enclosure (Figure 5). Both models contain a major misunderstanding which only emerged after we had begun our own excavations. The ground on the south side of the Long Temple is covered with the 900 plus mud-brick offering-tables which are, in the models, made to seem contemporary with the Long Temple itself. Both these external offering-tables of brick and those of limestone blocks contained within the stone walls of the Long Temple are shown as being in use at the same time. We now know that this was not so.

Figure 4: *Model of the Long Temple standing behind the enclosure wall and the pylons flanking the main entrance. On the right-hand side (thus the south side) is the field of 920 mud-brick offering-tables. Subsequent excavation showed that they belong to the earlier phase of the temple's history and would have been buried and so invisible when the stone temple was built in the later phase. Model by Eastwood Cook Ltd, now in the Amarna Visitor Centre at Amarna; concept by Mallinson Architects, Ltd.*

Pendlebury describes the situation thus, accepting that major changes were made during the life of temple:

‘In order to make a clean sweep, the level of the ground between the main entrance to the temenos and the west façade of Per-hai [a name for the front part of the Long Temple] was raised about a metre... This raising of the ground meant that the approach was on a level with the top of the ramp [which led up to the temple front]. But in order not to interfere with the offering-tables to north and south which may already have been in position, or more probably so as to avoid the gigantic task of raising the whole temenos to this new level, it was sloped down north and south to the old surface of the desert’ (Pendlebury 1951, 14).

The current excavations in the front of the temple leave no doubt that the northern edge of the offering-tables on the south side (and by implication the entire field) had also been buried beneath what we term the ‘levelling rubble’. The sloping down of the newly raised ground level to allow access to the offering-tables had not taken place. Stone temple and mud-brick offering-tables belong to two periods. By the time the Long Temple was in use, the mud-brick offering-tables were buried and invisible. A logical explanation is that the external mud-brick offering-tables were replaced by the smaller number of limestone offering-tables now placed on either side of the long processional route through the middle of the Long Table. This functional continuity implies a degree of continuity in the status of

the people served by the offering-tables. We should note that the stone offering-tables of the Long Temple subdivide into several groups, those towards the back of the temple in an area more shut off from access than those in the first three courts, implying a newly-developed refinement in the underlying hierarchy. As for chronology, if we allow a year between the foundation of Akhetaten (according to the year-5 date of the earlier Boundary Stelae) and the digging of the foundation trenches for the Long Temple after year 12 had commenced (according to the wine-jar label of that date) the period of the open field of mud-brick offering-tables will have lasted for not more than six years.

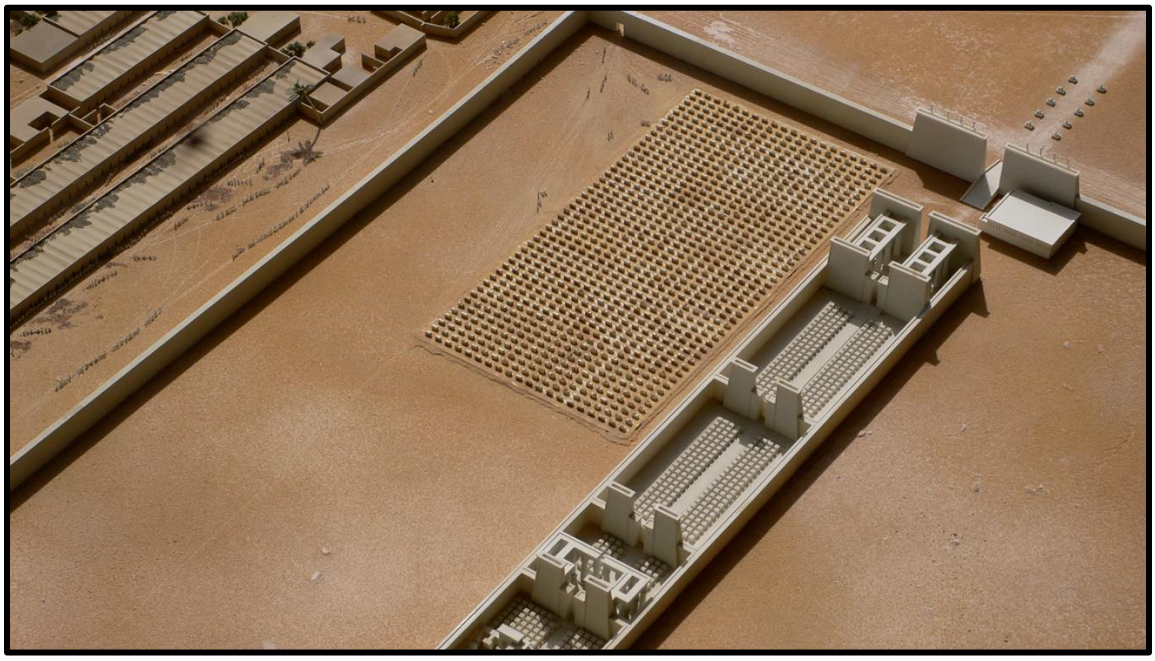

Figure 5: *Model of the Long Temple within its enclosure. The 920 mud-brick offering-tables stand in the space beside the Long Temple as if contemporary with the stone offering-tables inside the courtyards of the Long Temple. We now know that the latter set replaced the former. Model by Tetra Ltd, now in the Amarna Visitor Centre at Amarna; concept by Barry Kemp and Mallinson Architects, Ltd; photo by David Grandorge.*

Returning to the models of the temple used in the Visitor Centre displays, it seemed prudent to those of us involved in their design to keep to Pendlebury's report. This led also to making a choice between two possibilities that arose from the imprecise information contained in the report. Pendlebury had briefly raised the idea of a matching set of offering-tables on the northern side of the temple:

(The offering-tables) ‘were only present in full force on the south side owing to the above-mentioned encroachment of the modern cemetery from the north (…) However, enough on that side, too, was recovered to show that the same system obtained’ (Pendlebury 1951, 15, note 1).

In accordance with this possibility Lavers, on his very generalised map of the Central City (Pendlebury 1951, Pl. III), had included a rectangular outline on the north side of the Long Temple but had given it a broken line, contrasting with the continuous line for the area of offering-tables on the south.

In fact, specific evidence for offering-tables on the north side is hiding in plain sight within the *City of Akhenaten* III report. This evidence (passed over lightly at the time) was the finding of a single brick offering-table which lay on the course of an ancient builders' ramp at the north-west corner of the later Long Temple. It is included in Lavers' plan but without a label (Figure 6). It was uncovered again in 2014 and given the unit number [15458] crossing excavation squares M35 and M36. It also appears in an unpublished archive photograph (EES Amarna archive photo TA.NEG.32–33.A.0010; our Figure 7).

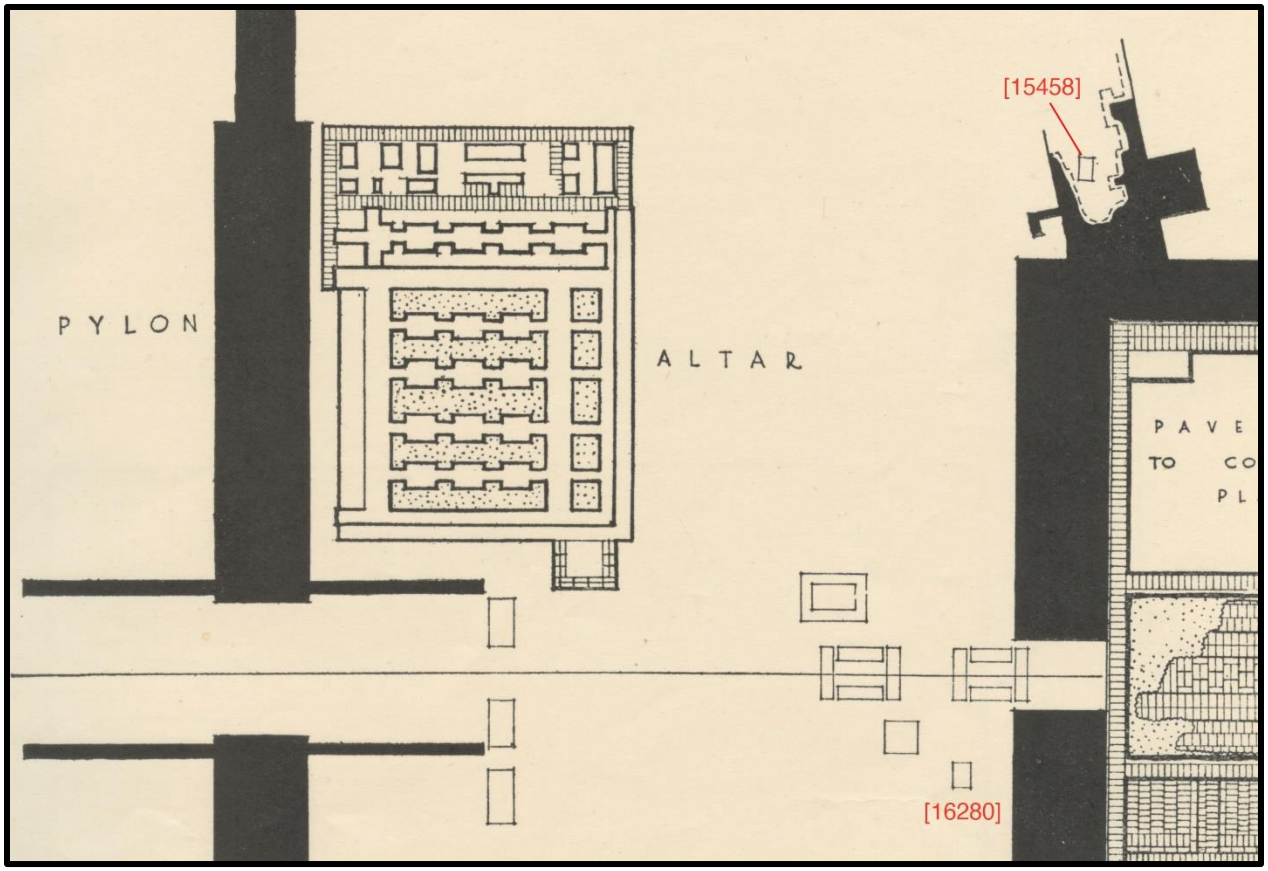

Figure 6: *A part of the published plan by Ralph Lavers of the Long Temple and adjacent features at the front of the temple. The building labelled 'altar' is now termed the 'small stone palace'. The red number [15458] is the mud-brick offering-table re-excavated and recorded in 2014. The red number [16280] is another, re-excavated and recorded in 2015. After Pendlebury 1951, Pl. III.*

The 2023 season (under the supervision of Delphine Driaux) saw a block of four 5 x 5 m excavation squares laid out 30 m to the east of the square where Pendlebury had recorded the isolated offering-table [15458] (Figure 1, area 4; Figure 8). An unexpected discovery was of evidence for two lines of offering-tables, an inner (vis-á-vis the temple wall) of limestone blocks and an outer of mud bricks (Figure 9), the two rows separated by 1.20m. Of the four stone tables (units [21242], [21243], [21244] and [21245]), only the gypsum-concrete foundation layer survived, the limestone blocks having been removed before the area was buried in a layer of crumbled mud and so before the Long Temple was built.

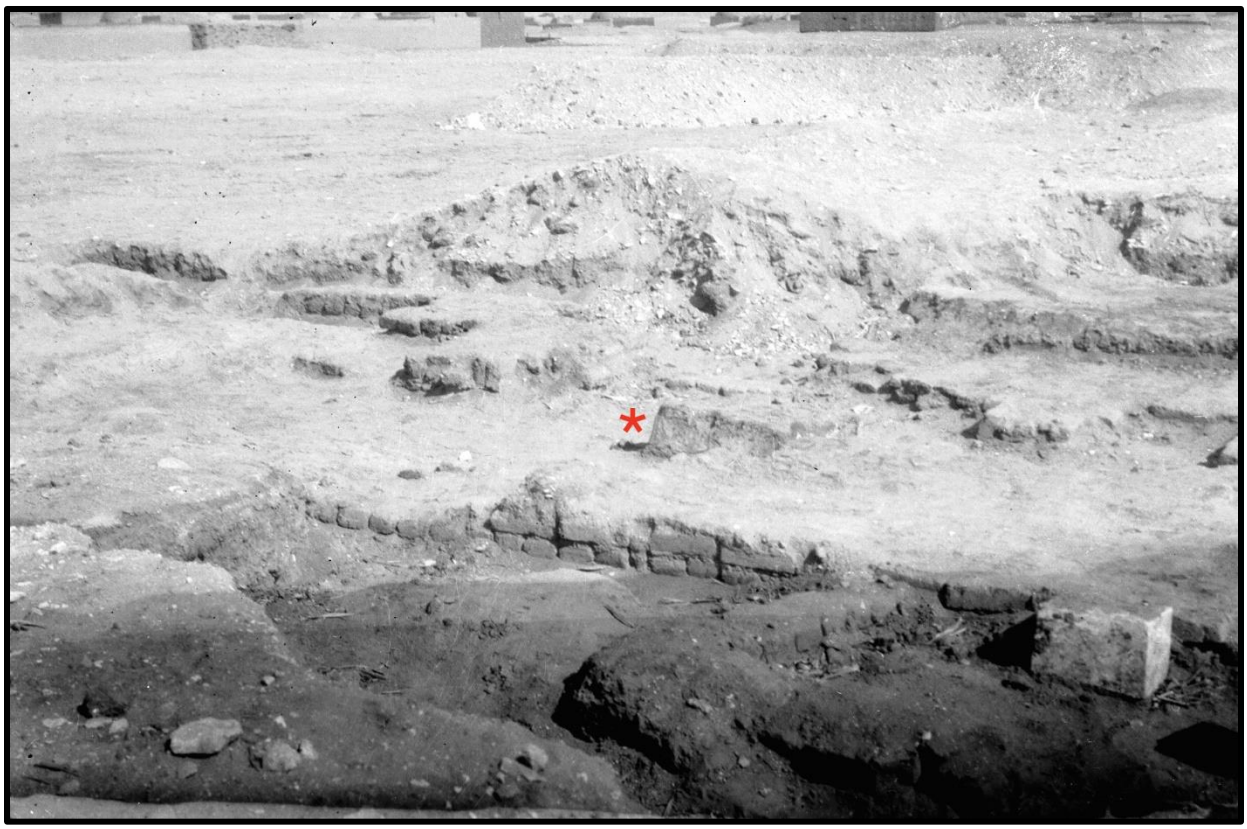

Figure 7: *EES Amarna archive photo TA.NEG.32–33.A.0010, viewed to the north-east. The red asterisk is beside offering-table [15458], which still retained some of its surface coating of white plaster. It is surrounded by the eroded brickwork foundations of a builder's construction ramp.*

Only one mud-brick example [21238] (Figure 10; north of [21242]) had left recognisable remains although cut by the much later digging of a burial pit <21045>. Observations made on offering-table [21242] suggest that it was built by cutting into the first layer of mud floor, whereas the mud-brick offering-table seems to have been built before the floor covered it. This would mean that this latter offering-table was built before the limestone offering-tables.

These well-preserved gypsum foundations for four offering-tables made from limestone blocks belonged to an east–west line. This was set at the same distance (12.00 m) from the north side of the Long Temple as was a pair of similar foundations from the south wall, uncovered in 2020 in an excavation trench (Figure 1, area 2). Beyond them came the first of the rows of the field of mud-brick offering-tables on the south side of the temple.

