EXCAVATIONS AT TELL EL-BALAMUN

2003 - 2008
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A J SPENCER

with a contribution by Tomasz Herbich
Front cover: Relief block of Sheshonq III, re-used in Temple E.

Back cover: The north-east sector of the Roman street.
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**Preface**

This volume is a publication of work by the British Museum at Tell el-Balamun in the seasons 2003 to 2008, which involved excavation in a range of different locations on the site and revealed monuments from various periods. In 2003, after first testing some of the house-remains from the Ptolemaic and Roman periods, excavation moved to the study of a major Roman street which was found to traverse the mound from the north-east towards the south-west, running above the line of the original approach to the temple of Amun. Additional parts of this street were excavated in 2004, but the main project of that season was the excavation of the front part of the foundation of the subsidiary temple of Nekhtnebef.

From 2005, magnetic mapping was introduced for the study of the sacred enclosure, arranged as a collaborative venture with the Polish Center for Mediterranean Archaeology of the University of Warsaw, represented by Dr Tomasz Herbich, who has co-authored Chapter 11. The success of the magnetometry led to the discovery of many new details which could be explored further by excavation. Features which have been investigated, all of which are published in this volume, include an anonymous brick-built temple (Temple D), a gate in the eastern side of the Inner Enclosure Wall and a stone-built chapel which dates from the twenty-sixth dynasty (Temple E).

Thanks are due to the Chairman of the Supreme Council of Antiquities, Dr Zahi Hawass, and the directors and staff in the offices at Cairo and in El-Mansura for assistance with the organisation and operation of the project, as well as to the Inspectors who worked on the excavation in recent years, Hamdi Abdel Azim, Yasser el-Sayed el-Gamal, Saad el-Sayed Mansur and Mahmud Ragab Aid Rifai. The excavations were completed thanks to the assistance of a skilled local workforce and the project was managed and documented by Patricia and Jeffrey Spencer. The magnetic survey since 2005 was led by Tomasz Herbich, assisted by Dawid Święch and Artur Buszek. The assistance of Donald Bailey and Richard Abdy with the identification of certain finds is gratefully acknowledged.

The results of earlier seasons have been published through the British Museum Press in three volumes (Spencer, 1996, 1999 and 2003). The present publication is being made available through digital distribution, which combines the advantages of lower cost, instant transmission and the use of colour images throughout. Details on how to obtain the publication are available at:


The discoveries made by the British Museum expedition since 1991 have altered the perception of the site from that of a remote and unfamiliar location to that of a substantial ancient city. The numerous monumental buildings excavated within the great temple enclosures testify to the significance of the place and to the resources which various rulers were prepared to commit to its development. The details revealed by excavation and the clarity and quantity of the features shown on the magnetic map combine to present a substantial record of the monumental area at this most northerly city of Pharaonic Egypt.
Arnold 1994

Arnold 2003

Aston 1998

Bailey, Davies & Spencer 1982

Bailey & Snape 1988

Becker, et al. 2000

Bietak, Forstner-Müller & Herbich 2007

Caminos 1974

Cauville 1990a

Cauville 1990b
Cauville, S., “Les inscriptions dédicatoires de Dendera,” in BIFAO 90 (1990), 105-6, 111.

Cooney 1974

De Rodrigo 2004

Derchain-Urtel 1981

Forstner-Müller, et al. 2004

Forstner-Müller, et al. 2007

Forstner-Müller, et al. 2008

Gaffney and Gater 2003

Hartung et al. 2003

Herbich 2002

Herbich 2003
1. The Roman street at Tell el-Balamun: supplementary details

This description is intended to add to the previously-published report on the archaeology of the Roman street at Tell el-Balamun by providing some more details on the construction and stratigraphy of the north-eastern section which it was not possible to include in the previous account, as well as publishing the central section for the first time. This part was discovered in the season of 2004. An opportunity is also taken to publish illustrations in colour (some of which have appeared previously only in monochrome, while others are published here for the first time), since colour is essential to the detection of features in the archaeology of Delta mounds.

Although it is almost certain that the Roman street extended right across the site, in the manner observed in other redeveloped Egypto-Roman cities, so far its presence has been confirmed by excavation at three different points along its length, which are:

1. At the north-east, close to the gate in the Inner Enclosure Wall, where remains of two levels of the street were found in 2003.

2. The central section, some 140 metres south-west of the previous, where a length of approximately 20 metres of the street was revealed in the 2004 season.

3. Above the ruins of the front part of the Amun-Temple, where a well-preserved area of the upper-level paving of the street was found in 1991. Without the context of the later discoveries, it was thought at the time that this pavement belonged to a relatively local avenue in the area of the temple, but it is now evident that this first part to be discovered must have belonged to the major street. Its position and direction align with the portions found later to the north-east, and the constructional details are similar to those observed in the upper-level of the street at the location noted at (1), above.

In between these locations there are surface indications in the form of differential drying patterns and traces of powdered red brick, which support the view that all the excavated portions are linked by further remains which still lie under the surface dust. Some parts of the street have no doubt been completely destroyed by later building activity or ground erosion, as, for example, in the area immediately in front of the Amun-Temple, where the level of the ground has been greatly reduced.
Commentary on each of the locations listed above

1. The North-East sector

A description of the street in this area has been published by Jeffrey Spencer in N. Crummy (ed.), *Image, Craft and the Classical World. Essays in honour of Donald Bailey and Catherine Johns* (Monogr. Instrumentum 29), Montagnac 2005, p. 233-241 (hereinafter referred to as Spencer 2005). This article provided an overall description of the two levels of street remains found in 2003, together with an adjacent Roman house or administrative building. Some of the photographs which appeared in that report are reproduced here in colour, with others which show additional details.

Some of the best-preserved paving-slabs of the upper-level of the street were found above the position of the north-east gate in the Inner Enclosure Wall (Fig. 1-2). The plan in Figure 1-4 on the following page shows the relationship between this area of pavement, the twenty-sixth-dynasty wall and the adjacent Roman building. The mode of construction, with thin, rectangular slabs set in pink plaster over a bedding layer of crushed red brick, is identical to that of the pavement above the Amun-Temple, found in 1991. The pink plaster can be seen clearly in the photograph in the gaps where the limestone slabs are missing. The direction of the street in this picture is from left to right, the same as the alignment of the scale. The pavement had suffered from subsidence, which is not surprising in view of the various fills from older constructions below it. Similar subsidence was a feature of the street where it passed over the ruins of the temple of Amun. A deep test-pit behind the street in the north-east sector was made to investigate the underlying stratigraphy; at a depth some 2m below the street pavement a surviving block from the sill of the twenty-sixth-dynasty gate was found, bedded on sand. A considerable extent of plaster was exposed further to the south-west (left of the photograph in Fig. 1-2), illustrated in Figure 1-3. The area exhibits well-preserved plaster bedding, with only fragments of limestone paving-slabs, although the imprint of the positions of the original slabs is visible in the plaster. At either side of the street are remains of fired-brick kerbs, the more easterly of which is illustrated more clearly in Figure 1-5, below. In front of the brick kerb in the foreground are limestone slabs of the older Level 2 paving, which run under the kerb and the plaster bed of Level 1. This lower-level pavement, formed of heavier and less regular slabs than those of Level 1, is illustrated in more detail in Figure 1-6. The poorly-preserved brick plinth visible in the same illustration is the only example of these podia actually found by excavation on the south-east side of the street, not only in the area around the gate but in any part of the street so far revealed. Magnetometer scanning carried out in 2006 has, however, revealed the presence of at least two more plinths on the south-east side of the street, with additional ones on
Fig 1-4: Plan showing the position of the street, the jambs of the twenty-sixth dynasty enclosure wall, and the Roman building. In places, the eroded top of the Saite wall rose to the same absolute level as the Roman remains. The small area of limestone paving from the earlier level of the Roman street, found about 8m north-east of the Level 1 components, was an isolated remnant, cut off on all sides by deeply-pitted ground. More substantial remains of the Level 2 pavement were found further to the north-east (see below).
the north-west apart from those already known. This evidence indicates that brick plinths existed originally on both sides of the street at regular intervals, but that many have been destroyed. The best-preserved plinth so far found in any area lies on the north-west side of the street in the sector around the gate in the Inner Enclosure Wall, and it has been described in a previous report (Spencer 2005). It is essentially complete, with only a small area of damage at the front (see Figs. 1-9, 1-10 and 1-11). The exterior surfaces were plastered, and this plaster connects with the Level 2 masonry seen around the plinth.

The brick kerbs on either side of the upper-level pavement, with which they belonged, had been extensively robbed for bricks following the abandonment of the street. The effect of this is very evident in the kerb at the north west, where the removal of bricks has left a stepped appearance at the end of a course (Fig. 1-7). The herringbone-style bonding of the bricks in the south eastern kerb is a typical Roman feature, although here it is poorly executed (Fig. 1-5). As noted in the previously-published report, these kerbs were lightweight structures, founded directly on the earth. The plan of the area on the opposite page shows another preserved part of the south-eastern kerb, some four metres along the street towards the south-west from the area shown in Figure 1-5.
Fig 1-8: Plan of the street remains in the area around the gate in the Inner Enclosure Wall. At the top right is part of the jamb of the twenty-sixth dynasty wall, next to which is the deep stratigraphic probe-trench with the block of the sill of the gate. The key shows the attribution of the different elements to the individual levels. The well-preserved brick plinth on the left is matched by a partly-destroyed example on the right.
Fig 1-9: The brick plinth on the north-west side of the street, viewed from the street side. The association of the plinth with the Level 2 limestone masonry around it shows that the plinths belonged to the earlier phase of the street, and have no connection with the brick kerbs of Level 1, one of which is visible in the foreground.

Fig 1-10: The same plinth as in Figure 1-8, from the opposite (north-west) end. This is the most complete plinth so far encountered, with a remaining height of 40cm, but the full original height is unknown.

Fig 1-11: The same plinth from the south-west side.
The decision to construct the street directly above the earlier processional avenue from the entrance of the sacred enclosure to the temple of Amun was no doubt influenced by practical considerations. This axis would have been a natural line of communication which had remained free of obstructions and, therefore, the most convenient choice for the location of a street. The chosen line inevitably means that the street passes immediately over the former position of the twenty-sixth dynasty gate in the Inner Enclosure Wall, and the remains of the wall itself at each side of the street still stand to the Roman period level. This places the present top of the twenty-sixth dynasty brickwork level with the walls of the Roman house or administrative building which was excavated in 2003, adjacent to both the older wall and to the street. The view in Figure 1-12 shows the close proximity between these different elements.

All parts of the street excavated at Level 1 in the north-eastern sector were constructed in similar fashion, with carefully-manufactured rectangular paving slabs of white limestone laid on pink plaster, under which was the foundation of crushed red brick. Below the latter was earth fill interspersed by bands of limestone debris, as illustrated by the section in Figure 1-13. Tests along the line of the street in a south westerly direction revealed some additional patches of the red brick bedding layer, but greatly broken up by later pitting. The red brick reappears after a distance of around 140m, in the area described below as the central sector of the street.

**Fig 1-12:** View over the remains of the street towards the Roman building. This was constructed partly overlying the outer face of the twenty-sixth dynasty enclosure wall. The cleaned triangular area behind the deep test-trench is entirely occupied by brickwork of this wall. The south-east side of the Roman building lay alongside the street. The whole structure has been reduced to floor level. The deep cut (in the shadow beyond the far edge of the street) is the test-excavation to the level of the twenty-sixth dynasty sill of the gate.

**Fig 1-13:** Bedding of the upper-level pavement of the street, showing a substratum of earth with layers of compacted limestone chips, overlaid by crushed red-brick. At the top is some of the pink plaster bedding for the pavement. Additional excavation at the sides of the upper level remains revealed the blocks belonging to the lower level pavement, since the older street had been of greater width than the one which replaced it. The presence of both levels in the same area provided good information on the stratigraphy, because this layer of fill between the two levels could be observed. At some points the level of the latest pavement had been adjusted by the deliberate dumping of broken pottery in hollows to level the ground.
The western jamb of the Inner Enclosure Wall exhibited a clear wide join running along one or two brick-lengths from the edge, and parallel to it. This is visible in Figure 1-14, above. It almost certainly is the result of brick infilling between the end of the wall and the stone masonry of the original gate. In the upper level in the location of the gate, there remained only redeposited fill containing chips of stone, but some remains of the sill of the gate were found at deeper level (Figure 1-20). The alignment of the twenty-sixth dynasty jamb was followed in the orientation of the Roman building, the south-east wall of which continued directly from the exterior face of the earlier enclosure wall. The separation between the pharaonic wall and the Roman one was evident because the latter was much less deeply founded. The rough stone step at the side of the Roman building lay outside a door through the south-east wall, with the step providing access down to the level of the street (Fig. 1-15a-b). Details of this Roman building and of the pottery associated with it have been published previously (Spencer 2005). Overviews of the building are shown in Figures 1-16 and 1-17 and a plan is included in Figure 1-4, above.

**Fig 1-14:** Looking along the jamb of the twenty-sixth dynasty gate to the south-east side of the Roman building. The outer face of the pharaonic wall lies approximately at the point marked by the ranging pole. Beyond this there is a rough stone step, formed from a few blocks of limestone, at the side of the Roman structure. This is shown in more detail in the closer view in Figure 1-15, below.

**Fig 1-15a-b:** The step from the Roman building to the street, in a long view on the left, with a detail on the right showing the doorway.
Fig 1-16: View over the Roman building from the west, showing the low level of the mud-brick walls. The construction was all in unfired brick.

Fig 1-17: View of the Roman building from the north-east, showing the door in the wall in the foreground. The area immediately inside this door was paved with mud-brick (see Figure 1-18).

Fig 1-18: The small area of brick paving inside the entrance door in the north-east wall of the Roman building, viewed from the south east, with the door on the right of the picture. The bricks of the floor measured 23 x 11.5 x 6cm. The pavement was just a single course of bricks in thickness and arranged with three rows of headers flanked on each side by a single line of stretchers. This careful arrangement just inside the door suggests that the brickwork was limited to an interior doorstep, the remainder of the room being left unpaved, apart from some bricks against the footing of the north-west wall, and part of the south-east wall. The latter bricks are visible in the foreground of this figure.
The stratigraphy below the street in the axis of
the twenty-sixth dynasty gate was tested in a deep
probe-trench (see the plans in Figures 1-4 and 1-
8 for the location). Strata revealed in this test-pit
showed the earlier paved pathways which had
preceded construction of the Roman street. Below
the latest level of the street are three earlier levels
of paving: the upper one is the earlier Roman
level, below it is a thin layer of limestone which
is in a Ptolemaic stratum, and the heavier stones
some 60cm deeper belong to the temple approach
of the thirtieth dynasty. This latter pavement was
bedded on black mud, a feature noted where other
portions of this same pathway were encountered
in the 1994 season (Spencer 1996, 69-70). At
the bottom of this stratigraphic trial-pit lay a
deep bed of greenish coloured sand belonging to
the original twenty-sixth dynasty foundation of
the stone gate in the Inner Enclosure Wall. No
masonry survived at the south-east side below
the stratigraphic sequence shown in Figure 1-19,
but at the north-east there was a single remaining
block of limestone lying directly on the sand-bed.
This block lay at a depth of a little over two metres
below the upper level of the Roman street, and
it had been split into two pieces, presumably as
a prelude to quarrying (Fig. 1-20). The larger of
these pieces was 84cm wide and 55cm thick. The
many fragments of good-quality limestone found
in the fill suggest that there had once been fine
limestone casing over the brick jambs at either
side of the gate. Note the descending tip-lines in
the section above the block, the result of pitting
for stone-removal.

The investigation of the gate also involved
the clearance of the easterly jamb, which was
found to be less well preserved than its western
counterpart. A large pit of Roman date had cut
away the front angle, although the remainder of
the jamb had survived as far as its original edge
(Fig. 1-21a-b). The pit contained a few Roman
sherd and fragments of fired bricks, including
one of quadrant shape, 8cm thick, with a radius
of 28.5cm. The width of the gate between the
brick jambs was 12.96m. The brickwork of the
Inner Enclosure Wall further back from the edges
of the gate was well preserved, as revealed by the
previous excavations in 1994 (Spencer 1996, 30-1
and colourplate 1).
**Fig 1-21a:** The south-east jamb of the Inner Enclosure Wall at the gate. The brickwork continues under the fill at the top of the photograph; only the front part was excavated.

**Fig 1-21b:** The same jamb from the south-west. The ranging-pole marks the original position of the front corner of the jamb, destroyed by pitting in the Roman period.

**Fig 1-22:** Fragmentary glazed composition Harpocrates figure found in the fill within the Roman building. A monochrome image of his object is included in Spencer 2005, but this colour illustration shows how the original bright blue-green glaze has decayed to off-white.

**Fig 1-23:** Coins found in the fill around the Roman building. Bronze diobol (a) from the mint of Alexandria, dated to Year 4 of Vespasian (71/2 AD), from fill above the outer east wall. The second coin (b), from fill inside Room 1, is in bad condition but is probably also a diobol of Vespasian. These coins must be residual, since the building is certainly of considerably later date. (Identifications by Richard Abdy).
Fig 1-24: A small patch of Level 2 pavement in the area of the gate in the Inner Enclosure Wall. The location of this surviving remnant is shown on the plan in Figure 1-4. Quarrying of the limestone monuments had been severe in this region, probably because the remains of the upper level of the street remained visible at the ground surface and encouraged digging into the area. The better-preserved pavement of Level 2 further to the north-east survived owing to the deep overlay of mud which had accumulated rapidly above it, as shown in the figure below.

Fig 1-25: The pavement of the street at Level 2, in an area situated 38 m north-east of the remains around the gate of the Inner Enclosure Wall. There were no traces of the upper level of the street in this area and the Level 2 pavement was buried under accumulated mud which had run down from the adjacent high settlement mounds. The nature of the paving is different from that of Level 1, with irregular, heavy blocks rather than neat rectangular slabs. This view was taken across the full width of the street at this level (6.2m), they continue on the axis of the street (parallel to the direction of the scale) below the section to the left (south-west direction) but have been robbed out on the right side.
**Fig 1-26:** A narrow trench cut along the north-west edge of the Level 2 street to investigate the extent of its preservation. The pavement in the photograph is the continuation to the south west of the far edge of the pavement shown in Figure 1-25 (continuing to the left of that picture). It is quite possible that the full width of the street may be preserved over the distance shown here (16 m), but to remove all of the overlying fill would have been a massive undertaking, and would have placed the limestone at risk. In the paving shown here, a simple soak-away drain was found, formed of an amphora-neck set below the pavement (Figure 1-27, below). At the far end of the view, this fine stretch of pavement ended owing to the slabs having been robbed out in the disturbed area closer to the gate of the temple enclosure.

**Fig 1-27:** The drain set into the pavement, after the removal of some small pieces of limestone to show the amphora-neck. No kind of rubble soak-away had been provided below the neck; the ground consisted of empty mud, so the drain is unlikely to have been very efficient.

**Fig 1-28:** The amphora-neck from the drain. This shape is from a Roman transport amphora (Hermopolite Type A) of local clay, probably dating from the 2ndC AD. (See the comments on dating and parallels in the article Spencer 2005).

**Fig 1-29:** Coins found above the Roman street. (a) small bronze of Arsinoites, dating from Year 11 of Hadrian, found just above the Level 2 pavement close to the drain. (b) a silvered bronze nummus minted between AD 348-60, from the high-level surface fill. (Identifications by Richard Abdy).
2. The central sector

A central portion of the street, approximately halfway between the remains discovered near the gate of the Inner Enclosure Wall and the Temple of Amun, was excavated in the 2004 season to the north-west of Temple B. The distance from the gate of the Inner Enclosure Wall is some 140 metres. Working on the produced line of the street, a strip of ground 22 metres in length and nearly 10 metres wide was chosen for testing, and the surface dust, which in this area was very dry and powdery, was easily removed. This test for the continuation of the street was immediately successful, broken limestone and red-brick dust being found at a high level just under the ground surface, together with remains of four red-brick plinths on the west of the street.

Several kerbstones of the Level 2 street survived in position at either side of the street, the majority being of limestone but with a few sandstone pieces. On the north-western side a length of 6 metres of kerb was preserved, but on the south-east the kerbstones extended for 12.5 metres, broken by two small gaps where blocks had been removed. The width of the street as revealed by the presence of these kerbstones was 4.8 m, which is less than its 6.2 m width near the gate of the Inner Enclosure. The stones of the kerbs were set deeper into the ground than the pavement which had once occupied the space between them, which was probably the reason why some of the kerbstones had survived in place. Nearly all of the thinner paving-slabs had been removed in antiquity, to leave only fragments and chips of limestone broken from their lower surfaces as evidence of their former positions. All this masonry belonged to the earlier level of construction of the street, which in the previous season had been dated to the second century AD. Above these remains was a large quantity of red powder from crushed fired brick belonging to the foundation layer of the upper level, although the depth between the two phases was much less in this area than it had been in the area excavated in the previous season. This is not surprising, as the rate of ground-level rise in the central area is much less than is the case near the high mounds at the entrance to the enclosure. The position of the later level of the street was found to be slightly further west than that of the preceding one, so that the upper level apparently passed over the cut-down remains of the brick plinths. This confirms the conclusion reached last year that these structures had belonged

![Fig 1-30: View across the central section of the street from the west.](image)


**Fig 1-31: Plan of the street remains in the central sector, showing the remaining kerbstones and disposition of the brick plinths.**
Fig 1-32: View looking north-east along the street towards the gate of the Inner Enclosure, with the Amun-Temple behind the camera. The area between the kerbs was covered by patches of broken limestone and a few larger pieces, the remnants of the vanished pavement of the older street level. Above this, especially at the north-east end of the excavation, was the red-brick dust used as bedding for the replacement paving of the higher level. Approximately 50m beyond the limit of this work and on the same line is the site of the excavation of ‘Location 2’ of the 1994 season (Spencer 1996, 67-70). The remains found in the upper level of that work included a strip of fired brick and an adjacent area of brick dust. In the context provided by the discovery of the street, it is now evident that these features almost certainly belonged to a brick kerb and some of the upper-level bedding layer of the street. Deeper in ‘Location 2’ were parts of the thirtieth-dynasty paved way to the Amun-Temple, bedded on black mud, just as this also lay under the Roman street at the gate of the Inner Enclosure.

Fig 1-33: View along the excavation of the central section of the street, looking towards the site of the Amun-Temple, which is marked by pale mounds of debris. Note the red-brick powder from the substratum of the upper level of the street, in the foreground. Beyond are the limestone fragments left from the lower level pavement, with the brick plinths on the right.

Fig 1-34: View from the west showing two of the brick plinths beside the street (no. 1 at the back, no. 2 in the foreground). Since the upper level of the street passed over at least the front part of these older plinths, the brickwork would have had to have been levelled. One of the plinths found in the north-east sector near the gate of the Inner Enclosure had not been overbuilt although the brickwork had been robbed, so the original height of these plinths remains uncertain. The maximum surviving height of the plinth at the north east was 40cm (see above, Figures 1-9 to 1-11).
Fig 1-35: Brick plinth no. 1, viewed from the street side. This was the best-preserved of the four plinths found in the central sector. At the front right side a piece of limestone has been included in the masonry, and some other small pieces are embedded in the ground in front of the front left corner. The centre has been cut from the north east by a pit. Behind this, the rear edge of the plinth exhibits well-laid bricks in lime mortar, with remains of the original plaster coat. A search 6m to the north-east of this plinth was made in an attempt to locate the next one in the sequence, beyond the area of the main excavation, but the area was found to have been pitted and there were no remaining traces of a plinth.

Fig 1-36: Brick plinth no. 2, as seen from the street. This example was found to have been considerably damaged, most of the core having been removed to leave only a few bricks and plaster traces around the edges. The original location of the plinth in the areas of missing brickwork was clear from soil colour differences.

Fig 1-37: Brick plinth no. 3 viewed over the kerb of the street. Some of the masonry between the edge of the street and the plinth remains here, and it seems that there was originally paving at the sides of the earlier street level extending up to and around the plinths. This is the situation in the north-east sector, where much of the limestone masonry remains all around one plinth (above, Figures 1-10 to 1-11).

Fig 1-38: Side-view of the front edge of brick plinth no. 3 from the south-west, showing the remaining limestone masonry between the kerb and the plinth. The front edge of this plinth is formed of a row of bricks on edge, laid as headers.
3. Above the ruins of the Amun-Temple

A well-preserved area of pavement was found in the first season of work by the British Museum at Tell el-Balamun in 1991 and was considered to be a local construction, but it is now evident that this pavement lies on the produced axis of the Roman street and was almost certainly a part of it (Fig. 1-39). The construction of the pavement and of its foundations are virtually identical to the techniques seen in the upper-level of the street in the north-eastern sector, with thin rectangular paving-slabs of limestone laid on a bed of pink plaster and crushed red brick. Where paving-slabs had been removed, their outlines were preserved in the pink plaster bedding. The pavement above the Amun-Temple lies over the Saite foundation for the western colonnade in front of the pylon of Sheshonq III, and some re-used temple masonry was employed by the builders of the street below their fired brick, resting on the older sand-bed (Fig. 1-41). A description of the pavement in the temple has been published in an earlier volume (Spencer 1996, 41-2 and pls.16-18), but some additional colour photographs are presented here to illustrate more clearly the different constructional materials.

The pavement in this area was preserved over a length of 16 metres. For the majority of this distance only about three metres’ width of the street remained intact, but at the south-west end of the excavated area the pavement was present over a width in excess of six metres. This part had been subject to considerable subsidence owing to the sand in the older temple foundations below being undermined by animal burrows (Fig. 1-40).
2. The Subsidiary Temple of Nekhtnebef at Tell el-Balamun (Temple B)

In spite of the extensive building programme of the thirtieth dynasty, the documented temples fail to reflect adequately the extensive resources expended at this period on the redevelopment of religious sanctuaries (see the list in Niederberger 1999). There are several reasons why this is so. Many temples have fallen victim to stone quarrying, not only in the Delta where much of the building programme was concentrated, but also in Upper Egyptian urban centres such as Ashmunein, Abydos and Koptos. Elsewhere, thirtieth-dynasty structures often consist of added elements within an older sanctuary, which fail to attract the attention engendered by an entirely new monument, despite the fact that some of these additions in themselves constituted an outlay of resources greater than that needed for the construction of many a complete temple. Where thirtieth-dynasty temples were constructed, the demands of the building programme seem to have been such that their decoration sometimes remained to be completed by later rulers, as at Ashmunein, where the Thoth-temple founded by Nekhtnebef was inscribed under Philip Arrhidaeus. (Spencer 1989, 71-3; Bailey, Davies and Spencer 1982, 4; Bailey and Snape 1988, passim). It is probable that some temples regarded as belonging to the Ptolemaic Period on the grounds of their decoration may have been initiated during the thirtieth dynasty. This collection of circumstances has left a lack of well-preserved material for the study of thirtieth-dynasty temples, as a stage in the evolution of Egyptian religious architecture. The description of a temple of Nekhtnebef at Tell el-Balamun which follows is a contribution to filling this gap, since in spite of its destroyed condition, it is one of the few which has been excavated in sufficient detail to permit some analysis of its construction and probable design. A detailed assessment of the temple of Khnum at Elephantine has already provided a welcome example of the wealth of information which can be revealed through careful study of the surviving monuments (Niederberger 1999).