The newly-found offering-tables on the north side thus appear to be a mirror image of the southern field, implying that we need to double the number offering-tables to more than two thousand. Did the two groups join towards the west to create a single field, with a smaller stone temple in the middle? For the part of this intervening space which ran across the front of the temple we can trace the remains of offering-tables for a sufficient distance to confirm that they formed a continuous block (Figure 1, area 1). Further east, we can refer to a group of mud bricks [13979] (Figure 1, area 3; Figure 11) which look like the remains of an offering-table built on a white-plastered mud floor at the same height as

that revealed to the west which had supported regularly-spaced offering-tables. The evidence for there having been an earlier stone temple has been already summarised (and Figure 1, centre). Since we cannot define its size we cannot exclude the further possibility that offering-tables also extended across the space behind it. This could create an area of *c*. 175 x 130 m filled with offering-tables apart from the space (of unknown dimensions) occupied by the earlier stone temple.

Figure 8: *The area on the north side of the Long Temple early in the 2023 season. Archaeologist Delphine Driaux cleans the mud layer which covered the gypsum foundations for stone offering-tables. In front of her are the walls of modern tomb enclosures. View to the north-east.*

The northern side of the temple enclosure, beyond the Long Temple, is now densely occupied by the current village cemetery. It is reasonable to expect that the digging of graves and the building of stone enclosures will have destroyed the surface of the ground of Pendlebury's time, except that Pendlebury himself had spread a considerable amount of debris excavated from the Long Temple over the same surface, some of it with the use of a light railway system which included a turntable. This latter left a rough cross-like pattern of embankments (Figure 1). These shallow embankments and other spoil heaps will have protected the underlying desert surface. In several generations' time it might be possible to examine the ground beneath them.

A poorer degree of preservation is to be expected than obtains for the southern field of offering-tables, however. The reason is the slight slope of the natural ground, rising from south to north. In the south, as a result, the offering-tables were buried in sand and rubble when the Long Temple was built, with the aim of creating a perfectly flat floor and surrounding surfaces. On the north there was little or no scope for raising the ground level and so less chance of remnants of offering-tables surviving. This is illustrated by the remains of [21238] (Figure 10) where the loss of most of the height of the brickwork might have been the result of deliberate removal before the Long Temple was begun.

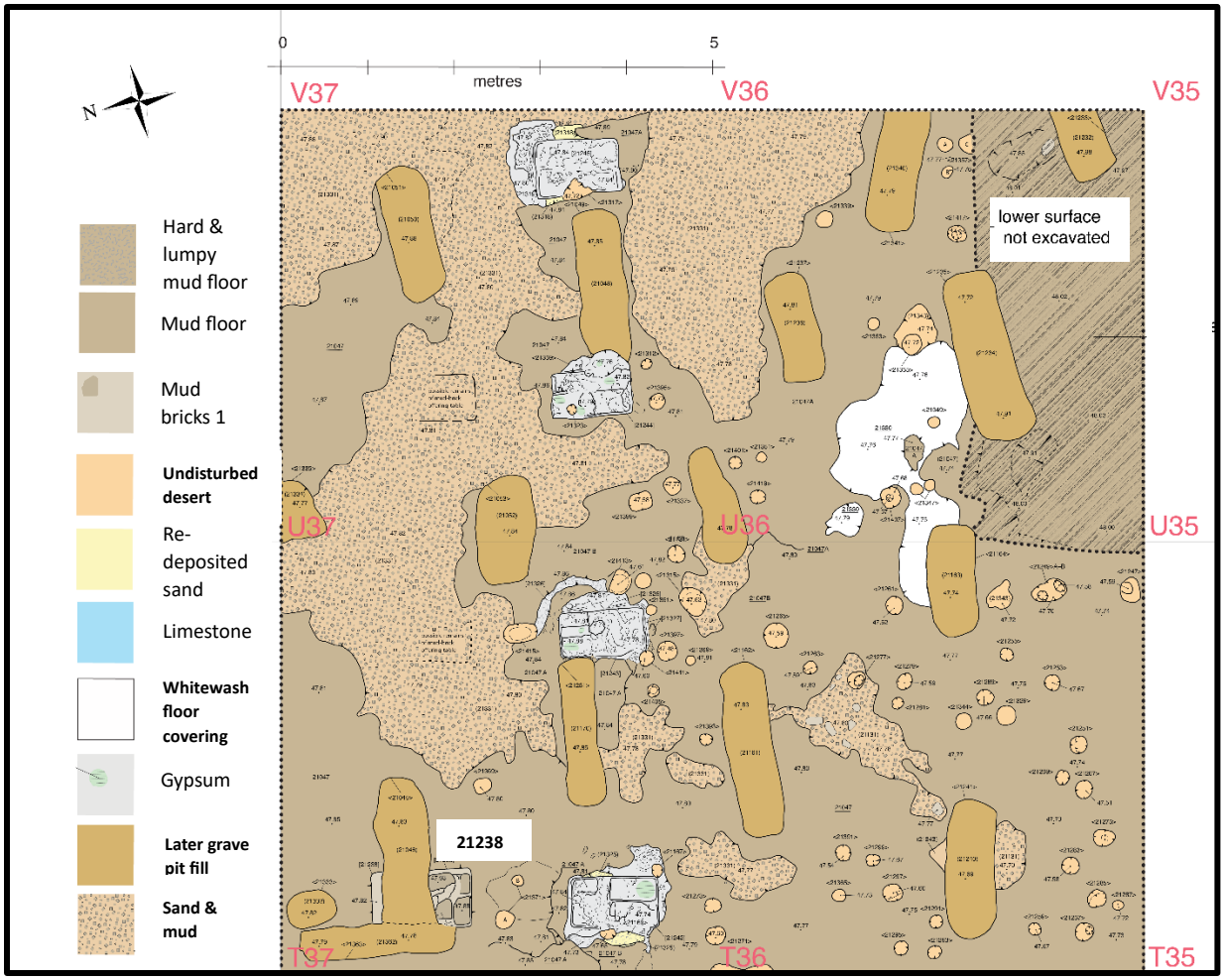

Figure 9: *Plan of excavation squares T36, T37, U36, U37. The four gypsum foundations for stone offering-tables form a line running down the middle of excavation area. The remains of a mud-brick offering-table [21238], cut by a later burial pit, are close to the bottom left corner of the plan. Original artwork by Delphine Driaux, digitised by Barry Kemp.*

For the time being, nevertheless, some archaeology is still possible. The north wall of the Long Temple is separated from the modern tomb enclosures by a strip of ground varying between 12 and 20 m in width (Figure 8). Within this corridor it should be possible to continue to uncover the ancient mud floor and any features of interest, having first removed the spoil heaps from the 1932 excavations which should have protected them. An important goal will be to determine if they extended eastwards to the same extent as the tables in the southern block.

In Figure 1, the further northern part of the plan includes (orange) lines marking the positions of low linear mounds of desert materials which covered burial pits and are clearly visible on the 1935 aerial photograph. Amongst them are also rectangular burial enclosures in some of which domed rooms had been erected. At an earlier period (and invisible on the aerial photographs) graves had also occupied ground further south, spreading inside the area of the Long Temple. We know this from Pendlebury's excavations and from our recent work which has even uncovered a few graves that probably date back to the Late-Roman Period.

Figure 10: *The remains of a mud-brick offering-table [21238], cut by a later burial pit. North is towards the top of the picture. Photo by Delphine Driaux.*

Figure 11: *The two periods of the temple. In the upper part of the picture part of the gypsum-concrete foundation for the staircase at the front of the Long Temple occupies much of the picture. It rests on a layer of sand. This has been used to bury the mud floor of the earlier open space which had been coated with gypsum plaster. Emerging from beneath the staircase foundation is a group of mud bricks which form part of an offering-table [13979] which had been built before the mud floor had been laid. South is towards the top of the picture.*

Returning to the 2023 excavation area close to the north-west corner of the temple, the new squares lie beside squares previously excavated (2015, 2018; Figure 12). These, in being situated 5 m to the south, had 'missed' the row of stone offering-tables. We had, nonetheless in 2015, been intrigued by numerous post-holes and pot-holes cut into the mud floor which covered the whole of the used surface of the temple in its earlier phase. One set of likely post-holes followed a north–south line across squares T34 and T35, some of them linked by a narrow zone of discolouration perhaps deriving from a screen or fence which the posts had supported. A parallel line, 1.40 m to the west, had formed the basis for the centres of a line of sunken pottery storage vessels which had been removed before the area was abandoned.

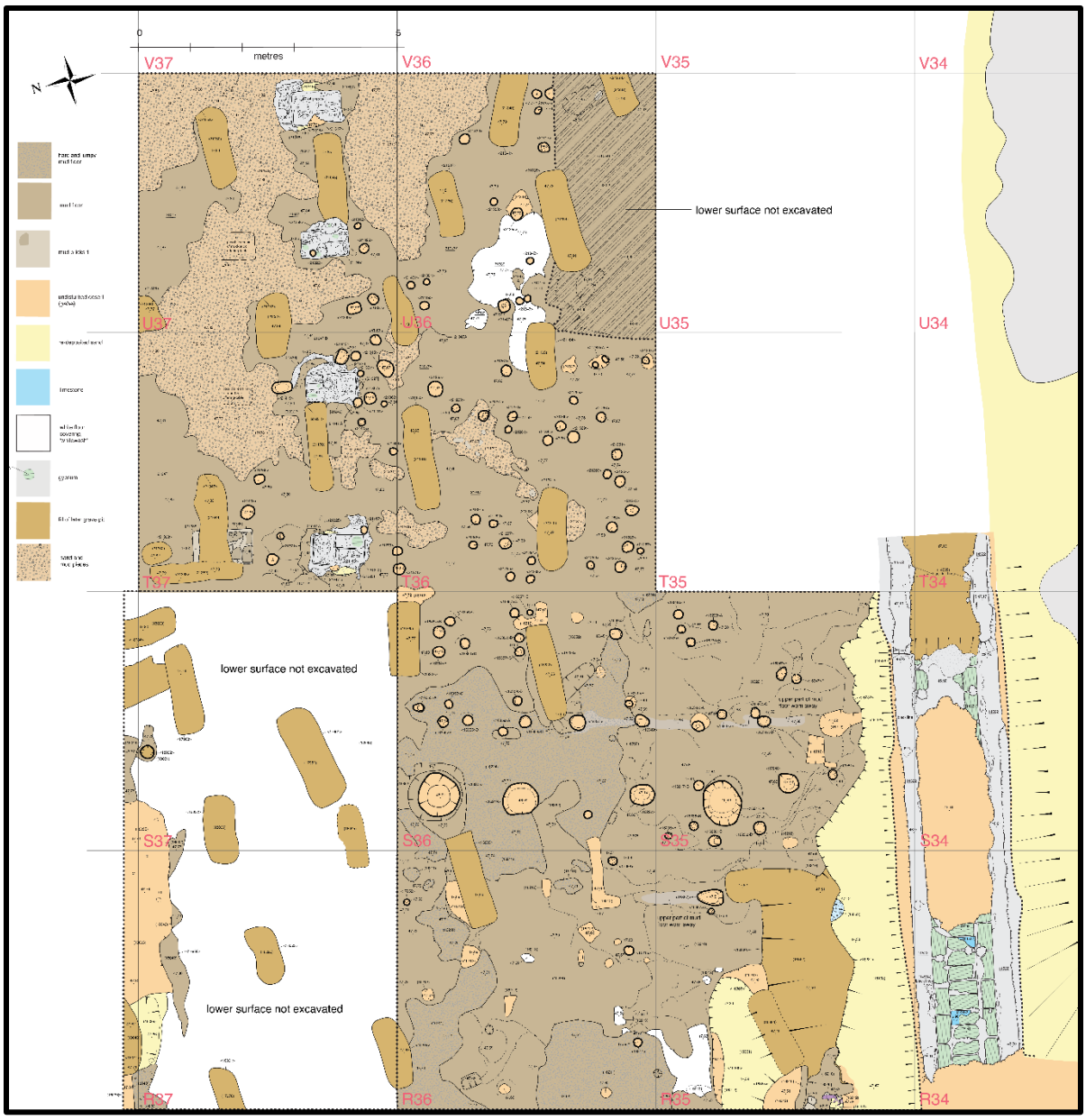

Figure 12: *Plan of the 2023 excavation added to the plan of the 2015, 2018 excavation. The foundation trench for the north wall of the Long Temple runs along the right side of the plan. Original artwork by Delphine Driaux, digitised by Barry Kemp.*

The remainder of the small holes cut into the mud floor were scattered as groups, primarily to the east, on the eastern side of the 'fence'. The new squares of 2023 revealed how the holes continued eastwards (Figure 13), eventually petering out towards the east and not extending far to the north, beyond the row of offering-tables.

Figure 13: *Orthomosaic of the ground excavated in the 2023 season. North is towards the left. There are four bases for stone offering-tables. Compare Figure 9. Orthomosaic by Fabien Balestra.*

In general, the holes are all more or less circular, with dimensions ranging from 12 cm to just under 30. Their depth rarely exceeds 30 cm, the only exceptions being <21397> (34 cm) and <21403> (33 cm). Their profile is also quite often the same: vertical sides with a flat base or inwards-sloping sides with a rounded base. The posts had been set vertically and, to judge from their diameters, would have been sturdy (although we cannot know how tall they were). The other interesting fact is that some of these holes cut through the sites of the offering-tables. This is the case with <21167>, which cuts through the gypsum foundation [21324] of the offering-table [21242] (Figure 14); also offering-table [21243] (Figure 15), which is cut by <21411>, together with its gypsum foundation [21326] which is cut by <21361> and possibly by <21413>. The presence of these post-holes would

indicate that they functioned after the offering-tables had been destroyed. This idea might be reinforced by the post-hole <21323> which cuts directly across the offering table [21244] (Figure 16). In a few other cases, such as <21403> (in T37), the dimensions (28 cm diameter) and depth (33 cm), as well as the profile of the hole with its vertical sides and flat base, suggest that it must have been a hole for a jar. We might even consider that <21403> was used in conjunction with the offering-table [21238].

Figure 14: *Offering-table [21242]. East is towards the top of the picture. Photo by Delphine Driaux.*

Apart from the north-south row of holes which looks as though it comprised supports for a fence, the holes do not seem to mark clear alignments although if the posts were removed and later returned to a hole cut close by, a pattern could become difficult to recognise. Some scatters begin to look linear, straight or on a slight curve, if one imagines some individual post-holes removed. If they had been temporary shelters or wind-breaks then one might have expected traces of fires, but there are none. But then, they could have been in use for only short periods during the day.

Post-holes cut into the same mud floor have been found close to the western end of the temple axis, where the pylon entrance to the later Long Temple would be built (Figure 1, area 1). These post-holes were for a wooden building which had contained a brick dais supporting a painted floor of foreign captives, clues that identify it as a small palace. Several of the holes look as though they had been cut on more than one occasion suggesting that the building had been set up on more than one occasion. A few patches of orange discolouration on the mud floor are likely to have derived from fires, not necessarily on the mud floor itself but contained within the wide and shallow pottery bowls known to have been used for this purpose. The space that the small palace occupied had been created by the removal of a group of mud-brick offering-tables. This should be borne

in mind when considering how some of the post holes in the new area had been cut after at least three of the stone offering-tables had already been removed.

Figure 15: *Offering-table [21243] and grave pit <21231>. East is towards the top of the picture. Photo by Delphine Driaux.*

We can also make a comparison with the areas of mud floor across Figure 1, area 1 at the temple front and in the trench cut on the south side of the temple (Figure 1, area 2) where, in neither case, have post-holes been found. They seem not to have been a common feature of the huge open space involved.