The subsidiary temple of Nekhtnebef at Tell el-Balamun (Temple B) was one element of a major thirtieth-dynasty refurbishment of the temple complex, which also included rebuilding the main temple of Amun and its processional approach, adding what was very likely a Mammisi and surrounding the whole sacred area with a new brick enclosure wall. (Spencer 1996, 1999, 2003). As a self-contained individual monument, the subsidiary temple, which was established in the traditional location of a barque-station dependent on the temple of Amun, is the most suitable element in the complex for the study of original thirtieth-dynasty architecture. Information about this temple was gathered during the excavation seasons of 1992, 2001 and 2004 and is sufficient to establish not simply the dimensions and date of the building, but also some idea of its appearance. Although intended as a barque-station subordinate to the main temple of the site, the subsidiary temple was actually a very substantial monument. The nominal width of the pronaos foundation is 44.5 metres. The size of pronaos which could be built on this foundation would be slightly narrower, to allow for the inevitable construction gaps at each end, but even allowing a generous interval of a metre on each side, the width of the pronaos would still amount to about 42.5m. This dimension is almost equal to the width of the pronaos of the Ptolemaic temple of Dendera (43m) and exceeds that of the pronaos at Edfu (40m), although those examples possess greater depth. Obtaining reliable and accurate measurements for Egyptian monuments is still problematic. Some of the recorded dimensions differ from each other and in many cases the only sources available are very old publications. The size of the Dendera pronaos, for example, is given variously as 42.6 x 26m (Arnold 2003, 180); 43 x 26m (Cauville 1990a, 29) and 42.49 x 24.8m (Mariette 1870, pl.2). The proportions of the pronaos of Nekhtnebef at Balamun are discussed further below.

In common with almost all temples of the later dynasties, the foundation of the temple consisted of an enormous pit which reflected the full size and shape of the monument to be built above. This foundation method, driven more by ritual considerations than practicality, produced a depth of foundation which was far greater than that actually
needed. Temples of the New Kingdom were built with much less elaborate substructures but have, nevertheless, often survived in good condition. The total depth of the thirtieth-dynasty foundation pit is not known and remains inaccessible, since it descends well below the modern water-table. According to ancient ritual requirements recorded in the Edfu texts (Rochmonteix 1892, 23, 4-5), the builders were supposed to excavate the foundation down to the water table, which in antiquity would have been far lower that its present-day level. The measurable depth of the surviving foundation from the highest point on the edge of the pit at the present surface to the maximum depth attained in the subsoil water was 2.60m. Given that the area of the foundation is 1,712 square metres, even this depth would constitute a volume of 4,451 cubic metres, all of which was filled originally with clean sand as the ‘pure medium’ for the basis of the temple. Much of this sand remains in place, although the present level of its upper surface varies from place to place depending on the extent to which it has been removed by later pitting. Originally, it rose to the level of the top of the foundation, which has itself been degraded by erosion. The sides of the pit were lined all around with a retaining wall of black mud bricks; the highest part of this lining lies at the outer end of the north-east wing of the pronaos where it attains a relative level of 221cm over datum, but more typical levels around the perimeter fall between 140 and 180cm. The bricks in all parts of the foundation were in the size range 38-41 x 19-20 x 12-14cm. The earth extracted in the original cutting of foundations of this kind would have provided material for the creation of the earth embankments used to raise masonry during construction, but subsequently must have been removed from the site.

The level of the top of the foundation must once have been equal on all sides to present a flat construction site for the temple platform, but the contours of the surrounding ground have created a pattern of erosion which has imparted a slope to the area, descending towards the south west. Surface pitting has done more damage than erosion. The majority of the pits seem to date from Late Roman times when all the temple sites at Balamun were used as stone-quarries, but there are also some deep holes of vaguely rectangular shape which have the appearance of early, unsystematic excavation trenches. One of these lies in the centre of the pronaos and another at the front of the temple. Nearby to the south are some substantial dumps which could well have come from these trenches, but there is no record of when and by whom this work was done. The dumps are visible on the photographs of the site taken by Howard Carter in 1913, kept at the Griffith Institute, Oxford (Malek 1985, 181-5), but were not created during his work, and so may date from the late nineteenth century. The effect of all the pits and trenches on the site of the temple has been to replace the upper part of the sand-bed with a mixture of stone rubble and mud.

The shape of the foundation of the temple is illustrated in Plan 2-1 opposite, with a suggested reconstruction of the monument overlaid upon it. The latter is discussed below, but the foundation exhibits three basic components: a large rectangular naos area of 24.70 x 43.50m at the back, the wider section for the pronaos and a smaller rectangle in front for the gate and courtyard. The presence of the latter element, only discovered in 2004, helps considerably in understanding the design of the temple. Beyond the edges of this part of the foundation are two narrow sand-filled trenches, one on either side, which had been found in 1992 and considered at that time to be all that existed of building evidence in front of the pronaos. The fact that part of the main foundation-pit extended between these trenches shows that there was more substantial construction at the front of the temple than previously thought. The three sections of the foundation listed above will now be considered individually.

The Naos Area

The limits of this area were first investigated in 1992 when the size of the rectangular space was defined as being 24.7 x 43.5m. (Spencer 1996, 43). The foundation was not physically subdivided; the sand bed ran continuously from the naos area through the pronaos to the front. Below the disturbed upper level, which contained evidence of Roman activity, clean sand was found to remain in place at various depths. The date of the temple was established by the recovery of two foundation-deposits, both disturbed to some extent by Roman pitting, from the sand in the rear angles of the naos. These have been fully published elsewhere, (Spencer 1996, 43, 84 and pl. 90), but the dating evidence came solely from the eastern corner in the form of two faience plaques inscribed
Plan 2-1: The outline of the foundation superimposed by a reconstructed plan of the temple.
with the prenomen and nomen of Nekhtnebef. The objects in the deposits lay between relative levels 102 and 70. In all the corners of the pronaos, and also in the foundation at the front of the temple, the undisturbed sand did not survive this high, which might explain the absence of any additional deposits at these locations.

Originally, the sand-bed provided a level surface for the laying of the stone blocks which constituted the temple platform, here in the naos and also in the other sections towards the front of the building. A few blocks of stone were found lying displaced above the sand at the rear east corner, two of limestone and one of basalt, and no doubt there are numerous others scattered within the unexcavated parts of the naos area. The destruction of the temple platform has removed one of the main sources of evidence concerning the positions of the walls and columns within the temple, as these would have been indicated by mason’s setting-out marks on the top course of the platform. So far as the design of the rear part of the temple is concerned, it may be assumed that there would have been a central sanctuary, probably containing a monolithic naos. Part of a block of quartzite was noted near the axis which might have come from a plinth below the naos.

**The Pronaos**

The edges of the pronaos were identified in 1992, primarily through work on the north-eastern side, while tracing the opposite half only from surface traces (Spencer 1996, 44). Excavation of the south-west side in 1999 confirmed the dimensions to be similar on each side (Spencer 2003, 32). Finally, in 2004 some additional work was done at the north-east, re-checking the front corner and excavating beside the inner angle where the foundation turns towards the front of the temple. The re-excavation of the front outer corner of the north-east wing in 2004 allowed the foundation sand to be checked for a possible foundation deposit at greater depth than achieved in the cursory excavation of 1992, but nothing was found. The clean sand was encountered at a relative level of 69, contained by exceptionally fine brick lining of the adjacent retaining-walls (Fig. 2-1). The excavation in 1999 of the angles at the outer end of the opposite wing of the pronaos had likewise proved negative in the search for foundation deposits, probably, as mentioned above, because of the removal of the upper part of the sand through ancient pitting.

The distance from the front to the back of the pronaos foundation in this temple is quite shallow, measuring only around 8.5m across the ends.

*Fig 2-1: Brick revetting at the front outer corner of the north-east side of the pronaos.*
Although the central portion of each wing widens to about 9.5m, the size of the structure which could be built on the foundation is determined by the minimum dimension. Given that any foundation pit is generally somewhat wider than the building it supported, the external depth of the stone structure of the pronaos cannot have exceeded eight metres, and was probably more in the region of 7.5m. Once the thickness of the stone walls at front and back is taken into account, the interior space must have been quite limited, certainly sufficient for no more than a single row of columns in addition to a façade row of engaged columns. The width of the pronaos would suggest that three columns could be accommodated on either side of the axis, as is most common in the preserved pronaoi of other temples. At the angles where the foundation of each side of the pronaos met the foundation of the naos area and of the portico, the brick lining had been carefully assembled to create good approximate right-angles. The continuous nature of the brick lining emphasised the unity of the foundation as a single construction project. Close to the angle between the inner end of the north-east wing of the pronaos and the front section of the foundation lay two large pieces of masonry, one of limestone and the other of basalt (Fig. 2-2). Although both had been disturbed, it seemed probable that they had not been moved far from their original locations. They lay on the remaining sand of the foundation, enveloped in redeposited pit-fill, immediately in front of the former position of the facade of the pronaos, as if thrown down during quarrying and then abandoned. The limestone block consisted of a slab, 212cm long and 85cm high, with a thickness of 50cm. The basalt block was more readily identifiable as part of the upper section from one jamb of the doorway of the pronaos, cut to include a short split lintel (Fig. 2-3). The dressing of the block was unfinished, with a quantity of excess stone remaining below the right-angle where the lintel was to be created. The angle to be cut had been marked out on the faces but never dressed back along the thickness. In the base of the

Fig 2-2: Limestone slab and basalt block at the inner front corner of the north-east side of the pronaos.

Fig 2-3: The unfinished basalt block from the upper part of the doorjamb of the pronaos.

Fig 2-4: Copper staining in the dovetail cramp-slot at the base of the basalt block.
block a dovetail-cramp slot, stained with bronze corrosion, showed that this end had been joined to a lower course of the doorpost (Fig. 2-4). The joined surface also bore an area of roughened stone measuring 38 x 32cm to form a key for mortar. The existence of this block shows that the central door of the pronaos, set between the innermost pair of columns of the facade, conformed to the type which became standard in Ptolemaic temples, with a split lintel at a level equal to approximately two-thirds of the height of the columns. The presence of bronze staining at the join shows that the block really was once linked to a lower one, suggesting that the doorway was actually built, but the lack of final dressing and of inscriptions shows that the temple remained incomplete. Since surface dressing was regularly done after construction, this is not surprising. The block was 98cm high and measured 46 x 52cm at its base, with the overhanging split lintel designed to project 18cm beyond the vertical face of the doorjamb.

**The front part of the foundation**

As mentioned above, the existence of this part of the temple substructure was unknown until 2004. It presents an unusual feature in that it is not simply a rectangular area full of sand, but contains a separate sub-foundation in its centre, the purpose of which is not entirely clear. During excavation, the south-west retaining wall of the foundation was the first to be identified, then traced from its corner with the pronaos until the front limit of the foundation was reached, a distance of 18.3m. The front retaining wall and parts of the north-east side were then revealed, except for the central part of the latter which had been cut by a large pit. The excavated areas were sufficient to determine the full shape of this part of the foundation, as illustrated in Plan 2-2. Lying in the sand in the middle of the foundation, just 8cm from the inner face of the front brick revetting, were two mud bricks (Fig. 2-5), which were found to be precisely on the axis of the temple. They were presumably a temporary marker used by the builders as a reference point during construction. These bricks consisted of exactly the same dark clay as those of the lining-walls and they measured 40 x 19 x 14cm. The sand in which they lay was clean of other inclusions right across the front part of the foundation (Fig. 2-6), but a search deep into the subsoil water in both the front corners for deposits proved negative (Fig. 2-7).

Above the level of the remaining sand within

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*Fig 2-5: Mud-brick axis-marker in the sand at the front of the foundation. The half-brick on the right appears to have been surplus to requirements and discarded. The dark fill at the bottom left is contained in the base of a pit which has cut into the sand-bed.*

*Fig 2-6: View across the front of the foundation, showing the sand within the retaining wall.*
the foundation the many pits of Roman and later age, created during the quarrying of the temple masonry, were clearly evident. Remains of this activity were present in the form of heaps of limestone chips and some larger blocks of limestone, lying in a confused scatter as left by the quarrymen (Fig. 2-8). One of these blocks was found to be decorated on one surface with part of a scene and hieroglyphic inscription, cut in sunk relief (Fig. 2-9). On the left there had been a relief of a seated god holding a was-sceptre, probably Amun to judge from the epithets in the text, but only part of the knee and arm of the figure had survived. Above the figure are the lower ends of four vertical columns of hieroglyphs, the first of which (on the right) concluded with the epithet of Amun, ‘Lord of the Thrones of the Two Lands.’ The remaining columns are difficult to interpret owing to their fragmentary state, but seem to contain parts of the names of divinities. The signs in the first column, with a seated figure determinative, seem to stand for a divine name, ‘Pehty’, rather than an epithet. The next line contains a writing of the name of Sekhmet, and the effaced signs in the final line may be part of the name of Nefertem.

To the right is a vertical column of hieroglyphs
running the full height of the block, reading: ‘[....] jars of water. Recitation: “twofold purification for Amun-Ra, Lord of the Thrones of the Two Lands...”’. The same text also occurs in the first of two columns on the lower right portion of the block, whilst the second column reads: ‘Offerings for the Lord of records’ (an epithet of the god Thoth). Above these two short texts is a panel containing, on the left side, repeated occurrences of the phrase, ‘all purification’, followed by a Thoth-ibis on a standard. It is not clear whether the latter sign stands for the god Thoth or the Lower Egyptian Hermopolite nome, although the lack of a place-name determinative suggests that the god is intended. The opposite side of this panel probably possessed a similar text, but ending with a hieroglyph of a falcon with extended wings above a sign reading ‘island of Amun’. If the falcon is
being used as a late writing for the definite article, then this would be a writing of the name of the city, Paiuenamun. This block, together with many others lacking inscriptions, was found beside a wall of mud brick located about two metres to the south-west side of the axis of the temple (Fig. 2-10). Lying amongst the rubble was part of a pottery jar filled with hardened gypsum plaster, presumably a relic of the construction process abandoned by the ancient workers (Fig. 2-11).

The brick wall was later found to be one side of a rectangular sub-compartment along the axis, built in the middle of the main foundation-pit. Excavation showed this feature to be 13.6m long by 4.7m wide, with the width divided equally across the axis of the temple (see Plan 2-2). The thickness of the perimeter wall varied from 85cm on the south-west to 65cm at the north-east, all built of large black mud bricks of the same sizes as those which lined the main foundation. Fig. 2-12 shows the west corner of the brick rectangle. The south-eastern end of the feature had suffered considerably from the cutting of a deep robbers’ pit, which had removed much of the upper brickwork and subsequently been filled gradually with rain-washed mud. Fortunately,

Plan 2-2: Plan of the front part of the temple foundation, excavated in 2004, showing the central brick-cased element within the sand-bed.
some of the lower courses of bricks remained unscathed, with clean foundation sand in place against the exterior. There was evidence to show that the walls had been built in at least two stages, as the lower courses of bricks were not precisely aligned with those above. Evidence for this was noted at the west and east angles and also at the middle of the south-west wall. It would seem that the walls of this structure had been increased in height incrementally to match the level of the sand filling of the foundation. Although this sand filled the entire area of the foundation around the central brick rectangle, there was none inside it, where the original material seems instead to have been finely-crushed limestone. The purpose of this separate brick-cased foundation on the axis of the building is not clear. In the usual design of an Egyptian temple there was only a pathway along the axis at the front of the building, and it is difficult to explain why this should need an independent substructure when the pavement could just as well have been laid on the sand-filling of the main foundation. The only suggestion which seems possible is that there might have been a ramp approach to the door of the pronaos.

Outside the limits of the principal foundation lay the two narrow sand-filled trenches found in 1992. The inner edges of these lay ten metres from the axis of the temple, but the two trenches were not of equal width. The dimensions obtained in 1992 were reconfirmed in 2004, when portions of these trenches were again excavated to check their relationship to the new area of foundation discovered at the front of the temple. The two-metre width of the less well-preserved south-western trench as compared with a dimension of only 1.2 to 1.3m at the north-east shows that accuracy was not particularly significant for these foundations and all that was required was a serviceable wall-trench. Since any stone-built features laid on these trenches would almost certainly have been identical on either side of the temple axis, the thickness of the masonry would have been constrained by the lesser width at the north-east and so must have been no more than 1.2m wide, and probably less. The more generous width of the opposite foundation trench would simply have been surplus to requirements. As noted in 1992, (Spencer 1996, 45) the depth of the sand in these trenches was only 90cm, making them much shallower than the main foundation of the temple. The fact that these trenches doubled back on themselves at the front was already known, but

Fig 2-10: View along the southwest side of the brick-cased sub-foundation on the axis.

Fig 2-11: Fragmentary pottery jar full of set gypsum plaster, abandoned in the foundation.
a new detail brought to light in 2004 was that the ends of the return sections impinged directly on the lining of the front of the main foundation-pit. This effect was best preserved at the north-east side (Fig. 2-13), although sufficient traces of sand were observed at the south-west to confirm that both sides had been the same. This integration of the lightweight sand-trenches with the principal foundation shows that all the elements are part of a single design. Another new discovery was the fact that the sand-trenches did not extend right up to the front of the pronaos as originally thought, but ended three metres distant from it. If the sand-trenches mark the locations of vanished screen-walls, as suspected, then the existence of the gap suggests that there were openings through them beside the façade of the pronaos, possibly service entrances. This discovery necessitates a correction to the information and plan previously published, (Spencer 1996, 45 and pl.19), which indicated these trenches extended 21.55m from the face of the pronaos. In fact, this dimension is just the length of the trenches themselves and the three-metre gap is extra, so the true positions of the western or front ends of the trenches lie 3m further from the pronaos than suggested. The corrected configuration is shown in Plan 2-1.

Reconstruction of the temple

The information collected through the excavation of the temple permits some conclusions to be drawn over its layout. The close similarity between the probable width of the pronaos and that of the temple pronaos of Dendera indicates that the building was of significant size in spite of being subsidiary to the temple of Amun. The latter monument was some 150m long and was also rebuilt as part of Nekhtnebef’s ambitious building programme for Tell el-Balamun. The limited depth of the pronaos hall of the subsidiary temple, noted above, is typical of the thirtieth dynasty and early Ptolemaic period, before the development of much deeper halls with up to four rows of columns. Parallels for shallow pronaoi, with a one row of engaged columns at the facade and a single row in the interior, are recorded from Ashmunein and Elephantine. The Ptolemaic pronaos of the temple of Khnum at Elephantine was quite modest in scale, and measured externally 36.75 x 13.65m, which is equivalent...
to 70 x 26 cubits (Ricke 1960, 17-8, Plans 1 and 4). Niederberger (1999) gives the external width of the thirtieth-dynasty courtyard replaced by the Ptolemaic hall as 36.79m, calculated as 70 cubits and 2 palms with a cubit value of 52.308cm. The Ashmunein example, founded by Nekhtnebef and decorated under Philip Arrhidaeus, consisted of a particularly fine hall with papyrus-cluster columns, all destroyed before 1826 apart from some of the column bases. The width of this hall was particularly large, measuring 110 cubits according to the foundation-text of Nekhtnebef (Roeder 1952, 316-442, especially 375-426). This is equivalent to 57.75m, whilst the depth of the hall was only about 21m (40 cubits). The design of this pronaos has been studied by Dieter Arnold, who proposed a spacing between the column centres of 12 cubits, expanded to 12.5 cubits at the outermost rows, with a span of 15 cubits across the axis (Arnold 1994, 13-22). It is likely that the pronaos at Balamun was of similar proportions but smaller in scale. Assuming a pronaos some 42.5m in width, the spacing in cubits between the column centres might have exhibited the following sequence across the hall: 9.5 - 9 - 9 - 15 - 9 - 9 - 9.5. This has been used as a basis for the reconstructed design above (Plan 2-1), which is shown overlaid on the outline of the foundation. The slightly greater width of the outermost rows of columns not only produces the correct total figure for the width of the hall, but also matches the same feature in the suggested reconstruction of the Ashmunein pronaos. The pronaos of the temple of Dendera, as mentioned above, is of almost the same width to the inferred size of that at Tell el-Balamun and therefore provides an interesting comparison, in spite of its later date and different proportions. The external width of the Dendera pronaos is actually recorded in an inscription on the temple as 81 2/3 cubits (Cauville 1990b, 105-6, 111); in metric measurements it is 43m, which gives a cubit value of 0.526m. It is interesting that the ancient dimension is not a round number and it is not clear where the fraction was absorbed: possibly in the thicknesses of the side walls or the spacing of the outermost columns. The distance between the column centres running across the width of the hall, however, would seem to best suit a spacing of either 9 or 9 1/3 cubits, not dissimilar from the suggested layout for Tell el-Balamun. The possible size of the Balamun pronaos of Nekhtnebef is determined by the dimensions of the foundation, leaving little chance that the column spacing could have been other than the suggested figures. In spite of the complete destruction of the monument, the full study of the foundation has supplied the key to the interpretation of its design.
A discussion of the construction and design of the subsidiary temple of Nekhtnebef, particularly the complex substructure found at the front of the monument in the excavations of 2004, has already been published in the on-line journal, *British Museum Studies in Ancient Egypt and Sudan* (*BMSAES*), issue 4. A slightly revised copy of that description is included as the preceding chapter of this volume, since it provides the framework for understanding the more detailed points included in this supplementary account. Material covered in the previous description is not repeated here; instead, additional illustrations of archaeological details from the excavation are presented with extended descriptive captions. Taking advantage of digital format, these illustrations are all in colour, which is almost essential to the recording of archaeology on alluvial sites.

The site of excavation at the front of the temple was a relatively flat area, where work commenced in an area of 12 x 9 metres and was gradually extended as necessary to follow the various features discovered. The ground was remarkably empty of broken pottery or objects, apart from fragments of limestone from the destruction of the temple. The grassy area in the background in Figure 3-1 is the location of a large and undocumented early 20th century excavation, where traces of some broad sand-filled trenches were found in 2000 (Spencer 2003, 32-3). These were very shallow and may have been the substructure of some minor feature like a sphinx avenue. More recent work has shown that this area contains substantial ruins of a twenty-sixth dynasty barque station, buried deep below the thirtieth-dynasty level. These older remains are described in Chapters 5 to 8, below. The first part of the foundation at the front of the temple of Nekhtnebef to be excavated was the south-western side, the brick retaining-wall of which was preserved to quite a high level, although the upper courses had been considerably damaged. The wall which appeared was found to be connected at the south-east to the foundation wall of the temple pronaos. This means that the mud-brick lining around the entire perimeter of the temple foundation was continuous, the front part on which excavation was carried out in 2004 being an integral component of the whole substructure, of which the naos and pronaos portions had been studied in earlier seasons. The front of the foundation was a rectangular area projecting from the front of the pronaos, as illustrated by the plans in the previous chapter.

One part of the layout of the front of the temple had been found as long ago as 1992, when the first work on this monument by the British Museum was carried out (Spencer 1996, 43-5). At that time, two parallel sand-filled trenches were discovered extending in front of the pronaos, clearly the footings for fairly light walls flanking the approach to the pronaos. The distance between these walls was greater than the width of the main foundation-pit, but at their north-western limit they doubled back to meet the angles of the larger foundation. The lighter walls were evidently the outer limits of the
temple approach, with more substantial masonry centred on the deep foundation between them.

Continued excavation of the retaining-wall of the foundation revealed the full length of the south-west and north-west sides, the latter being the front. Parts of the north-east side were excavated later, but it had been deeply cut by later pits in the centre. The views of the south-west wall in Figures 3-2 and 3-3 above show how the thickness of the wall at the ground surface has been reduced to a single brick-width, apparently the consequence of an ancient trench being cut into the area. The brick at the base of the photograph in Figure 3-3 is actually part of the front retaining wall of the south-west pronaos foundation, and marks the right-angle between the pronaos front and the wall extending forwards. The trench visible at the top of the pictures marks the location of the front of the foundation, where the retaining-wall turns to the right. This front end of the foundation was also excavated and the sand-bed revealed along the interior of the brick lining. This work has been described in the previous chapter. The fill over the sand at the front was the same mixed assortment of mud and stone chips as noted over the south-west side of the foundation.

The north-east side of the foundation was excavated at the north corner, and the clearance then proceeded along the side towards the pronaos of the temple. The central part of this wall, however, was found to have been cut by a very deep pit, so this portion was not dug out fully and excavation transferred to the south-east end of the wall, closer to the front of the pronaos. Here the edge of the foundation was found to be preserved at a higher level (Fig. 3-5), and the excavation was continued into the space of the north-east wing of the pronaos to examine the connection between the lining-walls of this feature and the front part of the foundation. As on the south-west side, the brick revetting proved to have been constructed as a continuous structure through both areas (see the plan in the previous chapter). The work at the front of the pronaos, at its inner end close to the temple axis, revealed elements of stone masonry including what is probably part of a roofing slab of limestone, and a basalt block from the top of the door to the pronaos. These stones are visible in Figure 3-4, with the basalt block still embedded in the section. The photograph in Figure 3-6 shows the layers of redeposited fill in which this block had been dumped following ancient quarrying.
The deposit in the pit immediately above the block at the left of the photograph is relatively recent water-laid mud, so the block must have been partly uncovered when it was abandoned.

Excavation was also carried out along the axis of the temple, where an independent sub-foundation of rectangular shape was discovered. A description and plan of this appears in Chapter 2, above. The additional photographs in Figures 3-7 to 3-10 on page 40 show various stages in the unearthing this feature. In addition to a single inscribed block from the rubble along the side of this foundation (see Chapter 2), there was also a stone which had later been reworked to form an anchor, although it was unfinished (Fig. 3-14).

**Fig 3-4:** View into the foundation just in front of the position of the façade of the pronaos, north-east of the temple axis, showing the foundation sand. Lying on the sand is the limestone block, probably from the roof, with original worked surfaces on all but the top. The angular stone projecting from the section is the unfinished basalt element from the top of the doorpost of the pronaos, which was later cleared and recorded (see Chapter 2). At the base of the section at the back of the photograph is the north-east corner of the central mud-brick sub-foundation. A detail of this is shown in Figure 3-12.

**Fig 3-5:** The retaining-wall of the foundation on the north-east side looking south-east from the front towards the pronaos.

**Fig 3-6:** Profile of the excavation at the front of the pronaos, looking to the south-east, with the basalt doorpost-block still embedded in the section (it was later excavated). The sloping strata of redeposited fill over the foundation sand can be seen. They show how the basalt block was dumped back into this fill from the right side (south-west).
Figs 3-7, 3-8: Early stages in the excavation on the temple axis, where the separate sub-foundation, cased in mud-brick, was encountered. Figure 3-7, on the left, shows the first part of the brick wall of this structure to be found, buried in rubble and stone chips, with a pottery vase beside it. In Figure 3-8 the sand-bed has been reached outside the structure and the preserved level of the brickwork rises towards the north-west.

Figs 3-9, 3-10: Later stages in the excavation of the central sub-foundation. Figure 3-9 (left) shows the north-west end of the structure with many blocks of limestone piled against it, the result of quarrying in the temple. The damaged corner of the foundation box can be seen, where the upper brickwork on the exterior of the angle has been destroyed. Figure 3-10 (right) shows almost the full length of the south-west side of the foundation, viewed from the front of the pronaos.
Fig 3-11: The south-east angle of the central sub-foundation. The view was taken from the south-west side and shows the interior of the corner (with scale inside), extending under the baulk towards the opposite angle shown in Figure 3-12, below. Part of the thickness of the wall is covered by the fill on the right, but the wall at the front is clear and has foundation sand against it, in the shadow at the base of the picture. Above the interior of the sub-foundation was a mass of compact water-laid mud in an old pit, which descended to the top of the brickwork seen here. Below the mud, deeper inside the wall below the scale, was some limestone chip filling similar to that found in the opposite end of the foundation.