Figure 16: *Offering-table [21244] with layer (21320). East is towards the top of the picture. Photo by Delphine Driaux.*

An alternative Akhenaten from archaeology: did he provide Amarna with a 'people's temple'?

I used these words as a sub-heading in my report in the *Akhetaten Sun* for December 2019. I went on to say:

"As the true nature of what was built at the site of the Great Aten Temple slowly emerges, I feel that descriptions of the temple which rely upon the conventional sources are less and less adequate. They create a smokescreen which hides a different reality which excavation is revealing. This in turn implies that Akhenaten had a wider and more varied vision than he is commonly credited with... I can think of no adequate reason for the vastness of the space other than it was to act as a place of assembly for the city's people. This is a common element in later cities: the forum, the central square, the market-place. Here at Amarna it would have had a character derived from Egyptian traditions: a prominent focus on a divinity (the Aten) and on the king, in part expressed through food-offerings. The occasions for assembly would have been dictated partly by an official calendar and partly by applications from people wishing to honour their own dead by a combination of their own ceremonies (which included feasting) and spoken formulae in favour of the Aten and the king at the same time. By this model, citizen contributions would have helped to maintain the system."

One pointer to this possibility is the finding of two mud bricks from the area of offering-tables at the front of the temple found in 2017. They bear the remains of two brief ink hieratic inscriptions, written in such a way as to suggest that the bricks had not formed part of a construction. The texts had given personal names, both difficult of transcription and translation, but nevertheless pointing to non-royal involvement.

The possibility needs to be considered that the huge extent of offering-tables served a single occasion. That occasion could have been the grand foundation ceremony as described on the first Boundary Stelae:

'Year 5, 4th month of the Growing-season, day 13... On this day, when One was in Akhet-[Aten], his Person appeared on the great chariot of electrum — just like the Aten when he arises on his horizon and fills the land with the love and [the pleasantness (?) of] the Aten. He set off on a good road [toward] Akhet-Aten, his place of the primaeval event, which he made for himself to set within it daily... A great offering was presented to the Father Aten consisting of bread, beer, long- and short-horned cattle, calves, fowl, wine, fruits, incense, all kinds of fresh green plants and everything good in front of the mountain of Akhet-Aten; [and also the] offering of a good [and pure] libation on behalf of the life, prosperity and health of the Lord of the Two Lands, Neferkheperura-Waenra.'

The text then continues to enumerate the persons who had assembled to participate in the ceremony: 'the king's companions and the great ones of the palace, the supervisors of the guard, the [overseer]s of works and all the [people of the land?] in its entirety' (Murnane 1995, 74).

If we make the field of offering-tables that has been the subject of this discussion the location of this foundation ceremony two practical considerations present themselves. The first concerns access. By the time of the Long Temple a wide mud-brick pylon

entrance provided access from Royal Road. It was approached via a ramp that lifted the entrants to the new ground level *c*. 80 cm above the earlier mud floor (with a temporary downward ramp on the inside to maintain access during the time that the Long Temple was under construction). The pylon towers were built when the new raised ground level was already known. Furthermore, the brickwork of the towers (or at least of the southern tower) runs continuously, without join, into the enclosure wall itself. Thus, either the pylon and the enclosure wall, when built, had covered the remains of an earlier wall or marked perimeter of some kind, or no enclosure had been provided. In the latter case, people accessed the offering-tables by walking directly in from Royal Road.

The second consideration not only relates to movement. It touches on something that is nowhere stated but is apparent from archaeology. The offering-tables needed to be supplied with offerings, mainly food, as listed in the text of the first Boundary Stelae. In the initial demarcation of the main building zones of the Central City those responsible had allocated two adjacent blocks of land for the cult of the Aten (Figure 17). One was the area of performance which contained the stone temple buildings and the hundreds of offering-tables, all laid out in geometrical regularity within the huge temenos defined by a thick mud-brick wall. The other space was given the form of a virtual enclosure, of roughly the same width as the temenos next door but open-ended in the case of its east–west length and without a continuous enclosure wall. Its individual parts had been built sequentially, starting from the front and developing piecemeal. Where they stopped the ground was left vacant and came to be used for the disposal of huge quantities of pottery bread moulds from the bakeries which were one of the major constructions on the site. A little administrative centre for the official in charge of the supply of commodities, the 'chief servant of the Aten, Panehsy', stood isolated at the very back, conveniently placed for direct access to his private estate at the rear of the Main City to the south.

This service enclosure accommodated activities which seem to have been deliberately excluded from the temenos in a way that is not visible at other Egyptian temples. Fires, ovens and kilns and their ashes were kept out. The temenos contained one or two butchers' yards, to provide meat, an important part of offerings. Where was it prepared for consumption? The current excavations have, from the beginning, made a point of looking for and retaining for study any bones, whether animal or human. Within the temple temenos animal bones are notable for their absence. They have been found, however, outside the temenos, in the debris surrounding Panehsy's house. As a contrast, the ground within the temenos and north of Panehsy's house contains many pits which have been dug specifically for the disposal of rubbish, primarily potsherds from vessels some of which have been deliberately broken, and the mud sealings from the necks of amphorae which had held wine. Incense had become incorporated into the fills of the pits. Bones are again conspicuously absent. The evidence points to a practice of keeping the floor of the temenos free from rubbish, in the far rear area by collecting it and burying it in pits except for meat remains which were collected and taken outside the temenos for dumping beside the office of the administrator.

The temple enclosure was, in other words, subject to a strict purity regime. As part of this regime, places of storage within the temenos were kept to the minimum. The tomb pictures show valuable items used in the cult of the Aten standing in roofless spaces in

the Long Temple and the Sanctuary. Both also held furniture which looks as though made from wood that would deteriorate quickly if exposed to sunlight for long. Does this mean that, each time ceremonies were held, portable equipment was brought from somewhere else (say, a building inside the service area) and then returned before the end of the day?

Comparing what was allowed into the temple temenos and into the service area beside it helps to define the scope of what was considered to be inappropriate within the former. One effect of imposing this regime was greatly to increase the amount of labour needed to maintain the offering-system, requiring constant back-and-forth traffic between the two parts of the overall temple layout. Bread (and presumably the closely related beer) was manufactured in the industrial-scale bakery in the service area. It had then to be carried to the offering-tables, the furthest of which were around 250 m distant to the north. (There is no evidence that there was an equivalent service area to the north which would, for sure, have left traces even where the later cemetery developed.) I am reminded of how present-day Egypt still maintains a subsidised bread ration (for those who qualify for it) which is distributed partly by personal collection from government bakeries but also by young men on bicycles who skilfully balance on their heads several tiers of lightweight palm-rib trays loaded with flat circular loaves. They daily negotiate busy, traffic-filled streets with only rare mishaps.

A similar question of access to necessities extends to water. The pictures of the temple carved on tomb walls and *talatat*-blocks show pottery storage jars resting in wooden stands and self-supporting on flat-topped tables. Some might have contained wine or beer but it is likely that many were for water. A few circular basins and rectangular troughs sunk into the ground, coated with a layer of gypsum, accompanied low brick platforms in an area at the front of the temple where they may have served as installations for washing the dead. Whether of not this is the correct interpretation for them, the ultimate source of water must have been either the river or one of the deep water-holes with which the city was provided. The nearest, S42.1 (Figure 17), seems to have been at the back of the service area, beside the 'military and police quarters' (or 'barracks') which had its own water-hole within its own enclosure (R42.10; Pendlebury 1951, Pls. XXI, XXIV, LII). Located where it was, it was at the furthest point within the service area from the offering-tables within the temple temenos. There is no sign of a large well or water-hole within the temenos. If one had existed in the now built-over area in the north it is very likely that the depression which would have marked it would have been visible on the 1935 aerial photograph despite the modern graves. Of course, if the quality of direct groundwater was unsuitable (through its salinity) for human drinking (though below the tolerance level for cattle) the water supply for the people using the temenos could have been carried in from the river bank to the west, the vessels shown in the ancient pictures being the means of transportation.

The establishment of a purity regime incidentally answers the question raised in previous paragraphs: was the great field of offerings provided with a surrounding wall from the beginning? A purity regime implies the ability to control access to the site, something which a surrounding wall would immediately achieve.

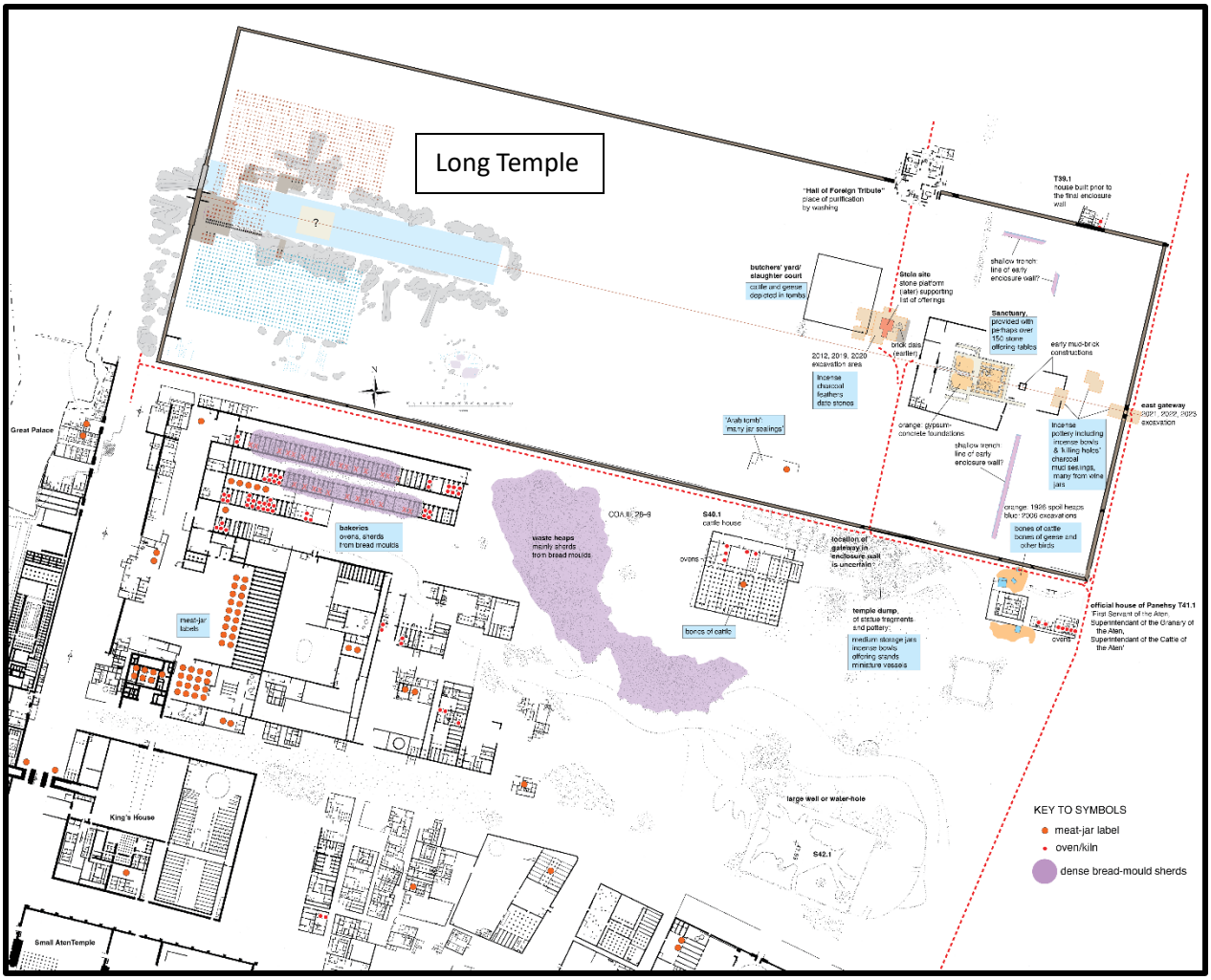

Figure 17: *A simplified version of Figure 1 to which has been added to the bottom a plan of the service area to the south, based on the survey maps of Kemp and Garfi 1993.*

It would help if we knew how many gateways the temenos enclosure wall contained and their locations. Apart from the pylon entrance at the front, we have only the gateway on the temple axis at the rear. This was examined by Fabien Balestra in 2021 and 2022 following a brief sounding by Pendlebury. Neither he nor Petrie had pursued the subject further, even though on the south and east the line of the wall, covered with sand, is conspicuous. It might be difficult to investigate with any expectation of useful results being forthcoming, however. From Fabien's work at the East Gateway we know that the wall has deep foundations which run continuously beneath gateways. Aerial photographs of the south and east lengths show a regular pattern of damage which appears in the form of trenches running in short lengths along the top of the wall. In 2014 our excavations at the front of the temple revealed how, at an unknown time in the past, the villagers had quarried the brickwork of the wall by means of trenches which had removed it down almost to the bottom whilst keeping the eroded edges in place. This loss of substance might have extended to signs of gateways.

The plan of the service area south of the temenos allowed for expansion and, in so doing, allowed for some provision of food supplies from the beginning of Amarna's occupation.

We can assume therefore that, from the very first ceremony of offerings in year 5, the Great Aten Temple was a going concern. It was the long-established Egyptian style to underpin such systems with extensive written documents and perhaps the use of tokens or a system of tallies. Almost nothing of this kind has survived, and without it we can reconstruct the system in only the barest outline. Rare survivals are two pottery ostraca from the Central City which record the distribution of commodities, including bread, beer and grain (Pendlebury 1951, 161; Pl. LXXXIV: nos. 5, 6; from R42.9, a compact building not part of the Great Aten Temple complex which combined all the physical elements for the production of bread.

The realisation that, as first laid out, the western half of the Great Aten Temple could have been the site of more than two thousand offering-tables strengthens the case that they were served not by priests on duty to satisfy the Aten but by people from the city attending in order to receive communal meals.

Was it an attempt to feed a large part of the rapidly expanding population of the city, perhaps done as a means of coping with a sudden influx`? The fact that it required a food-production factory next door to maintain it underlines its importance. Yet it will not have been an unexpected emergency since the whole system had been conceived and prepared from the beginning. It also imposed on those who received its benefits control over their behaviour. Was it also part of the initial plan that it would have only a limited duration, to be replaced by a monumental and more dignified construction (the Long Temple) which catered for fewer people and was sensitive (in the grouping of the stone offering-tables) to their hierarchy?

Without adequate texts, much has to remain speculation. As the excavation proceeds, it is to be hoped that more evidence will come to light. It is also necessary regularly to turn over the evidence we do have so that the resulting new perspectives lead to a better understanding.

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Some of this article's content has appeared in previous reports in *The Akhetaten Sun*, as follows (the main author being Barry Kemp):

'Making a start at the Great Aten temple.' *Sun* 18, no. 1, June 2012, 7–15. Excavations at the temple front, including the small palace.

Mary Shepperson, 'More at the Great Aten Temple: the site of the free-standing stela and statue of the king.' *Sun* 18, no. 2, December 2012, 11–22.

with Kristin Thompson, 'Counting the years at the House of the Aten.' *Sun* 19, no. 1, June 2013, 10–18. The jar label which records the year 12; the many layers of gypsum plaster on the platforms and basins at the front of the temple.

'Spring season 2013 work at Amarna.' *Sun* 19, no. 1, June 2013, 19–23. Excavation of the northern gypsum-concrete platform at the front of the temple.

'Getting to the bottom of the Great Aten Temple.' *Sun* 20, no. 1, June 2014, 12–19. Early offering-tables at the front of the temple; the ancient builders' ramp and scheme to create the grand stone colonnade (reconstruction drawings); more on the platforms and basins.

Marsha Hill, 'Part of a new statue of Nefertiti from the Great Aten Temple.' *Sun* 20, no. 1, June 2014, 20–23.