Fig 3-12: The north-east angle of the central sub-foundation was revealed in work at the front of the pronaos. The bricks of its construction were easy to distinguish, having been mortared only with sand in this part of the structure. The brick size was 38-40 x 19-20 x 12-14cm. The line of the end of the structure passed below the unexcavated baulk to meet the south-west corner, which was exposed in the excavations along the south-west side of the whole feature (see Figure 3-11, above). The base of the brickwork, as everywhere around the perimeter of this rectangular foundation, descended below the level of the subsoil water-table. The sand against the face of the brickwork surrounded the central sub-foundation on all sides and is the filling of the main foundation pit.
**Fig 3-13:** A view into the interior of the north-west corner of the central sub-foundation, showing how the lower brick courses are on a different alignment. In the horizontal joints between the courses at the point where the direction of the wall changed was a quantity of fine stone chips, suggesting that the foundation had been constructed in stages as the sand level within the main foundation was increased. The emptied portion of the foundation seen here had been filled with stone chips instead of the sand used outside. The limestone block visible in the background proved to be decorated, and it has been published already in Chapter 2, above.

**Fig 3-14:** The two sides of an unfinished stone anchor, cut from a re-used block. This was found amongst the rubble on the south-west side of the central foundation. The perforation has not been completed. The presence of such an object at the site is not surprising, given the ancient location of the city of Paiuenamun on a Nile branch estuary into the Mediterranean.
4. A Brick Temple of the Third Intermediate Period (Temple D)

Among the features revealed by the magnetic mapping of 2005 was a small temple, situated immediately west of the temple of Psamtik I and oriented facing to the north (Fig. 4-1). This area was investigated in 2006 in an attempt to discover the date of this new temple. Excavation was carried out at the front of the monument, where remains of one side of a brick pylon were found to the west of the temple axis. The pylon had been constructed of large mud bricks measuring 44 x 21 x 12 cm. The preserved distance from the west end of the pylon to the axis was 15.7 m, indicating a full width across the entire pylon of 31.4 m, equivalent to 60 ancient Egyptian cubits. Unfortunately, tests on the eastern side of the pylon failed to find any preserved remains, the area having been cut by deep pits of later date. In the axis of the pylon there had been a sand-filled foundation within a brick retaining-wall, to act as a substructure for a stone gate (Fig. 4-2). The bricks of this retaining wall were the same size as those of the pylon. Most of the sand and all of the stone had been removed by ancient quarrying, leaving only small chips of limestone. A similar scatter of stone fragments around the pylon may indicate that the brickwork had been originally covered by a limestone casing.

Fig 4-1: Magnetic scan showing the location of the brick temple (outlined in yellow). Note the destruction of the rear south-east side by the foundation of the temple of Psamtik I.

Fig 4-2: Looking north over the edge of the foundation of the gate in the pylon axis, with the earlier oven beyond. The bricks to the left of this are a buttress at the front of the pylon.
(Figs. 4-3, 4-4). The brick lining of the foundation-pit at the centre of the pylon was, like many temple foundations, quite irregular in shape, with the thickness of the brickwork at the front varying from 90cm at the west to 160cm at the east. The alignment of the inner edge of the brickwork was not at right-angles to the axis of the temple, but no doubt the stone masonry which originally stood above the foundation would have been built with greater precision.

In front of the temple pylon was an approach avenue flanked by a pair of screen-walls, the positions of which showed on the magnetic scan. Excavation revealed the sand-filled foundation trenches of the walls, of which the western one was the better preserved, with a width of 2.42 metres. The depth of sand in these trenches was not great, extending to just 70cm below the ground surface. Only the ends of the trenches close to the pylon were excavated, but the magnetic map shows that they had continued for nearly 20 metres to the north. The western trench had cut through an older oven, situated in the original pre-temple ground in the area in front of the pylon foundation (Figs 4-5 and 4-6). The width of the avenue between the screen-walls built on these foundation-trenches was 5.3m, no doubt intended to be 10 cubits. To the west of the western sand-trench, immediately beyond the earlier oven, was an area of mud-brick extending towards the north, perhaps the base of some kind of buttress at the front of the temple. The width of this brickwork was 2.5m and there was probably a matching feature to the east of the temple axis. A test-trench cut into the ground...
Beside the eastern sand-trench revealed sandy fill at an additional depth of around a metre, containing a few pottery fragments of Ramesside date.

**Pottery list:**

A flask neck with scars from the breaking off of two handles. External red slip. Cf. Spencer 1999, pl.75, no. 16.

A siltware jar neck with an external red slip. Cf. Spencer 1999, pl.70, no.3; pl.73, no. 12.

Several open plates with plain rims. Cf. Spencer 1999, pl.70, no.3; pl.71(b), no. 2.

Fragments from three large plates of coarse red siltware. As Spencer 1999, pl.71(b), no. 1.

Small fragments from the rims of two incurved bowls of Silt B fabric.

Coarse red siltware rim, as Spencer 1999, pl.70, no. 3; pl.72, no. 12.

From the rear of the west side of the pylon, the side wall of the temple, also built of mud brick and with a thickness of 2m, extended towards the south. This wall had been founded on a layer of limestone chips, perhaps the remains of an older monument cleared away to make room for the temple. Only a short length of this wall could be traced because it disappeared into a pitted area,
but within the surviving part was a corner with a cross-wall going to the east. This corner was located 2.3m from the back of the pylon and the cross-wall itself had a thickness of 1.58m.

Beside the exterior of the western wall of the temple the excavation was taken slightly deeper, to relative level 90, in an attempt to study the pre-temple ground. A thin wall of mud brick was revealed running north-south and composed of a single line of headers, 40cm in length (Fig. 4-10). In the fill near to this wall were several broken dishes of poorly-fired coarse siltware pottery (Fig. 4-14). These had flat string-cut bases and plain rims and may date from the eleventh century BC. (Aston 1998, 163, nos. 421, 424-5).

On the opposite side of the temple, a small part of the eastern wall of the building was also identified, but part of this had been cut away at an oblique angle by the later foundation for the temple of Psamtik I (Fig. 4-9). Unfortunately, attempts to acquire dating evidence about the temple did not meet with great success. The building must pre-date that of Psamtik, because it is cut by the foundation of his adjacent temple, but no foundation deposits were discovered to identify the builder. Some of the ground beside and below the foundation contained Ramesside pottery, but the quantity of sherds was limited and does not permit a very precise dating. The design of the foundation in the form of an open-pit (as opposed to individual wall-trenches) suggests a date no earlier than the Third Intermediate Period, at which time building activity is attested in the main temple of Amun with the construction of the pylon of Sheshonq III. Although the excavated remains of the temple were found to be not very well preserved, the magnetic map still shows an almost complete outline of its original ground plan, with a length of about 40 metres. This shows that the disturbance of the ground caused by the construction and later demolition of the temple has left a measurable magnetic trace, allowing the geophysical scanning to detect the footprint of the monument even in those areas where it is invisible to the eye. The foundations for the approach corridor to the pylon are interesting in this respect: at their southern ends, by the face of the pylon, the sand filling remains in place, but tests further north showed that all the sand had been removed and replaced by fine homogenous mud. The magnetic properties of this are, however,
of low intensity and closer to those of the sand than to the surrounding compact earth which surrounds the foundation-trenches, so the pale lines of the foundations appear on the scan in spite of the loss of the original sand. The same is true for the large area of the temple naos, which also appears pale on the magnetic map, although very little of the original sand filling remains. Again, the mud which has replaced the sand is magnetically different from the ground outside the foundation, so the shape of the temple shows. The lack of the original sand-bed in this temple is not surprising, as its presence would soon have been detected by the builders of the adjacent temple of Psamtik I, for whom it would have been a most convenient sand-quarry for their own monument.

From the disturbed fill above the ruins of the temple came two limestone trial-pieces, one a three-dimensional sculpture of a royal kilt (Fig. 4-12) and the other a relief carving, also showing the kilt of a figure (Fig. 4-13). A pit on the site of the eastern side of the pylon contained the fragmentary glazed bowl shown in Figure 4-15.

Unlike the other temples of the site, this one is oriented facing directly to the north, although the reason for this is not apparent.

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**Fig 4-12:** Front, side and back of a limestone trial-piece of a royal torso with kilt. The ends of the legs are flat, not broken, showing that the piece was complete in itself and not a fragment from a figure.

*Height 11.7cm; depth 5.8cm.*

**Fig 4-13:** A limestone sculptor’s trial-piece with a low relief carving of part of a royal or divine figure, facing right. Only the kilt and upper part of the legs are represented. The lower edge is flat, not broken. Height 11.4cm; width 12.3cm; thickness 2.5cm.

**Fig 4-14:** Fragments of several coarse red siltware pottery dishes of this form were found in the fill outside the west side of the temple foundation, close to the low-level wall shown in Figure 4-10. Scale 1:4.

**Fig 4-15:** Reconstructed profile of a blue-glazed composition bowl, from Ptolemaic pit-fill above the destroyed east wing of the pylon. Scale 1:2.
5. A barque-station of the Twenty-sixth Dynasty (Temple E)

I

Discovery and Excavation

(a) Location

The remains of this temple were found by magnetic mapping in 2006, directly in front of the small temple of Nekhtnebef (Temple B). In this location, the building can only have been a barque-station dependent on the main temple of Amun, the earlier precursor of the temple of Nekhtnebef in this role. The surface of the area exhibited a deep mud-filled hollow surrounded by old dumps of spoil, some from ancient activity and others, perhaps, from undocumented nineteenth-century excavations (see Fig. 3-1, above). It is the area denoted ‘The Temple site’ in the papers of Howard Carter concerning his brief season of work at Balamun in 1913 (Malek 1985). A photograph from Carter’s collection shows the topography not dissimilar from that of the present day, but with a scatter of stone blocks visible on the surface which have since disappeared. The area did not look very appealing for investigation, but the evidence of the magnetic mapping showed clearly the presence of a square building below the mud. On the magnetic scan, the structure appeared to measure approximately 20 metres along each side and it showed as an anomaly of low magnetic value with higher magnetism in the centre. Faint traces of what appears to be the location of an original ramp approach in the centre of the north-west side are also visible on the magnetic map, indicating that the entrance to the building was from that side. This is to be expected, as it is the direction facing the approach to the main temple of Amun.

Trial excavations were made at two points at the end of the 2006 season to confirm the nature of the discovery. These revealed the east corner and part of the north-east wall of the building, composed of limestone blocks. The masonry lay within a stone-robbers’ trench, the edge of which was the first feature to appear in the excavation. The magnetic mapping seemed to be detecting both the limestone blocks and the trench. At the

![Fig 5-1: The square plan of the “new” temple shows clearly on the magnetic map, directly in front of the temple of Nekhtnebef. The black features on the left are Roman lime-kilns.](image1)

![Fig 5-2: The test trench of 2006 at the east corner. The sand stripe in the foreground is part of the foundation for the Nekhtnebef temple (Temple B).](image2)
east corner, the test excavation exposed two large and fairly rough blocks of an upper course from the north-east face of the wall, with a lower course of four blocks below. A third course was also visible, descending into subsoil water. The upper-course blocks were 50cm high whilst those below had a height of 40cm. Some of the upper-course blocks had recesses or hollows cut into their sides, suggesting that they may have been re-used from an older monument. The blocks had been placed in such a way that these features remained hidden in the core of the wall. No decoration was present on the masonry and the surfaces of the blocks were only dressed to moderate smoothness. The depth of the foundation of the wall indicated that the building pre-dated the nearby temple of Nekhtnebef.

The second test excavation of 2006 was situated six metres further to the north-west and, like the excavation at the corner, it revealed the stone-robbers’ trench with some remaining masonry below it. Three blocks from the upper course were found, but they had all been displaced from their original positions and left lying at various angles, embedded in the surface mud. The next course of white limestone blocks was relatively intact and was traced over the full thickness of the wall, a distance of 3.68 metres. By the close of the 2006 season it was clear that substantial portions from the lower courses of the stone building remained in place in the locations shown by the magnetic map. The full excavation of the building was commenced in March 2007 and the north-east and south-east walls were excavated in the 2007 season of work. The remainder of the building was cleared in 2008.
(b) Excavation of the north-east wall of the barque-station

In 2007, the trial-trenches from the previous year were re-cleared and the excavation then extended to reveal the entire length of the north-eastern wall of the building. Remains of three courses of masonry were found to have survived, the lowest layer being intact and set on a deep bed of sand contained in a foundation-trench. The upper two levels of stone had suffered from quarrying activity in the Roman period, and many of the blocks had been taken away and others moved from their original positions. The surfaces of the blocks were roughly dressed. A fine finish was not needed because all this masonry had belonged to the foundation of the building below the ancient ground level. The dimensions of many of the blocks, particularly in the lowest course, indicated that they had been made to a standard approximate size of 2.5 x 1 x 1 cubits.

The north-east wall has a total length of 21.20 metres and is 3.68 metres thick. The entire base layer of blocks remains in place, together with a considerable part of the second course. Between these two courses were remains of an original layer of sand about five centimetres thick, on which the second course blocks had been set. Blocks of the third course survive in their original positions only at each end of the wall – that is, the north and east corners of the building. The first two courses consist of the long narrow blocks about a cubit in width. These are laid with their longer dimensions across the axis of the wall in the bottom course, but their positions in the second course are more varied and they seem to have been cut to fit the spaces. The second course also exhibits an interesting feature in the presence of a line of narrow blocks running right across the wall every 4.2 metres. This seems to have been a method of dividing the construction into sections, the spacing being equivalent to eight ancient Egyptian cubits. Unfortunately it was impossible to determine whether the same arrangement had been present in the other walls because almost all the blocks of the second course had been removed from their original positions. The highest preserved part of the north-east wall is at the east corner, where the top of the third course of blocks lies 0.90 metres above the top of the base course. These upper-course blocks were among the ones seen in the first test-trench of 2006. All the masonry lay originally below ground in the foundation of the building and the roughly dressed exterior surfaces show that it was...
Fig 5-8: View along the remains of the north-east wall, from the north corner, showing the intact second course and scattered blocks displaced from the upper course. The recess with deep shadow on the right marks the position of the interior angle of the corner, where two blocks have been removed from Course 2.

Fig 5-9: The east corner, showing the large blocks of the third course preserved in place on the outer face. In the core of the wall, only the first foundation course remains, but most of Course 2 has survived further along the north-east wall (in the background, on the right). The block immediately behind the scale is a fragment of a palm-capital from a column.
not intended to be visible. Any decoration would have been applied to better-finished masonry in the higher levels of the walls.

**Small objects found in the clearance of the north-east wall**

During the excavation of the north-east wall, a few items were found in fill not cut by the test-trench of 2006. All came from disturbed fill at a high level.

1. Part of the side and base from a small red-ware bowl with an incurved rim. The interior and exterior are covered with a polished red slip. The form was common in the Ptolemaic Period. Height 13.5cm., original diameter 21cm. Found above the north corner of the building. Fig. 5-10.

2. Base and side of small juglet of fine red pottery. Surviving height 4.0cm., original diameter 4.4cm. Ptolemaic. Fig. 5-11, left (Scale 1:4).

3. Neck from a water-flask, made from red siltware pottery with bands of a pale buff wash. A handle has been broken away from each side. At the base of the neck is part of an integral strainer with three surviving holes. Height 7.3cm., Diameter 6.9cm. Coptic Period. Fig. 5-11, right. (Scale 1:4).

4. A small pottery mould for the hieroglyph for the letter r. Such moulds were used to manufacture hieroglyphic signs in glass, for use as inlays. Many examples of both moulds and inlays were found in the excavation of the glass factory at Tell Gumayyem by Petrie and Griffith (Petrie 1888, 42-4, pl. 18; see also Cooney 1974, 112ff.). Length 3.1cm., Width 1.4cm., Thickness 0.9cm. From fill above the north corner. Fig. 5-12. (Scale 2:1).

5. A bronze coin, probably of Ptolemy IV. On the obverse, a head of Zeus, badly worn. Reverse, eagle facing left. Diameter 1.9cm. Fig. 5-13.

6. Two small fragments of bronze. Each has been cut from sheet metal. Lengths 4.8, 3.0cm., widths 3.0, 2.0cm. Fig. 5-14.

Some of the joins between the blocks in the lower two courses are very fine, no more than 1mm at the face, and they are an indication of the quality
of this construction. This feature is discussed in Chapter 7. The third course masonry consists of larger and rougher blocks. A block at this level right on the angle of the north corner was re-used from an older building and bears half of the cartouche of Sheshonq III and traces of a low-relief figure of the king. This is the block at the rear in Figure 5-15 and in the foreground of Figure 5-16. All the inscribed blocks from the foundation of the barque-station are described in Chapter 8. Four other re-used blocks were found along the north-east wall: one with an inscription mentioning the god Shu, another with part of a royal figure and a text mentioning the goddess Nekhbet, a block with a carving of a throne for a seated god in low relief and, finally, a poorly-preserved offering-inscription. Lying on the lowest course of the east corner was part of a limestone palm-capital from a column, which may have actually belonged to this building. This capital is carved with six palm-leaves but these do not take up the whole of the perimeter, leaving about 60cm which is flat, suggesting that this capital might have come from a column attached to a wall. A loose block on the north-east wall had been cut into the shape of a cornice, possibly for use over a door, but the roughly dressed surfaces suggest that the piece may have been unfinished. These architectural pieces are described in Chapter 7.

The foundation-trench in which the wall had been built had already been detected in the first test-trench of 2006, at the east corner. To the south-east of the masonry was a clear line on the ground, cut through an older pit, which marked the limit of the trench cut by the builders of the barque-station.

Above the level of this trench was accumulated fill, into which the front part of the foundation for Nekhtnebef’s temple had been cut. In the small part of the foundation for the barque-station revealed in 2006 it was noted that the edges of the trench had been filled with a layer of mud-brick, set into the top of the foundation sand alongside the stone masonry. During the larger clearance of 2007 this feature was seen again at different points on either side of the wall, but the bricks were much better preserved on the exterior than the interior (Fig. 5-17). The size of the bricks was
**Fig 5-18:** Mud-bricks laid in the top of the sand-bed of the foundation trench around the perimeter of the building. The limit of the trench is visible on the left in this photograph of the east corner, where the cut into the pre-temple ground shows as a line which has sliced through a small pit.

**Fig 5-19:** Another view at the east corner, showing the limit of the foundation trench and the stratified layers through which it was cut (behind the ranging-rod). At a higher level in this profile, deposits which post-date the temple appear, themselves cut by the foundations of Nekhtnebef’s temple.

**Fig 5-20:** Mud-bricks laid in the top of the sand-bed of the foundation trench on the exterior of the south-east wall of the temple. This feature undoubtedly once ran all around the building, but it was only preserved at certain points.
31 x 17 x 10 cm to 35 x 18 x 12 cm. At many points the bricks had been destroyed by later pitting. The same method of construction was later observed at intervals along the south-east wall, so it probably continued all round the building originally. The best-preserved areas of this brick and sand filling were found outside the east and north corners of the building, where the bricks were found at the same level as the lowest course of masonry. The presence of the brick edging on both sides of the wall indicates that the foundation-trench had been dug just wide enough for the footings of the wall; the whole area of the base of the building had not been dug out. The fact that the sand-bed did not go across the centre is a good sign that there was a central podium founded at a level higher than the bases of the surrounding walls. This would be entirely consistent with the interpretation of the monument as a barque station.

(c) Excavation of the south-east wall of the barque-station

The south-east wall has suffered more from quarrying than the north-east, many blocks from the second course of masonry having been removed and all the remaining ones displaced (Figs. 5-21, Fig 5-22: View along the south-east wall from the south corner. Only the base course is intact; all the Level 2 blocks were displaced by ancient quarrying activity in preparation for their removal.)
Fig 5-23: The south corner, from the south-east. The blocks of course 2 lie scattered on the intact lowest course. The method of the ancient quarrying seems to have been first to lever all the stones out of position before beginning to remove them from the site, a task which for most of these blocks was never accomplished. The large block in the foreground, re-used from an older monument, bears an inscription of Sheshonq III.

5-22). This disturbance had removed any trace of the sand layer between the second and third course of masonry, noted in the north-east wall. The base course, however, was intact and constructed in the same manner as in the north-east wall. The blocks of this layer were laid in regular rows on the foundation sand, which could be seen descending deep into the subsoil water below the edge of the masonry. In a few places small gaps between the blocks had been filled by smaller pieces of stone. Only two blocks from the third course remain and these have been moved from their original positions. One of these is a re-used block bearing part of an inscription and the cartouches of Sheshonq III, described in Chapter 8. Lying on the wall near the south-west end were some fired bricks, probably from the remains of a Roman lime-kiln built as part of the ancient quarrying operation. One fired brick was found under the block of Sheshonq, showing that this had been moved in antiquity. The length of the south-east wall was 18.40 metres, making the dimensions of the whole temple 21.2 metres long by 18.40 metres wide. This is quite small for temple architecture, but would fit with the probable purpose of the monument as a barque-station. This wall was slightly wider than the one at the north-east, being between 3.85 and 3.90 metres across.

(d) Excavation of the south-west wall of the barque-station

This wall was excavated in the 2008 season. Like the other parts of the building, it was found to be buried only by empty layers of mud, devoid of archaeological content, brought in by wind and rain. The construction of the wall was similar to that observed on the north-east and south-east, and, like those walls, the masonry had suffered from extensive quarrying activity. The suspected purpose of this - to burn the limestone for quicklime - was confirmed by the discovery of parts of two abandoned kilns lying upside-down in the fill above the base course of masonry of this wall. These kilns consisted of fired bricks, held together with lime cement.

The foundation course of blocks in the south-west wall was intact, but the blocks from the higher courses were found in a state of disarray, as left by the ancient quarrymen. Many had been moved only a short distance from their original positions, as if this had been the first stage in their removal,
just to prepare them for lifting from the site. Most of the long, narrow blocks of the foundation course had been produced to an approximately standard size of around 140 x 52 cm for the length and width, and laid in regular rows with the longer dimension across the axis of the wall. This arrangement was just the same as that observed in the south-east wall, or in fact, in any part of the building. These large blocks had been used most extensively along the inner and outer edges of the wall, with smaller blocks being present in the centre. Along the length of the south-west side the base course was littered with the displaced masonry from the courses above. Like the foundation layer, the second course was also made up chiefly of long, narrow blocks. Only four of these remained in their original positions. The remainder had either been moved to some extent before being abandoned on the spot, or taken away entirely. Those missing presumably disappeared into the lime-kilns. In addition to the second-course blocks, the rubble also contained masonry from the third course, or perhaps above, which differed from the long and narrow bars of stone in the lower courses and consisted instead of heavy slabs. It was among this class of masonry that re-used stones occurred, bearing either older decoration or architectural details from prior use. In the central part of the south-west wall several decorated blocks were revealed among the displaced masonry. Their presence is noted here, but full descriptions are given in Chapter 8. Lying inverted on the foundation course was a block inscribed on one face with a row of cartouches, alternating the prenomen and nomen of Sheshonq III. Below each cartouche was a nwb-sign. Not far from this block, but at the exterior edge of the wall, were two large slabs with decoration in sunk relief. One of these was carved with a scene of a king offering the wedjat-eye to a seated deity, of whom only part of the knee and arm, the latter holding a sceptre, survives on the block. The other slab bore a hieroglyphic text containing the prenomen User-maat-Ra-setepenra and...
**Fig 5-27:** (Right) A view along the south-west wall from the west corner. The object in the foreground is a discarded kiln, and a second example is visible in the middle distance, on the left edge of the wall. Note how the area of the west corner is clear of overlying blocks above the foundation course.

**Fig 5-28a, b:** (Below) Two views of a fired-brick kiln remnant, lying above the west corner of the temple foundation. The presence of fill between this object and the base course masonry shows that the blocks of any higher courses had been removed and the hole for their extraction partly refilled before the kiln was dumped here.

**Fig 5-29:** Part of the side of a fired-brick kiln, found above the interior edge of the south-west wall. The bricks are firmly bonded in lime cement.
A BARQUE-STATION OF THE TWENTY-SIXTH DYNASTY

Fig 5-30: Part of the south-west wall, showing the intact masonry of the base course overlaid by loose blocks and, at the rear, part of the fired-brick kiln shown in Fig. 5-29. The block in the centre has a concave hollow in the top and may be a re-used door-pivot from an older monument.

Fig 5-31: Mud-bricks set in a patch of sand, beside the exterior angle of the west corner of the temple.

from the excavation of the stone. A second kiln remnant was found lying just about four metres along the wall from the one at the west corner. This example was less complete, with only part of the circumference preserved. Its original diameter was 164cm and the preserved height, 52cm, consisting of parts of seven courses of bricks. The bricks measured 33 x 16 x 8cm. Beside the remains of this kiln was a limestone block with a curious hemispherical depression in the top, surrounded by a rounded rim. The lower part of the block was of roughly polygonal shape. This piece was probably a door-pivot from an older building, re-used in the core masonry of the wall. Details of it are given in Chapter 7.

Some of the original mud-brick filling of the foundation-trench for the building was preserved around the west corner, close to the external edges of the base course of limestone masonry. On the north-west edge a small area exhibited mud bricks laid in yellow sand, a feature noted previously at other points around the perimeter of the building, notably at the east and north corners and along the exterior of the south-east wall. On the south-west side of the west corner there was also brick in the foundation-trench, but without the presence of sand apart from a very small and curious patch around two individual bricks (Fig 5-31). This patch was directly adjacent to the corner of the building and looked like a possible location for a foundation-deposit, but on cleaning the area it was found to contain nothing but two mud bricks set into a sandy pocket. The rest of the brick filling of the foundation-trench on this side had survived to a fairly high level about 120cm above the top of the base course of masonry.
The complete clearance of the south-west wall showed its full length to be 21.25 metres and its width, 3.75 metres.

(e) Excavation of the north-west wall of the barque-station

The north corner had been cleared already in 2007, and here a few blocks of the third course and a considerable number from the second were still in place. Many more of the second-course blocks were uncovered this year as work proceeded along this wall, but once clear of the immediate area of the north corner, these were all found to have been displaced. A jumble of blocks from the higher courses covered the intact base course of this wall, except at the west corner, which was clear, as described already with the account of the south-west wall. The intact second-course blocks were present for a distance of around six metres from the north corner. Beyond this point the level of the preserved in-situ masonry fell to the top of the foundation course blocks, all of which were present. Until the clear area at the west corner was reached, the concentration of loose stone lying on this wall was high, denser than that on the south-west wall. As on that side, the displaced blocks were a mixture of the long stone bars used for the second course and the more varied slabs from higher levels. Among the latter were numerous re-used blocks, which are described in Chapter 8. These included several decorated pieces with parts of offering-scenes, the most complete of which was a slab with a relief of a king offering a clypsedra. Another showed a king offering a nw-pot and there were several others with fragmentary elements of the figures of kings or divinities. One block bore a relief of a falcon flanked by the cartouches of Sheshonq III. Most intriguing was a block with parts of three remaining lines of hieroglyphs from a text containing a mention of the Ma[shwesh] and a probable writing of the name Takeloth. In addition to inscribed and decorated blocks, there were also re-used column-capitals, some in the Hathoric style (see Chapter 7 for details). When the complete clearance of the wall had been achieved its length was determined to be 18.40 metres, exactly matching the south-east wall at the opposite end of the building. The maximum width was 3.85 metres.
6. A barque-station of the Twenty-sixth Dynasty
II
Stratigraphy and date

(a) Introduction

The ruins of the temple are buried under layers of mud, free of any archaeological material until the stone blocks are reached at depths of between 1.0 and 1.5 metres. The absence of stratified material shows that the whole area has been dug out previously, probably on more than one occasion, and the hollow left by these works has filled up with mud brought in by wind and rain. The existence of lime-kilns along the south-west side of the building (detected on the magnetic map) and the displacement of many blocks shows that the temple was used as a quarry in the Roman Period. The presence of nearby dumps shows that it was again excavated to some extent in the nineteenth century, although there is no record of this work. The only points at which any archaeological strata are preserved to help date the building are at its edges, in areas which were missed by the older clearances. Here, particularly at the eastern and southern corners, the original ground into which the foundation of the temple was cut can be detected. It contains settlement material dating from the early part of the Third Intermediate Period. Presumably similar remains had extended right across the area later chosen for the construction of the small barque-station temple.