'An unexpected burial in the Great Aten temple.' *Sun* 20, no. 2, December 2014, 6–11. Burial of a child in a pit made during the Amarna Period, accompanied by a faience amulet of a human or a divinity.

'Progress at the Great Aten Temple.' *Sun* 21, no. 1, June 2015, 16–23. More details from the temple front; the Delphine Driaux site on the north side of the temple; inlays of stone and faience; gypsum model of vulture feathers; rebuilding the temple front.

'Discoveries at the Great Aten Temple.' *Sun* 23, no. 2, December 2017, 2–18. Discovery and identification of the wooden palace in front of the temple; and the same for the staircase to the platform between the outermost pylons of the Long Temple built from stone.

with Marsha Hill and Kristin Thompson, 'A head of Akhenaten from the Great Aten Temple.' *Sun* 23, no. 2, December 2017, 19–23. Small, roughly-formed gypsum head.

with Marc Gabolde, 'Further results from work at the Great Aten Temple.' *Sun* 24, no. 1, June 2018, 25–35. More on the wooden palace; wine-jar label mentioning princess Maketaten; gypsum slab bearing an incised scene of a man cleaning a floor.

with Paul Docherty, 'The solar observation and offering-platform at the front of the Great Aten Temple.' *Sun* 24, no. 2, December 2018, 7–16.

with Marc Gabolde, 'Versions of Akhenaten.' *Sun* 25, no. 2, December 2019, 7–19. Limestone slab with image of Akhenaten's face; summary of archaeological findings which suggest public participation in the cult of the Aten at the temple, including publication of two hieratic graffiti on mud bricks probably from offering-tables.

'Amarna excavation update.' *Sun* 26, no. 2, December 2020, 22– 37. Mud-brick offering-tables excavated on the south side of the temple; excavation of part of the Butchers' Yard or Slaughter Court behind the Long Temple; recording and reconstruction of a selection of fragments from the quartzite stela from the same area; rebuilding of the north stone wall of the Long Temple.

'Ralph Lavers, Amarna architect between 1931/2 and 1936/7.' *Sun* 27, no. 1, June 2021, 2–4.

'The spring season 2021 at Amarna.' *Sun* 27, no. 1, June 2021, 5–23. Excavation of the last length of the foundation trench of the north wall of the temple and rebuilding in stone; cleaning and planning of the temple's north-east corner; analysis of the rear courts of the temple and comparison with the rear of Luxor temple; Aten cartouche names.

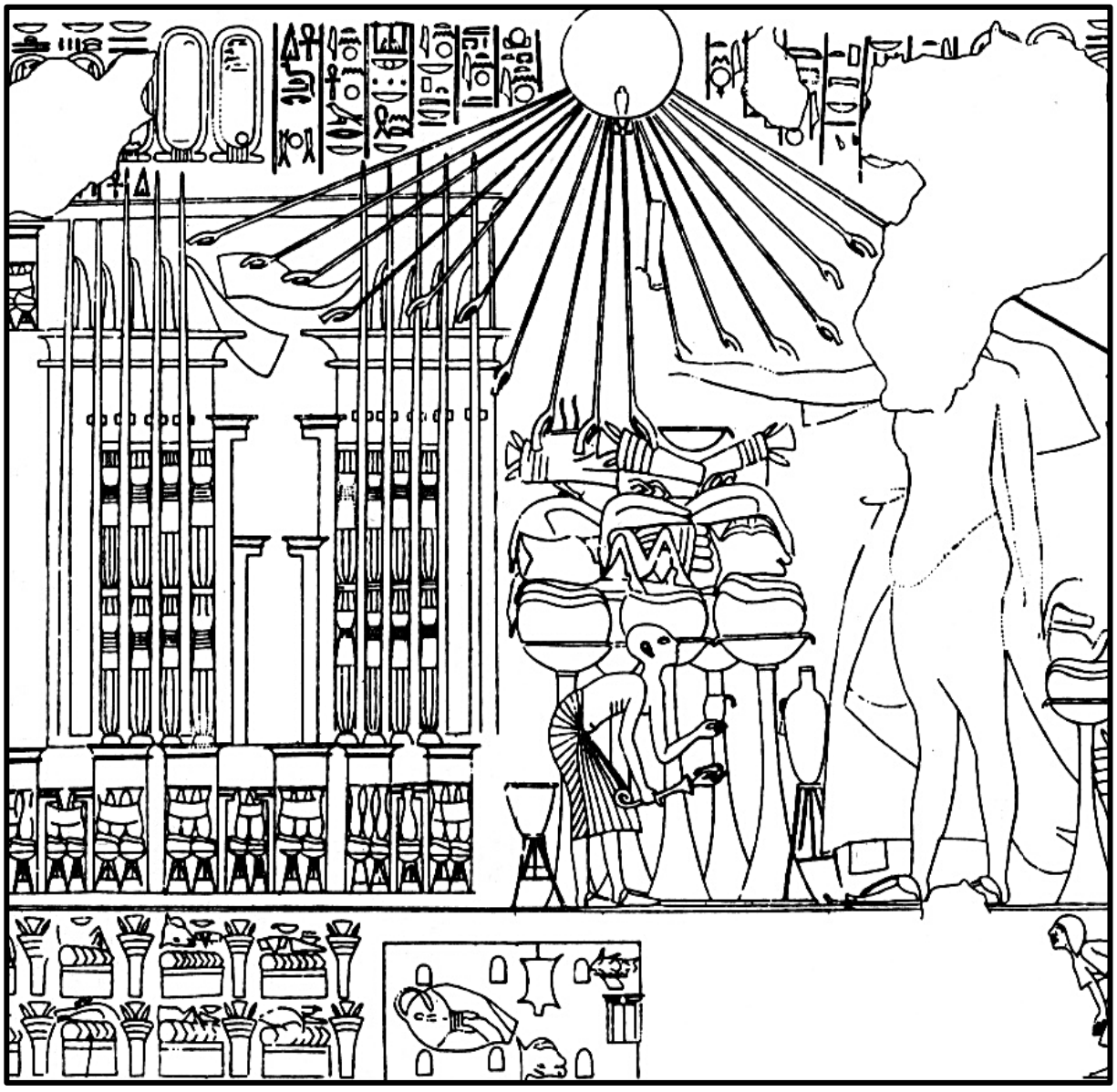
Fabien Balestra, 'GAT East Gate excavation report of squares EZ38–39, FA38–39 & FB38.' *Sun* 27, no. 2, December 2021, 30–51. Excavation of the gate in the rear wall of the temple temenos.

'Continuing the exploration of the Great Aten Temple.' *Sun* 27, no. 2, December 2021, 52–57. Cleaning the temple foundations at the rear of the building and partial rebuilding of them.

'After the founder: the post-Amarna Period at Amarna.' *Sun* 28, no. 1, June 2022, 1–32. Includes Horemheb cartouches and blocks which show obliteration of images of the Amarna royal family but retention of Aten depictions, both from the Long Temple.

'Excavation in the vicinity of the East Gateway (squares EY38–39, FA38–39 and ES41–42, ET41–42).' *Sun* 28, no. 2, December 2022, 32–52. Discovery of numerous buried deposits of potsherds and stamped wine-jar sealings.

'Great Aten Temple update.' *Sun* 29, no. 1, June 2023, 31–49. Cleaning, planning and rebuilding of the rear courts of the Long Temple; the nature of the two extra-large offering-tables; short-lived post-holes cut into the foundation layer; do they mark temporary wooden buildings which authenticated the claim that Akhetaten was the original primaeval home of the sun-god?



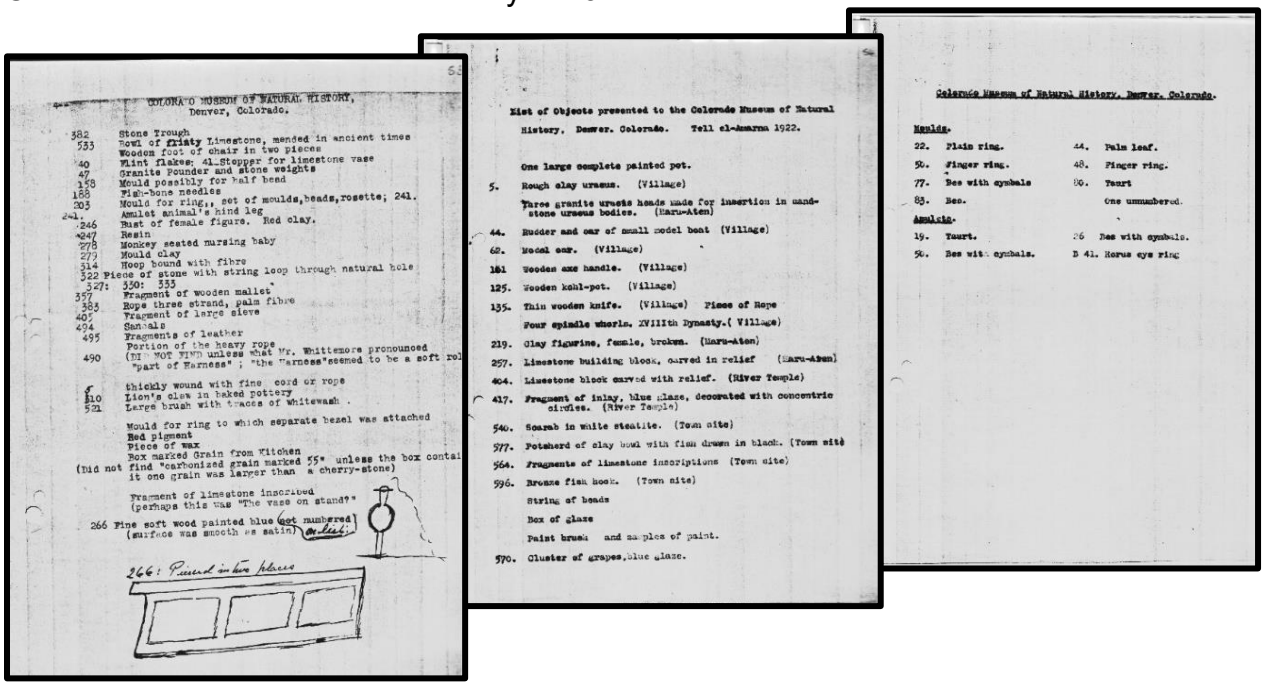
Akhenaten offers in from of the Long Temple, Tomb of Meryre I, Amarna

Artifact, where are you now?

David Pepper

I was recently asked to try to locate an item donated by the Egypt Exploration Society to the Denver Museum of Nature and Science (DMNS, then called the Colorado Museum of Natural History). My quest was successful, and it's an interesting story of excavation, discovery, record-keeping, donations, and the transfer of objects from one museum to another.

Figure 1 are three pages from the EES distribution list, that specify the items sent to the Colorado Museum of Natural History in 1922.



COLORADO MUSEUM OF NATURAL HISTORY,
Denver, Colorado.

382 Stone Trough
533 Bowl of trinity Limestone, mended in ancient times
Wooden foot of chair in two pieces
40 Flint flakes; 41 Stopper for limestone vase
47 Granite Pounder and stone weights
158 Mould possibly for half head
188 Fish-bone needles
203 Mould for ring,, set of moulds, heads, rosette; 241.
241. Amulet animal's hind leg
246 Bust of female figure. Red clay.
247 Resin
278 Monkey seated nursing baby
279 Mould clay
314 Hoop bound with fibre
322 Piece of stone with string loop through natural hole
327: 330: 333
357 Fragment of wooden mallet
383 Rope three strand, palm fibre
405 Fragment of large sieve
474 Sandals
495 Fragments of leather
Portion of the heavy rope
490 (It is NOT TWO unless what Mr. Whittemore pronounced "part of Harness" ; "the Harness"seemed to be a soft rol
thickly wound with fine cord or rope
510 Lion's claw in baked pottery
521 Large brush with traces of whitewash .
Mould for ring to which separate bezel was attached
Red pigment
Piece of wax
Box marked Grain from Kitchen
(Did not find "carbonized grain marked 55" unless the box contai
it one grain was larger than a cherry-stone)
Fragment of limestone inscribed
(perhaps this was "The vase on stand?"
266 Fine soft wood painted blue (not numbered
(surface was smooth as satin)
266: Found in two places

List of Objects presented to the Colorado Museum of Natural History, Denver, Colorado. Tell el-Amarna 1922.

One large complete painted pot.
5. Rough clay uraeus. (Village)
Three granite uraeis heads made for insertion in sandstone uraeus bodies. (Maru-Aten)
44. Rudder and oar of small model boat (Village)
62. Model oar. (Village)
161 Wooden axe handle. (Village)
125. Wooden kohl-pot. (Village)
135. Thin wooden knife. (Village) Piece of Rope
Four spindle whorls. XVIIIth Dynasty.(Village)
219. Clay figurine, female, broken. (Maru-Aten)
257. Limestone building block, carved in relief (Maru-Aten)
404. Limestone block carved with relief. (River Temple)
417. Fragment of inlay, blue glaze, decorated with concentric circles. (River Temple)
540. Scarab in white steatite. (Town site)
577. Potsherd of clay bowl with fish drawn in black. (Town site)
564. Fragments of limestone inscriptions (Town site)
596. Bronze fish hook. (Town site)
String of beads
Box of glaze
Paint brush and samples of paint.
570. Cluster of grapes, blue glaze.

Colorado Museum of Natural History, Denver, Colorado.

Moulds.
22. Plain ring. 44. Palm leaf.
50. Finger ring. 48. Finger ring.
77. Bes with symbols 80. Taurt
83. Bes. One unnumbered.
Amulets.
19. Taurt. 26 Bes with symbols.
50. Bes with symbols. B 41. Horus eye ring

Figure 1: *EES Distributions of Amarna artifacts to the DMNS, 1922, EES.DIST.REG.03, Courtesy of the Egypt Exploration Society*

The first item on the list, # 382, is described as a "Stone Trough". A student, Ms. Alethea Beaubien, has been researching the whereabouts of objects from Amarna in museums around the world, assisting Prof. Barry Kemp, who is trying to locate inscriptions on stone-work mangers (troughs) removed from the North Palace at Amarna.

Since I live in Denver, and have contacts at the DMNS, I was asked to see if the stone trough listed in the EES distribution list was still in the DMNS's collection.

I contacted the museum's collections curator, Ms. Erika Heacock, to see if the trough was in storage at the DMNS, since I was aware that it is currently not on display. She could not locate it in their collections, but she found a letter online from the Griffiths Institute that states: "The Denver Museum of Natural History originally received material from the 1922 Amarna season, but these were later sent to what is now called 'History Colorado,' either in 1929 or 1957."[1]

I then conducted an online search of the collections at the History Colorado Museum and soon found the 'missing' artifact: the stone trough numbered 382.

But, that's just the end of this story. Where it might have been originally discovered, and how it came to Denver warranted more research.

Prior to the time the gift was sent to Denver in 1922 there had been four periods of exploration by British teams at Amarna:

(1) 1891-92 by F. Petrie and H. Carter. It began as a survey, transitioned to excavations, and afterwards 132 cases of antiquities were sent to Cairo. The finds were subsequently divided with the Ashmolean Museum in Oxford;[2]
(2) 1901-1907 by Norman de Garis Davies, who copied scenes in the cliffside tombs;
(3) Jan 8, 1921 - Mar 23, 1921 by T.E. Peet (Figure 2), Francis Newton (Figure 3), Philip Langstaff Ord-Guy (Figure 4), A.G.K Hayter,[3] and A.R. Perry. They excavated 14 buildings in the main city, 4 tomb chapels, and discovered the Workmen's Village.
(4) Oct 20, 1921 – Feb 10, 1922. Directed by Leonard Woolley (Figure 5), it included excavators Francis Newton, Battiscombe Gunn (Figure 6), and Philip Langstaff Ord-Guy (Figure 4).