(b) Details of the settlement deposits beside the south corner of the temple

An area of 4 x 3 metres was excavated beyond the south-west edge of the temple, adjacent to its southern corner. The purpose of this investigation was to check the nature and date of the deposits next to the structure, to see whether they were cut by its creation or accumulated later against it. Evidence of both conditions was found and the stratified remains indicated a clear sequence of events, beginning with the existence of some Third Intermediate Period settlement at this point, the remains of which were first cut through by the foundation-trench for the construction of the barque-station and subsequently cut again on more than one occasion by stone-robbers’ trenches in the Roman Period. A few small traces of the first cut had escaped being lost in the subsequent excavations, so it was possible to determine that the foundation-trench of the temple on this side must have been dug from a relative level of +68 or higher. This is equivalent to 69cm above the top of the lowest course of masonry at this corner.

During the Roman quarrying operations, broken limestone was dragged up the sloping side of the cut made to reach the stone masonry and across the surviving parts of the Third Intermediate Period settlement. As a consequence the first layer of surface fill contained a quantity of limestone fragments. There was also a single fired brick, a remnant of one of the lime-kilns set up in Roman times (Fig. 6-1). On removing this material, the ground became free of stone and the remains of the Third Intermediate Period features appeared, except at the north-east side of the excavation (closest to the temple), where only empty, dark mud was found. This was the mud which had filled the stone-robbers’ trench after its abandonment; it was found to descend at a slight slope, following the edge of the trench and resting against the undisturbed Third Intermediate Period deposits beyond its limit. The Roman trenches had cut right down as far as the top of the sand-bed of the temple.

Fig 6-1: A fired brick of slightly curved shape, used in kiln construction.
below its corner, but none of the lowest course of masonry had been removed. The second and third courses, however, had been extensively quarried. After removing the broken limestone debris which overlay the Third Intermediate Period level, part of a mud-brick wall and some pottery were found. The short length of brick wall extended from the south-west edge of the excavation for a distance of 1.35 metres, at which point it had been truncated by the original cutting of the foundation-trench for the temple. The thickness of the wall was 78cm. It was the only built feature in the excavated area, and on either side of it pottery was recovered. The most substantial ceramic find was a large storage-jar, found standing in the ground in the south angle of the trench (Fig 6-3). This tall vessel of coarse red siltware, with two loop-handles at the rim, is typical of the Third Intermediate Period (Aston 1998, 562, fig. 6.04; Redford 2004, 179, plate Q, no. 7). It was 55cm in height with a maximum diameter of 36cm. The other pottery recovered was all fragmentary, but it included the following diagnostic pieces which indicated a date early in the Third Intermediate Period.

1. Two fragments from a shallow bowl of red siltware pottery. Surviving height 6.0cm., diameter 26.0cm. Fig. 6-4, no. 1.

2. Two sherds from shallow plates of red siltware pottery. Fig. 6-4, no. 2. (Cf. Spencer 1999, pl. 71b. 2).

3. Two fragments from thick pottery plates of red siltware. Fig. 6-4, no. 3. (Cf. Spencer 1999, pl. 71b. 3).

4. Part of the rim of a red siltware pottery bowl. Fig. 6-4, no. 4. (Cf. Spencer 1999, pl. 72. 11).

5. Two cylindrical necks from siltware jars. Fig. 6-4, no. 5. (Cf. Spencer 1999, pl. 73, 12).

6. The upper part of a narrow-mouthed vessel of coarse red siltware pottery. Surviving height 5.3cm., diameter at rim 3.4cm. Fig. 6-4, no. 6. (Cf. Spencer 1999, pl. 75, 10).

7. A small cup of coarse red siltware pottery, with a flat string-cut base, flared sides and plain rim. Height 4.0cm., diameter 7.1cm. Fig. 6-4, no. 7.

8. Two rim-fragments from large bowls with thick, internal rims. Red silt ware. The diameter was around 40cm. Fig. 6-4, no. 8. Many examples of this type of vessel, of various sizes and probably used as grain-measures, were found in the 1998 excavation of the silos at the front of the temple of Amun (Spencer 1999, 67). The form is also recorded from Ehnasya, Qantir and Mendes, see Lopez-Grande et al. 1995, pls. xviii, h; xxii, b-c; Aston 1998, 343 [1178-1182], 459 [1650-1652], 527 [2128-2134], 467 [1703-1716]; Redford 2004, 178, plate P, 6-9.
Fig 6-4: Pottery and objects from the Third Intermediate Period level. Scales: Pottery 1:4; flints 1:2; lead object 2:1.
A few body sherds from jars with traces of thin cream slips, characteristic of early Third Intermediate Period pottery, were also recovered.

9. Flint blade, the pointed end broken off. At the butt is a patch of white cortex. Length 6.2cm., width 5cm., thickness 1.4cm. The two faces are shown in Fig. 6-4, no. 9.

10. Flint blade with cortex remaining on one side. Length 6.6cm., width 5.2cm., thickness 0.7cm. The two faces are shown in Fig. 6-4, no. 10.

11. A lead net sinker, made from a short bar folded over. Dimensions 2.0 x 1.2 x 1.4cm. Fig. 6-4, no. 11. Similar objects are recorded from Tell Dafana (Petrie 1888, 77; British Museum EA 23861).

A common cylinder bead of pale green glazed composition was also found in the south-eastern end of the trench. Length 1.5cm., diameter 0.3cm. Not illustrated.

(c) The foundation-trench of the temple

Although the masonry of the wall from the east to the south corners was covered only by sterile mud, the original mud-brick and sand filling of the foundation-trench for the temple was found to be well preserved around both sides of the east corner. This is illustrated in Chapter 5. The clearance of the building during ancient quarrying had not gone deep enough to remove this feature, which lay at a similar level to that of the upper surface of the deepest course of masonry (Relative Level -3 at this corner). To the south-east of the corner the limit of the foundation-trench was observed at the same level, where it had cut into the pre-temple ground at a distance of around one metre from the face of the stone wall (see Fig. 5-19 and the plan in Fig. 7-19). Other portions of the brick and sand filling of the trench survived at points along the exterior of the south-east wall, the highest preserved part reaching a relative level of +18. Some of these bricks are visible in Figure 6-5, immediately below the ranging-pole. The fine brick packing of the trench must only have been maintained up to a limited level, because the higher parts had been filled up with ordinary earth, containing sherds and other debris. This material was probably some of the fill which came out of the foundation during its original creation. At its highest point along the south-east wall, it attained a relative level of +77. The same feature was also noted at the north corner at relative level +98 and at the west corner, at the higher relative level of +120. It follows that the level of the ground in the area prior to construction of the temple must have been no lower, and may well have been more elevated, since surface erosion probably occurred before the area was covered by relatively recent water-laid mud. The present relative level of the ground between the walls in the centre of the building is around +100, well below the level of any original floor of the podium.

The mud-brick and sand filling of the deeper portions of the foundation-trench was also noted at other points in addition to those recorded above. Some fairly well-preserved bricks were found around the masonry of the north and west corners.
and a few traces against the exterior of the middle of the north-east wall. The feature had not survived so well anywhere on the interior of the walls, but sufficient traces were found to show that it had existed there. The greater degree of disturbance by later quarrying activity along the interior of the walls had removed most of the sand from around the bricks. The surviving portions are indicated on the plan in the following chapter (Fig. 7-19).

(d) Dating of the monument

The destruction of the upper part of the building to leave only the foundations means that all the decoration of the temple has been lost. It is still possible, however, to draw conclusions from stratigraphic evidence to narrow down the date of the monument. As described above, the foundation was cut into an area previously occupied by loosely distributed settlement remains from the early part of the Third Intermediate Period. This provides one end of a chronological sequence, the other limit being imposed by the creation of the subsidiary temple of Nekhtnebef and its associated approach directly above the ruins of the barque-station. If any portions of the building were still standing above the general ground level by the thirtieth dynasty, they would have been levelled and buried for Nekhtnebef’s new development. The discovery of re-used blocks of Sheshonq III in the foundations of the barque-station helps to refine its place in time. This king is known to have built in the main temple of Amun at Balamun, and these blocks may have been taken from there, unless the barque-station itself replaced an earlier monument of Sheshonq III in the same location. Given the constraints of the chronological period established by this evidence, the most probable date for the construction of the building is the twenty-sixth dynasty, during which time other major works were carried out in the temple complex at Tell el-Balamun, particularly by king Psamtik I. It is interesting to note that more stone masonry has survived in this small temple than in any of the other larger temples at the site. This suggests that the ruins of the building quickly became buried after it ceased to be used, hiding the remaining stone from view.
Some of the blocks in the third, or uppermost, course at the east corner of the building had roughly-cut rebates or perforations at the corners, similar to those which occur in Egyptian doorways to allow for the use of simple locks. These holes were on the sides of the blocks which lay in the core of the wall, hidden from sight, and must have belonged to a prior use of the stones. The example in Figure 7-1 shows a hole cut at an oblique angle through the corner of the block.

Also at the east corner, but in the lowest course, a few incised lines occur on the top of the blocks. These appear to be setting-out lines but they do not relate to the masonry of this building. Again, they must have been made during a previous use of the stone.

The construction of the building is generally of good quality and some of the joins between the blocks of the base course are particularly fine. The best are at the north corner, examples of which are shown here. The faces of the blocks are effectively in contact throughout the full length of the joint, with barely a millimetre gap at the surface. The care with which the stones had been laid is
also shown by the consistent relative level of the top of the base course, which varied only between one and three centimetres below datum.

The interior of the north corner of the building had been damaged by the ancient removal of two blocks from the second course (Fig. 7-5). Parts of these blocks are still lying nearby. The base course below is intact at the corner and all the in-situ blocks are well laid and carefully jointed.

The interior of the south corner, like all the south-east wall, was less carefully constructed and required a patch between the blocks at the angle. The original stone patch was missing and the gap was filled only with re-deposited mud when excavated (Fig. 7-6). The west interior corner had also made use of a small patch of stone, which was in this case still present, right on the angle. Its purpose was to complete the last few centimetres of the inner face of the north-west wall.

The interior angle of the east corner was intact at the level of the foundation layer of blocks and had not required any patches for adjustment, as shown on the plan (Fig 7-19). Close to the interior north corner there was a lightly-incised setting-out line across the top of the second course of masonry, extending right across the wall. This would have been intended as guide for the placement of stones in the third course, none of which remain in place at this point.

Along the length of the north-east wall are four points at which a row of very narrow blocks runs transversely through the thickness of the wall at the level of the second course. The separation of these features is an even 4.2 metres (8 cubits), suggesting that they mark the boundaries of individual sections of construction. The location of the rows of narrow blocks is indicated on the plan (Figure 7-19), and two of these rows are shown in the photographs in Figures 7-8 and 7-9, highlighted in each case with an arrow. As mentioned above, the lack of level 2
Fig 7-8: One of the rows of narrow blocks marking a constructional boundary in the north-east wall. The red arrow indicates the right edge of the row.

Fig 7-9: One of the rows of narrow blocks marking a constructional boundary in the north-east wall. The red arrow indicates the right edge of the row.

Fig 7-10: Part of a limestone palm-capital from a column

Fig 7-11a: Cornice block: side view.

Fig 7-11b: Cornice block: base.
masonry in place in the other walls of the building has removed any evidence for this method of construction elsewhere in this temple.

In some parts of the construction, gaps between blocks which could not be closely fitted together had been patched with small pieces of limestone. This was more common in the south-east wall than at the north-east.

Among the scatter of wall-blocks from courses 1 and 2 which rested on the intact foundation layer were a few distinct architectural elements. One of these was part of a limestone palm-capital from a column. This capital is carved with six palm-leaves, each 31cm wide, with a central rib of 5cm. The remainder of the perimeter is comprised of a flat section 60cm long. The surviving height is 25cm. It was found lying inverted on the masonry of the north-east wall, near the interior east corner (Fig. 7-10).

Another interesting piece was a cornice block, perhaps from over a door. This architectural element is quite rough and perhaps unfinished. The block is 83cm high, 45cm wide and 44cm deep, with a crudely-worked cavetto cornice on the front. This occupies around 30cm of the height. The left side is recessed at the top for engagement with another block, as the presence of half a dovetail cramp-slot testifies. There is another such slot in the base of the block. Details are shown in Figs. 7-11a-b. It was found among the loose course 2 masonry of the north-east wall.