Figure 2: *T.E. Peet*

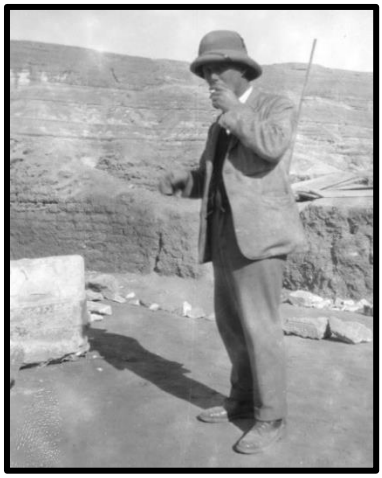


Figure 3: *Francis Newton*

Figure 4: *Philip Langstaff Ord Guy*

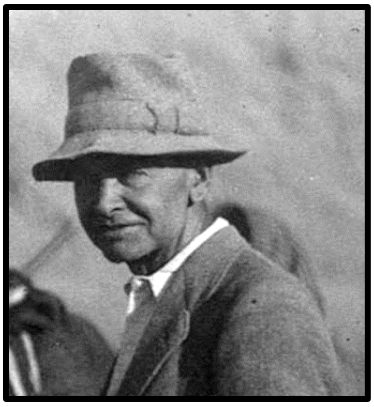


Figure 5: *Leonard Woolley*

Figure 6: *Battiscombe Gunn*

During Peet's excavations, some Main City buildings were dug first, and then on February 18, 1921, excavations began at an area to the east at the entry of the wadi that contained the Royal Tomb. It had been identified by a German team in 1907 as a cemetery. Peet noticed it was located at the confluence of several well-traveled roads, and he suspected it was more than a grave site.

What he subsequently uncovered was the Workmen's Village, a residence and workshops for the builders and decorators of the cliff-side tombs of the Nobles and the Royal Tomb. Further digging exposed four houses, which he numbered 501, 502, 511 & 512, and he discovered they were located within a walled village. He encountered a stone block at the entry of the first house, number 511, which had an incised wooden insert with a hole in it. It was a door post. Peet explains, "The intension was doubtless to provide a smooth bed for a wooden door-pivot, which if it had turned on stone, would rapidly wear out under the heavy friction."[4]

Peet also discovered, "large numbers of objects of domestic use, mostly made of wood. … In a passage outside house 511 was a complete bed, lying upside down. The framework was of wood and the cover of finely woven *halfa*-grass. Unfortunately it was in poor condition and crumbled away immediately when exposed to air. … The largest room in house 511 contained the fragments of a [vertical] loom, which was no doubt supported by the two slotted limestone blocks which lay near the center of the floor. … [Also found] was a warp-spacer … to keep the threads of the warp in position."[5] In the same room were found large numbers of spindles (Figure 7).

A total of 12 rooms in houses 511 and 512 were cleared. Then, his team went on to excavate four chapels beside the walled village

The Workmen's Village house, number 511, will show up again later in my story.

Figure 7: *Spindle Whorls found in House 511, Workmen's Village, History Colorado*

The excavation teams stayed at the Amarna dig house (Figures 8 & 9). It had originally been built in 1906 by Ludwig Borchart on top of the foundations of an ancient Egyptian house.

The dig house was constructed next to an earlier house built by Flinders Petrie, which was used as a storage magazine by the German, and later by the English, excavators.

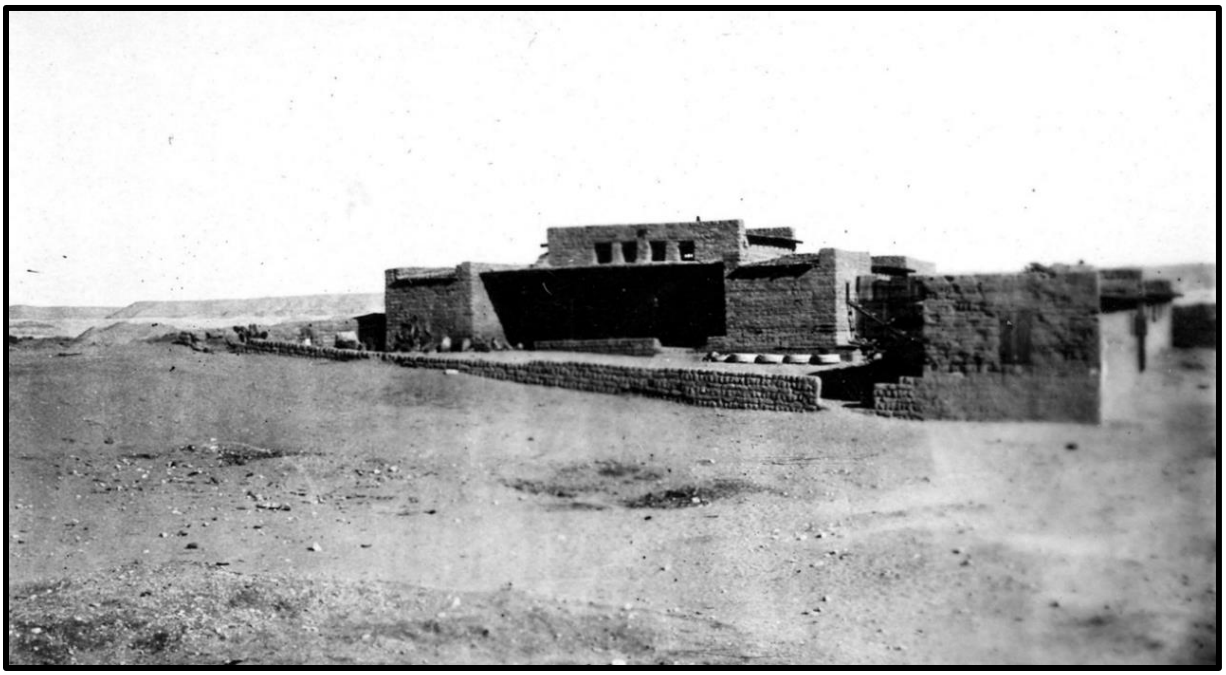


Figure 8: *The Amarna Dig House in the 1920s*

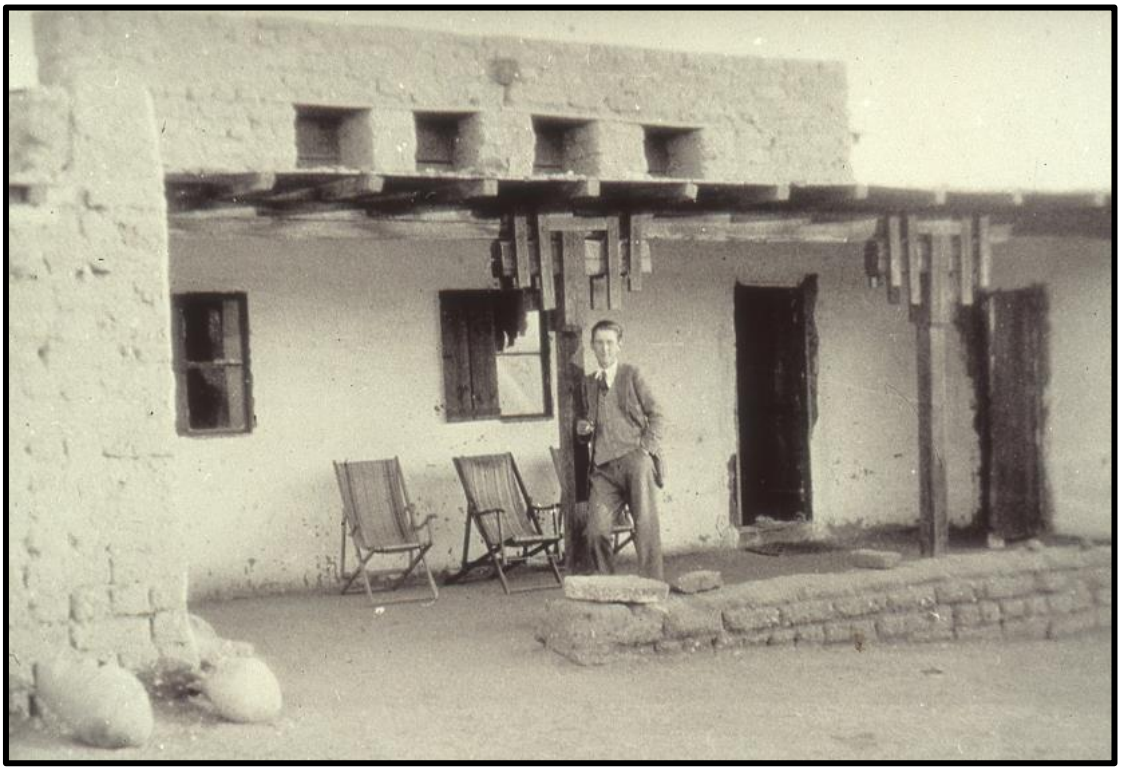


Figure 9: *Amarna Expedition House in 1923 (Walter Emory in photo)*

While it is possible the stone trough sent to Denver was excavated during Petrie's 1891-93 seasons, I believed it was more likely it was unearthed by either T.E. Peet or C.L. Woolley's teams working in 1921 and 1922.

Peet's early 1921 excavations were conducted in two areas of Amarna (Figure 10): The Main City, and the Workmen's Village.

Woolley's excavations in late 1921 and early 1922 were carried out in four areas of Amarna: (1) The Main City; (2) The River Temple (near the village of Hagg Qandil); (3) The precinct of the Southern Pool (The Maru Aten); and (4) the Workmen's Village.

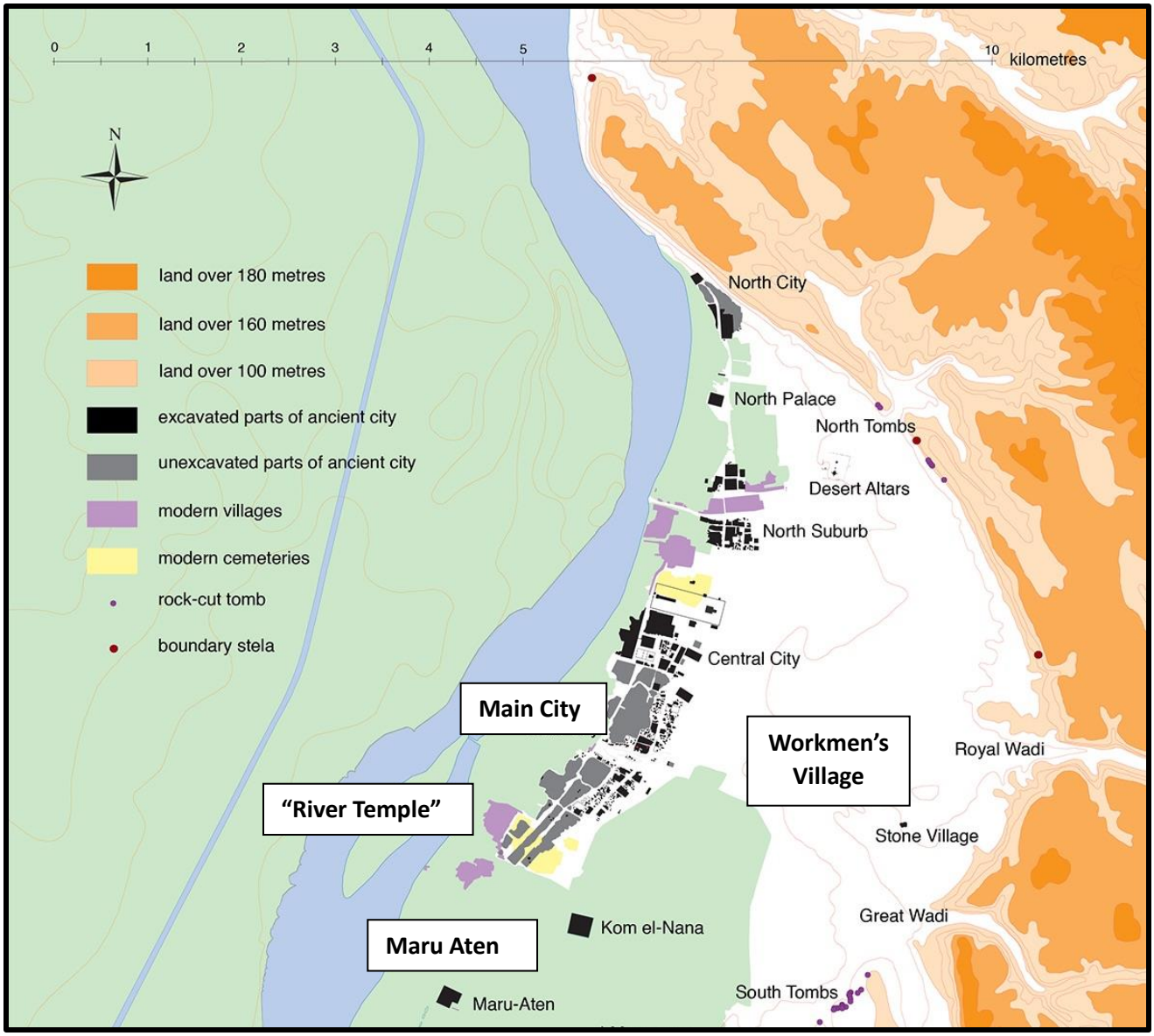


Figure 10: *Map of Amarna showing the 1921-22 excavation sites*

I concluded the stone trough was probably found at one of the sites these teams excavated in the 1921 and 1922 seasons. But which site was it?

The River Temple? The Maru Aten? The Main City? Or, the Workmen's Village?

Let's examine the four sites individually, to see if any of them are a likely candidate for the stone trough sent to Denver.

River Temple:

The Griffith's Institute said of the excavations at the 'River Temple', "The site was investigated because of the stories that 2 decorated lintels have been found there and this identified a sizable mound which the south section of the modern village was built upon. The excavation was limited to areas lying between houses and areas of cultivation. The excavation of this area lasted from 10 December (1922) and was abandoned due to the difficult situation of modern occupation and cultivation that had destroyed the ancient ruins."[6]

Figure 11: *The "River Temple" excavated in 1922*

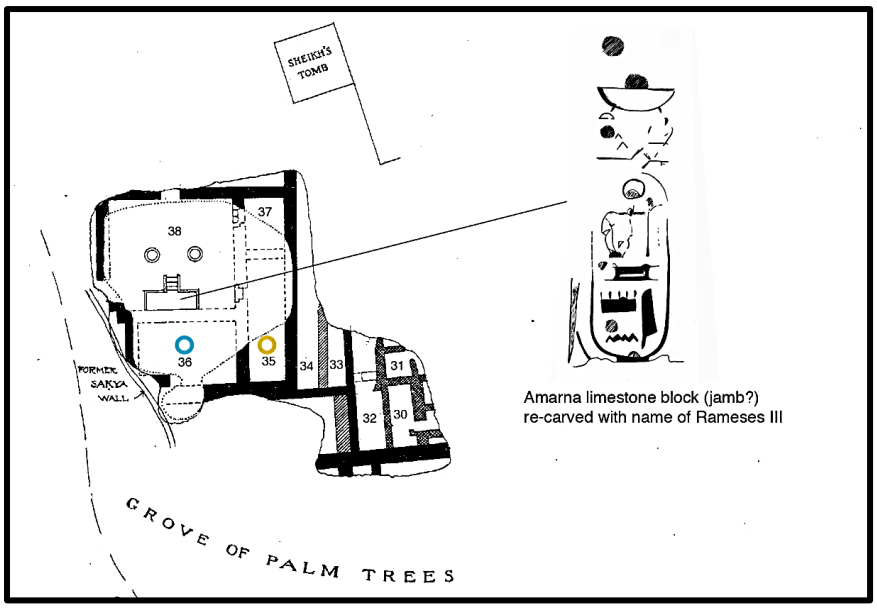


Figure 12: *Plan of the River Temple, showing area excavated*

The 'River Temple' (Figures 11 & 12), was later determined to be a 19th Dynasty Villa, belonging to an Overseer of Works under Ramses III.[7] It was apparently used to complete the final dismantling of stone work at Amarna.[8] The area excavated does not appear to have included a stone trough.

The Precinct of the Southern Pool (Maru Aten):

The Griffith's Institute said about Woolley's excavations here, "The name of the area was taken from a phrase that is commonly found in the epigraphic remains in the vicinity. The site is behind and to the north of the modern village of Hawata and was first excavated by M. Barsanti in 1896 who found painted pavements and frescos, the majority of which are in Cairo although some are in Berlin; as the Germans also dug for one day in the area in 1907. Woolley's excavations in this area started on November 18 (1922) but the area had been seriously damaged by sabakh digging."[9] The site is comprised of two rectangular enclosures which contained lakes, gardens and buildings (the excavators name a temple, a summer house, an audience hall, and a possible harem)."[10]

This site was actually the location of the Maru Aten (Figure 13). It was excavated and a plan of the temple was created. The plan showed a lake and several buildings, which included temples and shrines.

Inscriptions found at the Maru Aten named its owner as Akhenaten's oldest daughter Meritaten, and her name had been carved over earlier inscriptions of Akhenaten's secondary wife, Kiya. Although there were large "T"-shaped water basins, perhaps for water plants, there were no residences, or animal mangers. So it is unlikely that our trough came from this site.

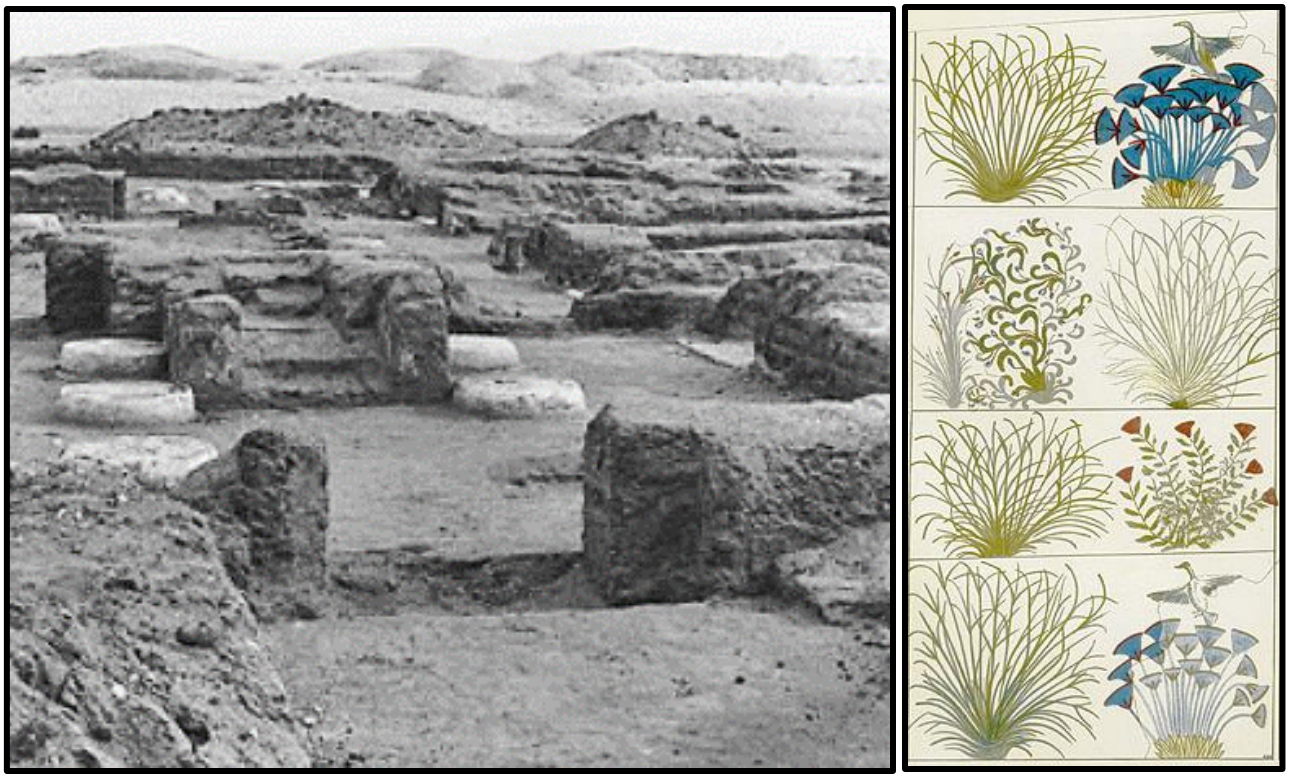


Figure 13: *The Maru Aten in 1922*

Figure 14: *Carved Block from the Maru Aten, # 22/257. History Colorado*

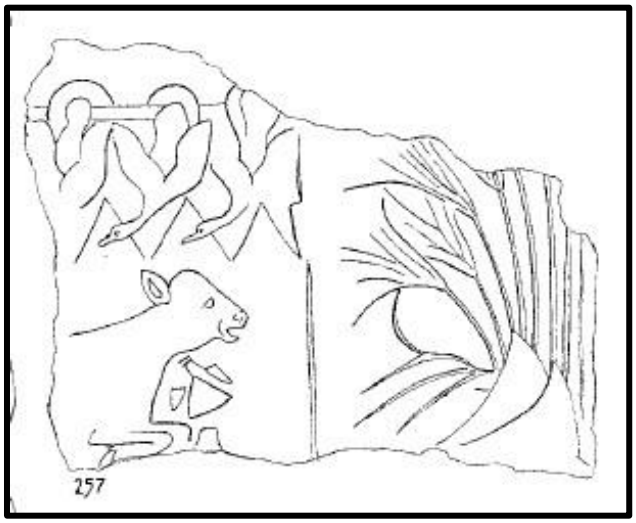


Figure 15: Block from Mau Aten, JEA VIII, plate LXII

The Main City:

According to the Griffith's Institute, Woolley's "Excavations continued in the main city where there were 20 houses between High Priest's Street and the Sikket-es-Sultan; to the west of this group a series of three houses were excavated but abandoned due to contemporary damage; a group of houses were dug adjacent to the earlier excavation of 1921; and five isolated houses excavated between the dig house and the village toward the southern outskirts of the city."[11]

Figure 16: *Woolley's team excavating the house of Ranefer, late 1921*

The Main City (Figure 16), could have been the source of the trough, as Amarna houses often contained troughs and pens for animals.

Several houses were found with small square basins, set up to catch run-off water, for example the shower catch basin shown in Figure 17, or the bathroom catch basin shown in Figure 18. Both of these basins were found in the Vizier Nahkt's house, a splendid mansion excavated by Woolley's team. The pictures of Nakht's bathroom and toilet were actually taken later during 1924 excavations by F. L. Griffith, and it is not known if Peet or Woolley's teams found anything similar in their 1921-22 excavation of the Main City.

Some other items in the EES distribution list sent to Colorado are marked as having been found in the Main City excavation, so it seemed possible that the trough was originally discovered there.

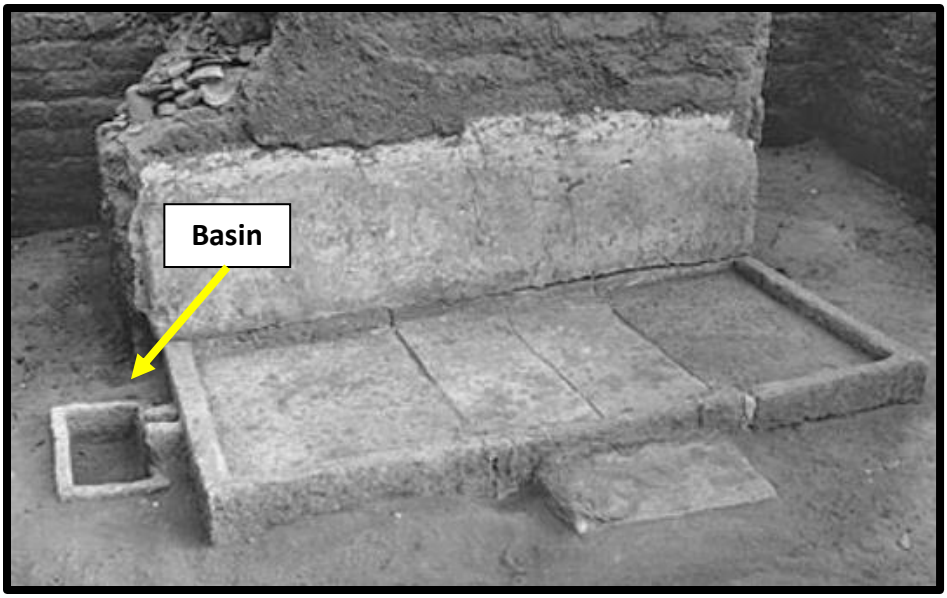


Figure 17: *Shower and catch basin, Main City, excavated 1924*

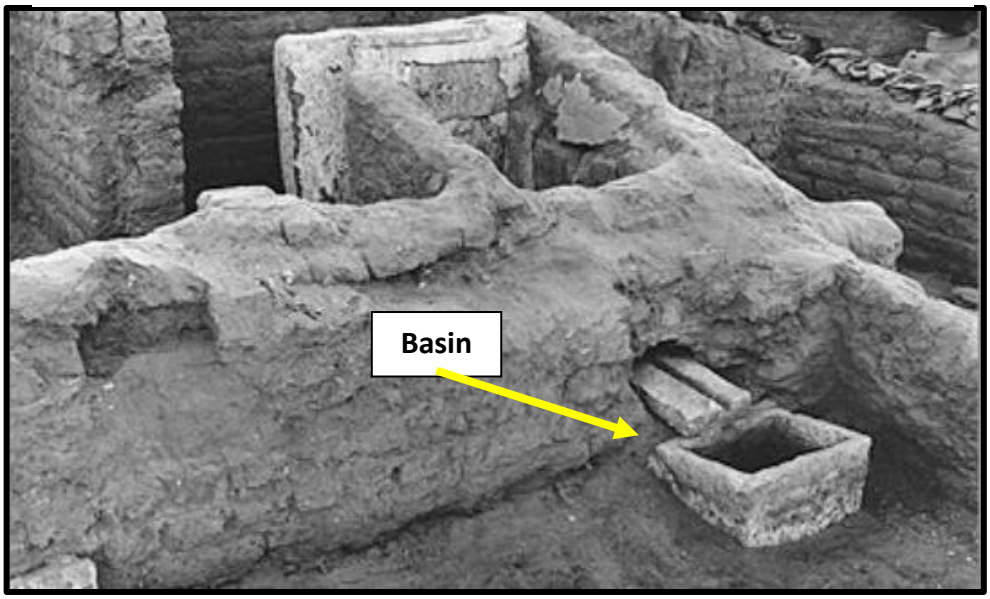


Figure 18: *Bathroom (toilet?) and catch basin, excavated 1924*

But, there is no indication in the EES distribution list that any of the troughs found in the main city were collected by either Peet or Woolley.

The Workmen's Village

The fourth area excavated, the Workmen's Village, showed however that many stone troughs were found. Woolley called the Workmen's Village both, 'The Grave-diggers Village, ' and the 'Eastern Village.' (Figure 19).

Woolley said, "It is a curious spot in which to find a village, especially in Upper Egypt, where the *fellahin* live as close as possible to the fields they cultivate, building their houses along the strip between the tilled land and the desert; this village is far from any possible cultivation, as far away into the desert as water-transport would allow—for there can have been no wells in this high sandy valley and all water must have been laboriously carried from some well or canal down in the plain, if not from the Nile itself. It would seem to be intentionally separate from Akhetaten and secluded from it. Yet it is a central site; for, as the map shows, it is a converging point for half-a-dozen of the roads still to be traced across the desert; and it is just about half-way between the northern and the southern groups of gallery tombs, with both of which it is connected by those roads. The place is, as we shall see, a workmen's settlement, and it is difficult to avoid the conclusion that its inhabitants were the men employed on the great rock tombs which were being excavated on the edge of the Upper Desert for the noblemen of Akhenaten's court. Perhaps because their profession bore something of the stigma which we know attached to the embalmers, perhaps because tomb-workers in general shared the ill-repute earned by their obstreperous mates at Thebes, they were removed as far as might be from the neighborhood of the city, and guard-houses were built upon the road that led down to it."[12]

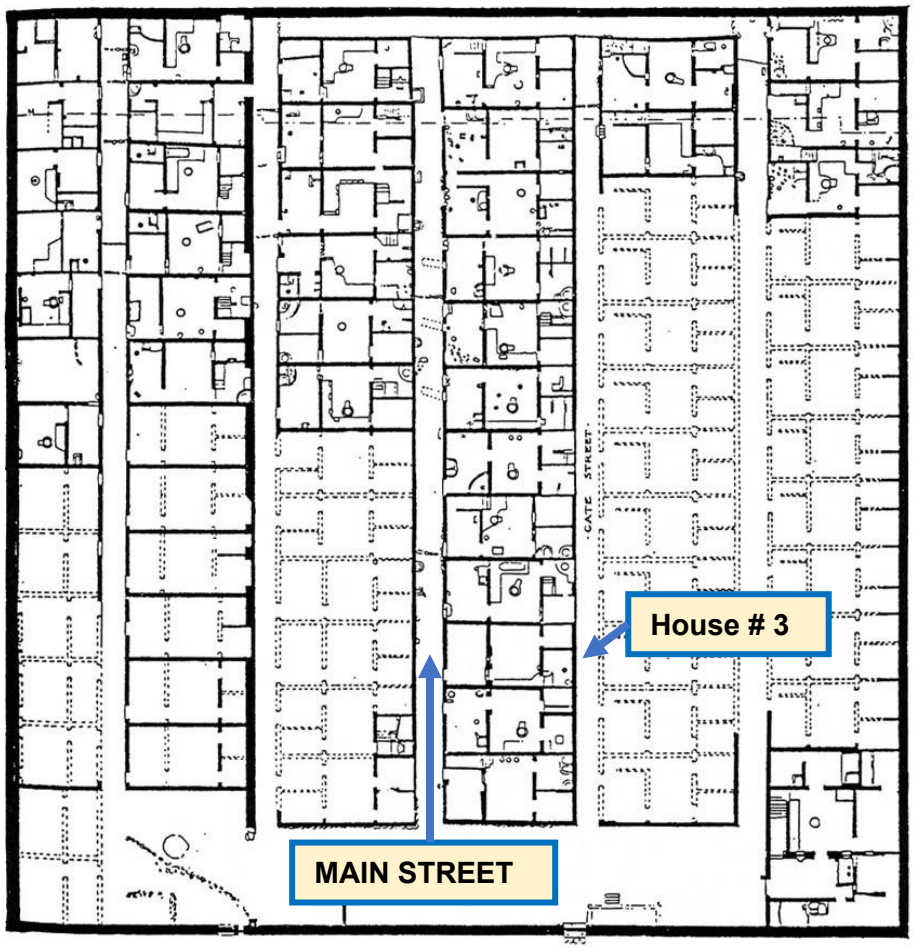


Figure 19: *Newton's plan of the Workmen's Village*

Woolley states, “The owners of several houses in Main Street built … into the ground against the wall, big stone bowls surrounded with mud coping whereon stood great jars holding the household water supply, and they built brick mangers against the wall and kept their cows or donkeys there. One can see, built into the brickwork of the manger the cross-stick with the tethering rope still fast about it (Figure 20)”.

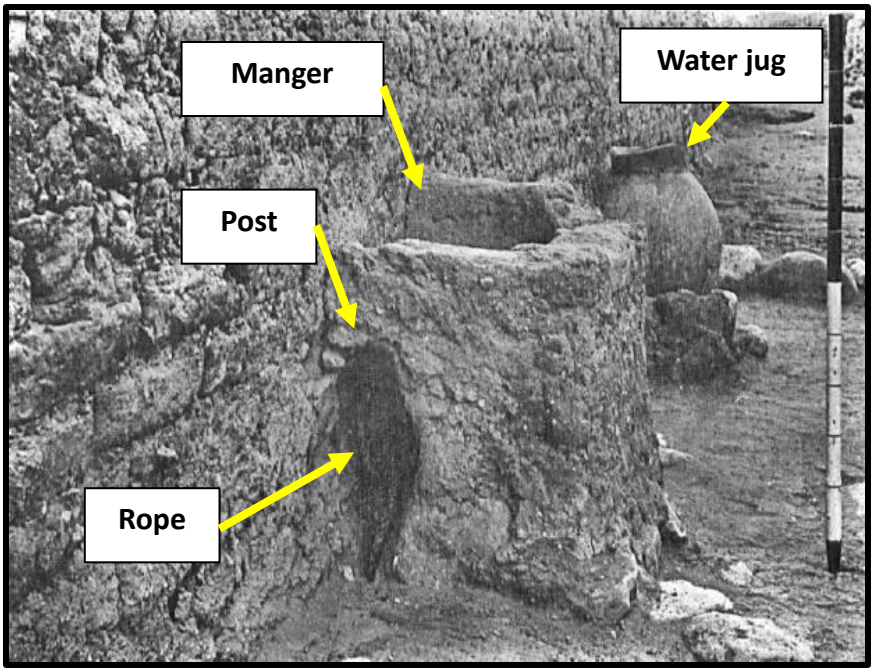


Figure 20: *Main Street Manger, Workmen’s Village, with tethering rope & water jug*

The entry houses in the Workmen’s Village often had pens and troughs in their entry hall (courtyard) where the animals could be tethered (Figure 21). These entries were covered with an awning to shade the pens and troughs.[13]

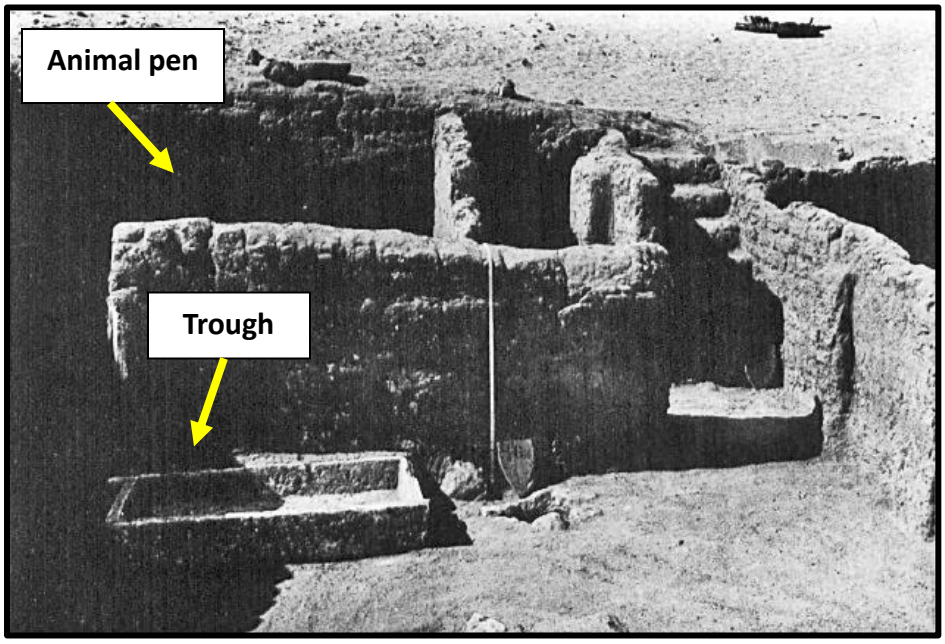


Figure 21: *Trough at #15 West Street, Workmen’s Village*

Figure 22 is a reconstruction of one of these houses, at # 8 Gate Street. On excavation plan drawings, some of these throughs are shown as rectangular and others as square shaped (e.g. Figure 24, blue arows). Barry Kemp has stated that evidence shows that the pens surrounding the Workmen's Village were used to keep pigs, not donkeys, goats, or cows.[14]

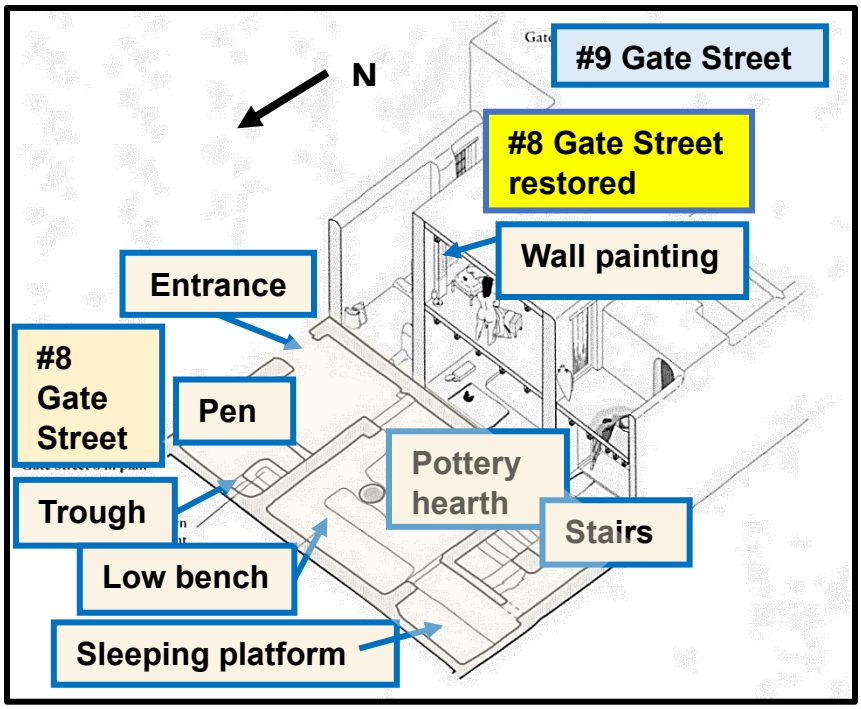


Figure 22: *Reconstruction of house at #8 Gate Street*

Woolley describes the type of house found in the Walled Village, "The street door of a house led straight into the front hall, which measured about five metres across by two or two and a half metres deep and had in its far side a door giving on to the *mandarah* (reception room). The hall was essentially a "general utility" room. Sometimes, undoubtedly, it was shared with the smaller cattle; a manger against one wall is a common feature and tethering stones were occasionally found, while the rough stone troughs which often occurred in the outer rooms were probably for watering the animals; in a few cases there is found in one corner a patch of flooring strengthened by having big boulders let into it, and this seems to have been the place where the beasts were tied up. When the north part of the room had a staircase, the cupboard under the stairs was always found to contain a litter of chopped straw and a little grain, so that generally we can take this to be the store of fodder for the animals in the main room. Indeed, while allowing for the principal herds being penned in the south-west comer of the village and for an occasional cow or donkey being tied up for the night outside the front door, we can safely say that more often than not a man's beasts shared his house with him. But they were confined to the hall. Only once, at No. 11, Main Street, was there proof of animals being kept in the *mandarah:* here there was a brick manger against the south wall and in front of it, embedded in the floor, a naturally-pierced boulder with the tethering-rope still fast through the hole; but the case is so exceptional that one suspects it was for a pet goat! The only other exception was in No. 8, Main Street; the family were the proud possessors of a horse, and were so nervous for its safety that they kept it, rather straitly confined, in the little cupboard under the backstairs. There were probably very few horses in the village."[15]

Even more troughs and animal pens have been found in the area around the Workmen's Village. The area is shown in Figure 23. A plan of a building # 400, Figure 24, shows many pens (red arrows) and troughs (blue arrows). Figure 25 is a photo of one of these pens.

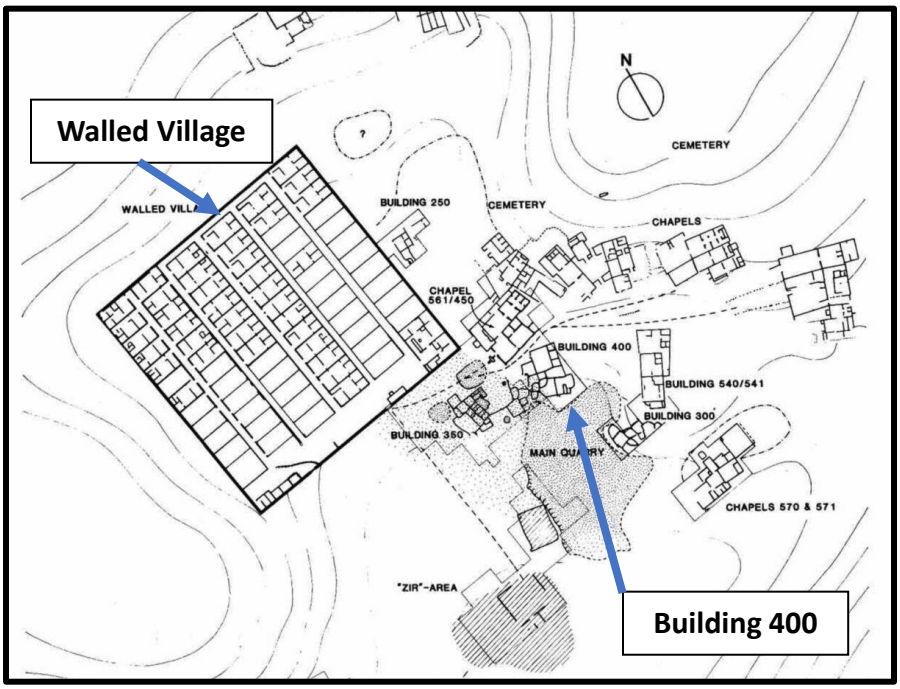


Figure 23: *Buildings surrounding the (walled) Workmen's Village*

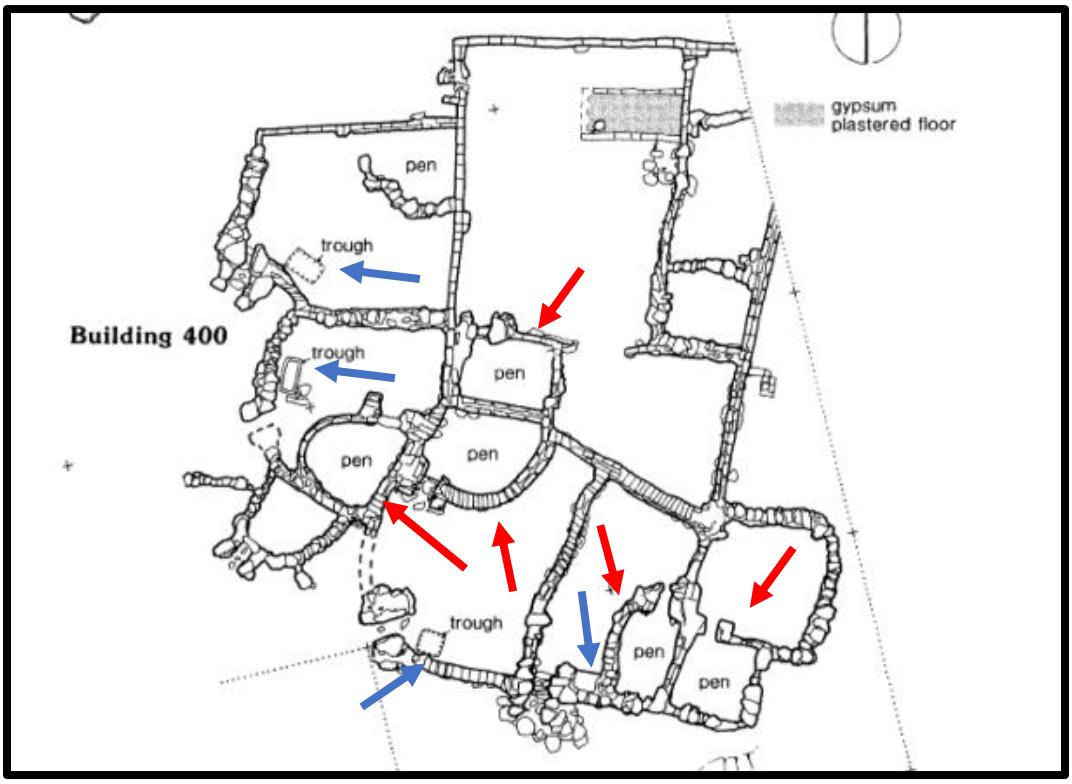


Figure 24: *Building 400, Workmen's Village*

Figure 25: *Animal Pen and trough, Building 400, Workmen's Village*

Woolley also had the entry hall of several houses in the Workmen's Village photographed, and two photos showed troughs in situ , one of which is shown in Figure 26 (with workmen posing for scale).

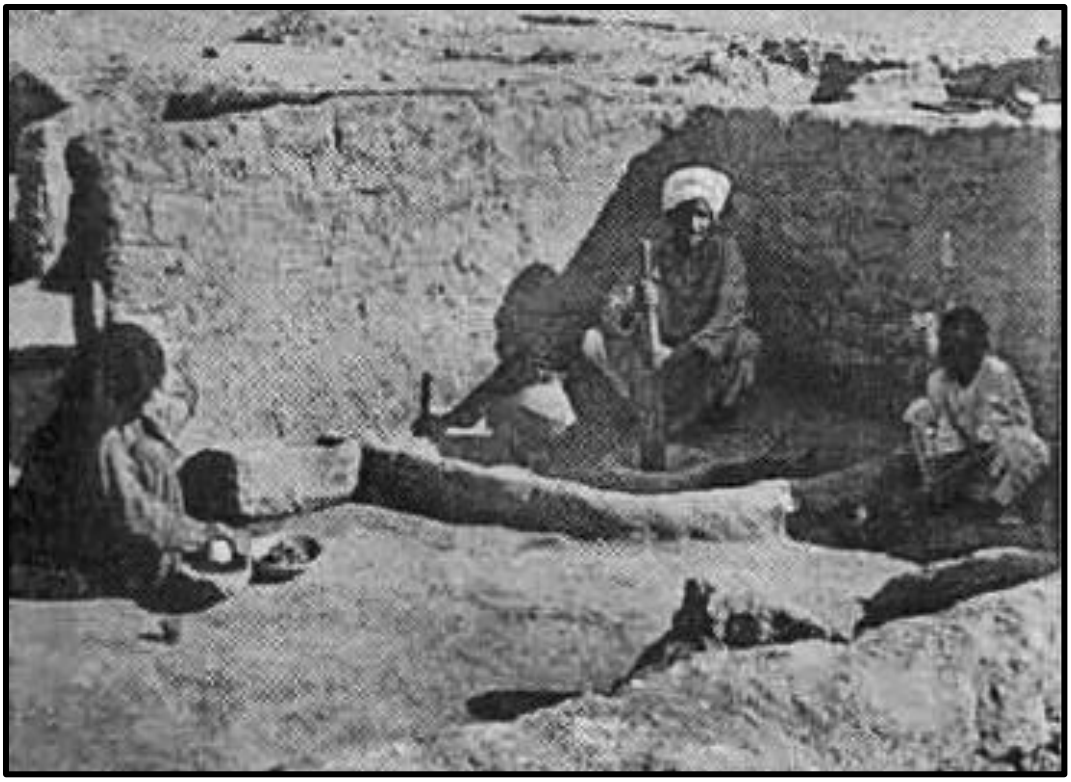


Figure 26: *Entry Hall in house #9, Main Street, Workmen's Village*

Woolley also described a number of recovered objects from excavations in the Workmen's Village. The house at # 9, Main Street, had a nicely decorated pilaster, Figure 27, illustrating the skill of these tomb decorators who lived in the village.

Also, the items shown collectively in Figure 28 , now in the Colorado History Museum, were all listed on the EES distribution list as found at the Workmen's Village: (1) Painted Pot # 1061, (2) Wooden Kohl Pot # 125, (3) Wooden weaving tool # 135, (4) Wooden axe handle # 161, (5) Model boat rudder & oar # 44, and (6) Model boat oar # 62.

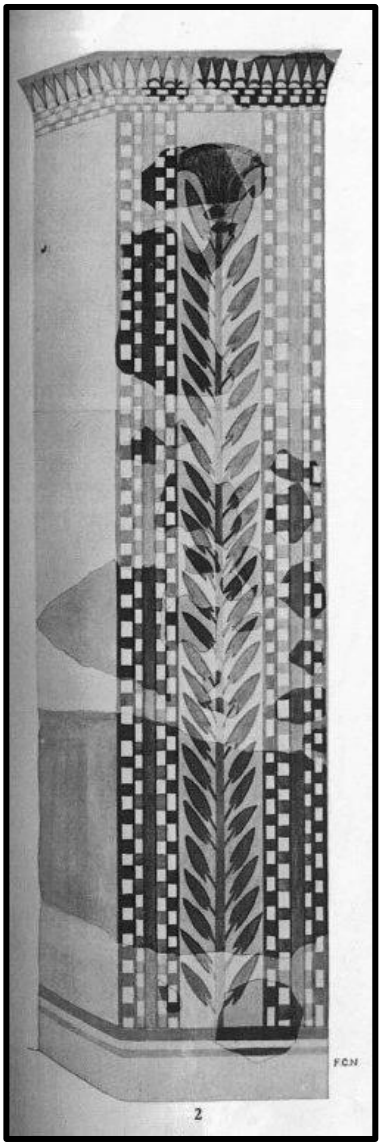


Figure 27: *Painted Pilaster, House # 9, Main Street, Workmen's Village*

Figure 28: *Six objects found by an EES Team in the Amarna Workmen's Village, History Colorado*

EES Distribution of artifacts:

The EES archives show they distributed objects from Egypt to many museums. They show donations of Amarna artifacts to numerous museums in the United Kingdom, and 32 foreign museums:

Australia – 1
Austria – 1
Belgium – 3
Canada – 3
Netherlands – 3
New Zealand – 3
South Africa – 1
USA – 17

The stone trough sent to Denver may be the same trough sent to The Commercial Museum of Philadelphia for an exhibit in 1921, as shown on page 27 of EES distribution list. It was listed as a stone trough, and also numbered 382. Then, it seems it was sent from Philadelphia to Denver. A note in the Colorado History states that it was acquired through the efforts of Denver philanthropist, U.S. Senator Lawrence C. Phipps.

Figure 29 is a photograph of trough # 382 which is now in the Colorado History Museum.

Figure 29: *Object #382, cataloged as '0.2095.1, a trough from Amarna', History Colorado Museum*

How finds were numbered:

The Griffith's Institute explains how objects found at Amarna were numbered from each excavation, "The original object numbering system started from no. 1 each year and prefixed to each number two digits to represent the year in which the excavation season started. Thus, object number 26 recorded during the 1921 season appeared as 21/26. Occasionally, several different objects are listed under the one registration number. Usually, the excavators distinguished between them by means of lower case letters added as suffixes to the registration number (e.g. 21/26a), a system followed here, with each object listed in a separate row. At times, however, these suffixes were not added. It has been felt unwise to add them at this stage, so the objects are simply listed on separate rows, each assigned the same registration number."[16]

Hence, our object # 382 would have been numbered as 21/382, or 22/382, depending on the year in which it was found.

Object identified!

Barry Kemp comments, "I did a search for /382 (not knowing the excavation year) and found object 21/382. It is listed as a 'stone trough' with dimensions 25 x 11 x 14 cm (9.8 x 4.3 x 6.6 inches). It is from the 1921 excavations at the Workmen's Village, house Main Street 3, and listed as now located in Colorado. It must be your piece O.2095.1."[17]

Figure 30 is a copy of the field drawing of this object. During excavation the house in which it was found was initially numbered 511, but subsequent digging revealed it was part of the walled village, and after its streets were unearthed, and more houses found, the streets were named and the house renumbered # 3 Main Street. The reason this house is depicted as empty in the plan of the Workmen's Village (Figure 19) is probably because the house was cleared before Newton drew up the plan.

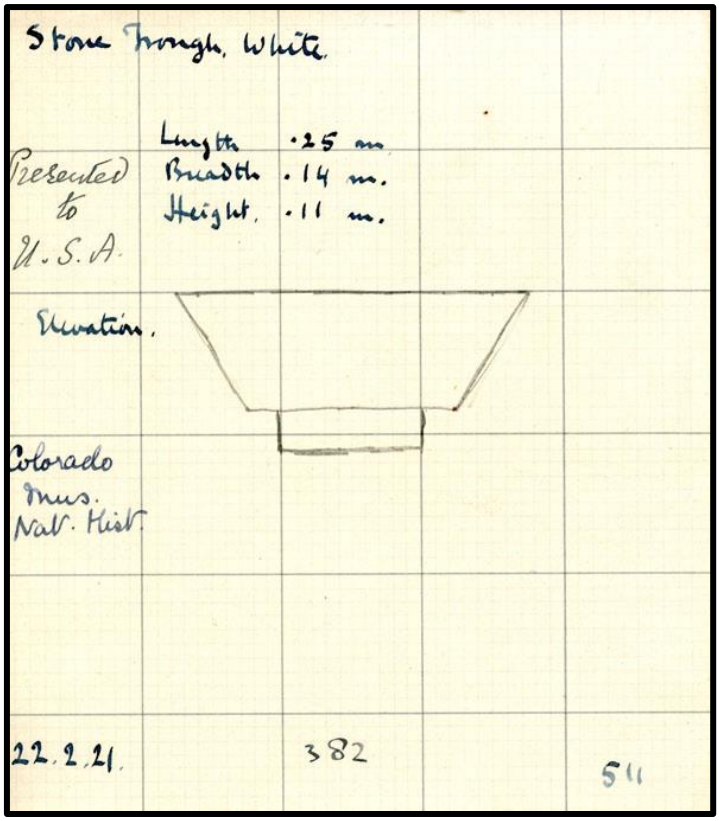


Figure 30: *EES drawing of object 21/382, TA.OC.21.382, Courtesy of the Egypt Exploration Society*

Conclusions:

So, what has been learned from this quest? Several things stand out:

The EES was very generous in their donation of artifacts to various museums both in the US, and abroad.

These donations did not always find a new permanent home, but were frequently transferred from institution to institution. Sometimes museums closed and their collections were transferred to others. Other times object were deaccessioned, and either traded or sold to other institutions, or to individuals.

Excavation records were not as thorough or complete 100 years ago as they are today, and sometimes an object's provenance either was not recorded, or has subsequently been lost.

The scarcity of water at Amarna meant numerous storage jugs and vessels were needed in the city and villages. Especially in the Workmen's Village, which is far from the Nile.

Many residences at Amarna seem to have animal pens, perhaps for pigs or donkeys. These animals needed troughs to eat and drink from, and many animal troughs have been found at Amarna.

Catch basins have also been found so that waste water (for example from bathing or ablution) could be caught and perhaps repurposed: to water plants, or to wash dirty or dusty objects. In general these basins appear to be smaller than the animal drinking troughs.

While I originally believed it possible that the Denver object could have been a catch basin, it is more likely that it is a small trough, just large enough to provide water or feed for a single animal in a small enclosure - at the Workmen's Village. Two similar troughs are shown in Figure 24. They are small and square, and not elongated rectangular basins.

Two possible sites for the trough were from either Peet's or Woolley's excavations in the Main City, or the Workmen's Village.

EES records were located that show trough number 21/382 was excavated by Peet's team in 1921. It was sent to the EES in London, and then along with other items from Amarna it was dispersed abroad in 1922, and shortly thereafter wound up at the DMNS.

Records show that either in 1929, or 1957, the EES Amarna donation to the DMNS was transferred to the Colorado History Museum (History Colorado).

The stone trough numbered O.295.1 at the History Colorado Museum also bears the number '382' in ink, from it's original marking at Amarna.

Although it is currently not known who resided in the Worker's Village house on Main Street number 3, additional information about this residence may come to light, through more archival research, or further excavations.

PICTURE CREDITS:

[1] EES Distribution List, email from Alethea Beaubien, 1/3/2024, pp 53-55
[2] https://storage.googleapis.com/jnl-up-j-bha-files/journals/1/articles/591/submission/proof/591-10-2904-1-17-20161129.jpg
[3] https://www.doaks.org/resources/online-exhibits/before-byzantium/amarna-gallery/egypt-exploration-society-excavations-at-amarna-egypt-1923-1924/@@images/image
[4] https://vilnay.kinneret.ac.il/p-l-o-guy/
[5] https://lh3.googleusercontent.com/proxy/q_ti4v0667Y62djv_6c-w1kIU3ZJ1UKbgBKcqwlDFoM3Y9JfrhSu2ifXLyVi_dcxka6B1WSP-OWhi49W9_oeGYPGDEiniP4Og1pf9A
[6] https://en.wikipedia.org/wiki/Battiscombe_Gunn#/media/File:Battiscombe_Gunn,_Egyptologist.jpg
[7] https://5008.sydneyplus.com/HistoryColorado_ArgusNet_Final/Portal.aspx?lang=en-US&d=d
[8] https://www.doaks.org/resources/online-exhibits/before-byzantium/amarna-gallery/egypt-exploration-society-excavations-at-amarna-egypt-c.-1920s-9/@@images/image
[9] https://amarnaanniversary.wordpress.com/2017/05/27/the-southern-expedition-house/
[10] https://www.arch.cam.ac.uk/sites/www.arch.cam.ac.uk/files/media/amarna-map-large.jpg
[11] Kemp, Barry, *After the Founder*, Akhetaten Sun Vol. 28 No. 1, 2022 p. 19
[12] Kemp, Barry, *After the Founder*, Ibid., p. 21
[13] https://www.amarnaproject.com/pages/amarna_the_place/maru_aten/index.shtml
[14] https://5008.sydneyplus.com/HistoryColorado_ArgusNet_Final/Portal.aspx?lang=en-US&d=d
[15] Woolley, Leonard, *Excavations at Tel El-Amarna,* JEA VIII, pl. LXII
[16] https://www.amarnaproject.com/images/amarna_the_place/main_city/4.jpg
[17] https://www.amarnaproject.com/pages/amarna_the_place/main_city/index.shtml
[18] https://www.amarnaproject.com/pages/amarna_the_place/main_city/index.shtml
[19] https://socks-studio.com/2018/05/22/the-eastern-workers-village-at-amarna-c-1349-1332-bce/
[20] Woolley, Leonard, *Excavations at Tel El-Amarna,* JEA VIII, pl. IX
[21] Woolley, Leonard, *Excavations at Tel El-Amarna*, JEA VIII, pl. VIII
[22] Kemp, Barry, *The City of Akhenaten and Nefertiti,* Thames & Hudson, 2012, p. 185
[23] https://socks-studio.com/2018/05/22/the-eastern-workers-village-at-amarna-c-1349-1332-bce/
[24] https://www.jstor.org/stable/3821519?read-now=1&seq=18#page_scan_tab_contents [25] https://www.amarnaproject.com/pages/amarna_the_place/workmans_village/index.shtml
[25] https://www.amarnaproject.com/pages/amarna_the_place/workmans_village/index.shtml
[26] Peet & Woolley, The City of Akhetaten, Egypt Exploration Society, 1923, pl. XVII

[27] Peet & Woolley, The City of Akhetaten, Egypt Exploration Society, 1923, pl. IX
[28] https://5008.sydneyplus.com/HistoryColorado_ArgusNet_Final/Portal.aspx?lang=en-US&d=d
[29] https://5008.sydneyplus.com/HistoryColorado_ArgusNet_Final/Portal.aspx?lang=en-US&d=d
[30] Drawing sent by Barry Kemp, email 1/7/2024

END NOTES

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[1] https://egyptartefacts.griffith.ox.ac.uk/destinations/denver-co-museum-nature-and-science, but I later determined at least some of the objects were excavated in 1921.
[2] Barry Kemp comments. “a large share was given to Lord Amherst of Hackney as his personal property and was subsequently sold at Sotheby's in London in 1921, no proper catalogue having been made. Other museums also received objects from Petrie's work though not from Amherst and Carter's work which was separate from Petrie's.” Email received 1/16/24.
[3] For more information on A.G.K. Hayter’s work at Amarna, see Hodgkinson, Anna K. and Boonstra, Stephanie L., *A.G.K. Hayter at Amarna: a detailed notebook and a “new” glass workshop*, Horizon, Issue 23, Spring 2023, pp. 16-21
[4] Peet, T. Eric, Excavations at Tell El-Amarna: A Preliminary Report, JEA VII, April 1921, p. 176. Although Peet describes the pivot at the main entrance to the village, he also states that a similar pivot was found at house 511 (#3 Main Street).
[5] Peet, Ibid, p 177
[6] Artefacts of Excavation: British Excavations in Egypt 1880-1980, 1921-22 el-Amarna, https://egyptartefacts.griffith.ox.ac.uk/excavations/1921-22-el-amarna
[7] Woolley, C. Leonard, Excavations at Tel el-Amarna, JEA Vol 8, No. 1/2 , 1922, pp. 65-70, https://www.jstor.org/stable/3853624?read-now=1&seq=28#page_scan_tab_contents
[8] Kemp, Ibid. p. 21
[9] Sabakh digging is the reuse of ancient mud brick as planting media and fertilizer, since it contains organic debris.
[10] Artefacts of Excavation: British Excavations in Egypt 1880-1980, 1921-22 el-Amarna, Ibid
[11] Artefacts of Excavation: British Excavations in Egypt 1880-1980, 1921-22 el-Amarna, Ibid
[12] Woolley, Ibid. p. 48
[13] Woolley, Ibid, p. 51
[14] Kemp, Barry, The Amarna Workmen’s Village in Retrospect, JAE 73 p. 40
[15] Woolley, Ibid, p. 55. Barry Kemp states, “Important to realise that neither Peet nor Woolley recognised that many of the buildings between the walled village and the chapels were for the keeping of pigs, done so in a well organised way that has no known parallel either in the Main City nor at other sites in Egypt.” Email 1/16/2024
[16] https://egyptartefacts.griffith.ox.ac.uk/marks/el-amarna-ees-1920s1930s
[17] Email received 1/6/2024

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