Towards the west end of the south-west wall was a block which may have once served as a door-pivot (Figs. 7-13a-b). It lies not far from one of the fired-brick kilns, and at first it was thought that the dished top might have been created in Late Roman times for some purpose. This view was rejected when it was observed that the kiln remains above the wall had been discarded there, so no industrial activity had been carried out on the ruins of the temple. The character of the working of the pivot-block shows no particular evidence of Late Roman tools. The character of the piece would be suitable for the lower door-
pivot of a large door, with a considerable mass of stone on the base of the block, below the circular depression, for it to be bedded into the ground. It probably came from an earlier monument as its size makes it unlikely to have belonged to a door in this temple. The maximum height of the entire block is 50cm, with a width of 95cm and a depth of 91cm. The hollow in the top is 73cm across on the exterior of the rim, with a depth of 14cm. The rounded rim is damaged in places and is 12cm high.

A short distance further along the south-west wall from this pivot-block is a rough piece of masonry with an attachment-point cut into its upper surface. This was created by cutting down from each side to leave a bar of stone across a cavity. (Fig. 7-14). The width of the cavity is 16cm and its length, 33cm. The bar for attachment is 5.5cm thick. This feature has a domestic look about it, and may have been cut at some period when the stone was visible on the surface, possibly as nothing more grand than a tethering-point.

The rectangular block shown in Figure 7-
15 lay on the south-west wall not far from the west corner. One edge retains an intricate recess, 29cm in width, possibly connected with a doorway in some prior use. One end of this block has a portion of the stone left rough, as if it had been concealed under other masonry. The size of the block was 129 x 64 x 56cm.

Amongst the rubble of the north-west wall were a few fragmentary architectural elements from columns. Parts of two Hathor-capitals were present, but it is unlikely that these had originally been part of this temple. One example consisted of a thin slice of stone cut from the upper part of one side of the original capital. The Hathor face had been on the narrow end, so all that remained was a small part of the curve of the wig. Above this was part of the original edge of the flat top of the capital. The height of the piece was 55cm with a width of 60cm and a thickness of 35cm. (Fig. 7-16). The second Hathor-capital, found close to the inner edge of the wall, was in a very battered condition and the upper part had been destroyed. One side retained part of the decorative face of Hathor, but very few details were preserved. The curls of the wig and the bottom of the face can be seen. This piece was 58cm high by 71cm wide and 32cm thick (Fig. 7-17).

A fragment of a papyrus-bud column was also found loose among the debris of the north-west wall. The piece had been cut from one side of the column and so the full diameter was not preserved. The fragment was 53cm high by 71cm long, with a thickness of 42cm. (Fig 7-18).

The origin of the column capitals was, as mentioned above, most probably an older monument which was used as a source of stone, but it is very likely that this temple itself contained many columns as part of its design. As a barque-station chapel with a central podium approached by a ramp, the monument fits a well-known architectural type for which parallels of various sizes have been documented. One of the characteristic features of such buildings are rows of columns on all sides around the central chapel (Borchardt 1938, 79ff). As a Late-Period structure, the columns around the periphery are likely to have been linked by screen-walls. On the podium in the centre of the building there would have been a shrine open at either end for the barque of the god to pass through in procession. The level of the floor of the temple must have been considerably higher than the present level of the ground surface, which, in the interior of the building, is now no more than a metre above the top of the foundation layer of masonry. The above-ground portions of the barque-station would have been sufficiently elevated to have obstructed the approach to the later temple of Nekhtnebef (Temple B), and would consequently have had to have been removed in the thirtieth dynasty, if they had not already been destroyed. This left only the deeper foundations of the perimeter walls of the barque-station in place below the ground. The construction trench for these walls had been cut in the form of a hollow square, which left the central area in place, where shallower foundations were required for the interior of the building. This suggests that, apart from the axial shrine, the centre of the podium may have been unroofed, whereas the
perimeter foundations carried the weight of roofing supported on the surrounding columns. To achieve this arrangement, a double row of columns would have been required, one row along each edge of the foundation. The average width of the substructure of the walls suggests an intended thickness of seven cubits, which would have allowed space for paired columns with diameters of 1.5 cubits (around 0.78m) and have left a span of 5.5 cubits between their centres. The total size of the building, at 21.4 by 18.4 metres, indicates a design of 40 x 35 cubits. This would make the central part of the podium, within the colonnades, 26 x 21 cubits. The width of 21 divides neatly into three sections of 7 cubits, allowing one for the width of the barque-shrine and the other two for the spaces on either side. The module of seven units would have harmonised well with the same dimension for the width of the perimeter walls.

**Fig. 7-19:** Plan of the barque-station chapel.
Re-used blocks with inscriptions and reliefs were found among the displaced masonry of the temple foundation. Only one example was found still built into the structure, a large block of the second course set at the north corner of the building (number 1 below). Details of the pieces are as follows:

No. 1. Re-used block at the north corner, with inscription of Sheshonq III. This large limestone block formed the actual north corner of the temple at the second course of construction. The original decorated face was placed uppermost and would have been covered by the blocks of higher courses. In its former orientation, the block was 85cm high and 117cm wide. The original thickness is not known; it is now 52cm, but was probably re-cut to this size for use in the new temple, so it would match the other blocks of this course. The surviving decoration runs along the original upper edge and once extended further down, but it has been lost through decay of the surface. On the upper left are the lower parts of two cartouches, the left one illegible but that on the right containing signs which best fit the nomen of King Sheshonq III. The cartouches are framed by vertical register-lines. To the right there is the hieroglyph for $m$, with another sign, perhaps $n$, above, and then the back of the kilt and the upper legs of a royal figure, facing right. The kilt had a decorative central panel with two pendent uraeii. All the decoration is in fine low-relief.
No. 2. A limestone block with part of a royal scene. The block measures 52cm in height by 73cm wide, with a depth of 45cm. The sunk-relief inscription reads: “Beloved of Nekhbet, the White One of Hierakonpolis”. It is written vertically between register-lines as shown in the details below. To the right of this vertical line of text is the leg from figure of a striding king. It must originally have been balanced by an image of the goddess on the left, towards which the hieroglyphs are oriented, but no traces of this are visible. Found beside the interior edge of the north-east wall, eight metres from the interior east corner.
No. 3. Limestone block with part of a scene of a king and the god Osiris or Ptah. It measures 43cm high by 47cm wide, with a depth of 32cm. In the centre is a vertical line of incised hieroglyphs between register-lines, reading “...for his father, that he might make Given Life.” There is an interesting example of a reversal of the hieroglyphs. This was intended to suit the disposition of the accompanying figures, which traces show were those of a king on the left and the god on the right. Only the leg of the king and the plinth and foot of the divine figure survive. Found close to Block no. 2, beside the interior edge of the north-east wall, eight metres from the interior east corner.

No. 4. A small rough block of limestone of slightly tapered shape, with a trace of decoration on one end. All that survives is a horizontal hieroglyph (probably Gardiner N 37) between register-lines. The orientation of the piece is unclear. The edge of the block has a dovetail cramp-slot cut in it. Size 46 x 30 x 12cm. Found among the loose course 2 masonry of the north-east wall.

No. 5. The upper part of a limestone block with part of an inscription from right to left in sunk relief. The block is 86cm long with a maximum height of 24cm. Only the upper portions of the signs remain and a connected reading is problematic. The first sign is \textit{m}, followed by the name of the god Shu with a solar determinative, then the words \textit{hri-tp}.... A slot for a dovetail cramp in the top of the block shows that it was connected to another at this end of the text. Found among the loose course 2 masonry of the north-east wall, seven metres from the east corner.
No. 6. A large block of off-white limestone, decorated with the lower part of a scene showing a deity seated on a throne, facing left. Only the legs and feet of the figure and part of the throne are visible. Found by the exterior face of the north-east wall, 4.50 metres from the north corner. Height 85cm.

No. 7. A large block of limestone, decorated in sunk-relief with the cartouches of Sheshonq III on the left, and a text in more deeply cut hieroglyphs on the right. The text of the first column mentions Amun-Ra, Lord of Sma-en-[Behdet], the original name of the site at Tell el-Balamun. The word Behdet is missing, as it would have been at the top of the next line, but there can be no doubt that this is a correct reconstruction. In the second line we read “the great god, lord of the sky and of Upper and Lower Egypt.” The final line contains the common “all life, stability and dominion like Ra.” To the right of the text there is a trace which may be part of the kilt of a figure. The block with this inscription measures 103 x 58 x 68cm. Found upside-down in the ruins of the south corner of the temple.
No. 8. A slab of white limestone decorated in sunk relief on one face with an inscription in three vertical lines of hieroglyphs. Above is a horizontal border which ran along the top of the scene. To the right is the lunar disk headdress of the god Khonsu, who is identified in the inscription. At the base of the disk is a uraeus on a trace of the top of the head of the god. The leftmost line of inscription, which referred to the king and is oriented to read from the right, states: “The King of Upper and Lower Egypt, Usermaatra Setepenra.” This very common prenomen does not provide definite proof of ownership, but the block is most likely to have come from a monument of Sheshonq III, given the common occurrence of his name on other re-used elements in this temple. The other two lines of the text show the opposite orientation and applied to the god: “Recitation by Khonsu, Lord of Sma-en-Behdet, the Great God, Lord of the sky.” A step in the top of this block must have been cut during its re-use, since it has cut the border band of the scene. Maximum height 89cm., width 78cm., thickness 48cm. From the south-west wall.
No. 9. A rectangular slab of limestone decorated on one side in sunk relief with part of an offering-scene, showing a standing figure of a king on the left offering the *wedjat*-eye to a seated god. This block was found next to the inscribed block number 8 among the masonry of the south-west wall. The figure of the king is complete from the level of the kilt to the brow, but the surface of the stone has been eroded at the top so some of the facial detail has been lost. The king is shown wearing a bag wig with a long lappet, and the royal beard. There seems to have been a collar around the neck. Traces of red paint were noted on the left arm of the figure, and blue on the *wedjat*-eye and on the staff held by the god. Of the divine figure, only the hand holding the staff, part of the *ankh*-sign held in the other hand, and the knee remain on this block. Height 70cm., width 93cm., thickness 42cm.

No. 10. A trace of a cartouche on the end of a large block, lying on the foundation course near the interior of the west corner of the temple. The traces show a Ra-sign and part of the curve of a cartouche, but insufficient is preserved for any reading to be made. Above the cartouche was a double plume. The presence of this minor decoration at least indicates that the block has been re-used. The block measures 49cm high by 93cm long and 50cm thick, but the width of the decorated area is only 20cm.
No. 11. A loose block lying upside-down on the central part of the south-west wall, inscribed on one side with a row of cartouches of Sheshonq III in sunk relief. The lower parts of seven cartouches are preserved, showing alternately the prenomen and nomen. The latter gives the usual epithets “Son of Bast” and “The god, Ruler in Heliopolis”, as shown in the detailed illustration below. Below each cartouche is a nbw-sign. At the base of the block is an irregular projecting flange of stone, which may have been embedded in the floor in the original context. Height 49cm., width 130cm., thickness 72cm.
No. 12. Block with a very poorly-preserved relief showing part of the figure of a standing king with arms raised as he presents an offering. There are remains of a vertical register-line behind the figure. Height 44cm., width 93cm., thickness 36cm. Found on the north-west wall.

No. 13. A block with remains of an offering-scene in sunk relief. On the right are parts of the figure of a seated god, shown holding a sceptre in the right hand and an ankh-sign in the left. Opposite was a standing figure of a king presenting offerings, but only part of the arm of the figure survives on the block. In front of this figure are traces of a hieroglyphic inscription, written vertically. The surface of the stone has been eroded. Height 43cm., width 70cm., thickness 58cm. Found on the north-west wall.
No. 14. Rectangular slab carved with a relief on one face showing part of an offering-scene. A standing figure of a king on the left is shown offering an object represented by a baboon and a vessel, which has been tentatively identified as a clypsedra ($\delta b\mu$), but the deity to whom the offering was made is not present on the block. Below the hands of the king is the beginning of a vertical line of hieroglyphic inscription, bounded by a register line, commencing with the words: “Giving a clypsedra (?)....” The king wears a khat-headdress and royal beard. The quality of the carving was quite fine and although there is no name on the piece to identify the king, Sheshonq III would seem to be a likely candidate. A vertical register line runs behind the figure. Height 50cm., width 75cm., thickness 52cm. Found on the north-west wall. For discussion as to the identification of this offering, see Caminos 1974, vol. 2, 82, n. 4, with the older references there listed. Also Derchain-Urtel 1981, 31-2.
No. 15. A block with remains of an offering-scene in sunk relief, showing the upper part of the figure of a king presenting vases, although only one hand with a single vase survives on the fragment. The king wears a nemes-headress with uraeus. The surface of the stone has been damaged by salt action and the relief is poorly preserved. Height 35cm., width 85cm., thickness 68cm. Found on the north-west wall.

No. 16. A rectangular block with a sunk-relief carving of the head of a queen or goddess, although the lack of a distinctive divine headdress makes the former more likely. The figure wears a wig surmounted by a modius of uraeii, with an additional uraeus on the brow. Found on the north-west wall. The relief has suffered from erosion of the stone. At the top right side of the block are traces of a hieroglyphic inscription in two vertical columns, separated by register lines. Nothing is visible in the left-hand column, but at the base of the one on the right there is the sign for $t$ and a horizontal sign which seems to be the book-roll determinative (Gardiner Y 1). Height 35cm., width 64cm., thickness 58cm. Found over the external edge of the north-west wall.
No. 17. Block with part of a royal scene, showing the figure of a falcon with spread wings and a solar disk with pendant uraeus on its head. In front of the falcon there is a shen-sign and a wedjat-eye. The falcon is flanked by remains of the cartouches of Sheshonq III, the prenomen behind the bird and the nomen (very damaged) in front. The cartouches are surmounted by double plumes. This may be an example from a common scene in which the falcon is shown above the figure of the king, and it must have come originally from the top register of a wall before being taken for re-use in this temple. Height 41cm., width 87cm., thickness 36cm. Found on the north-west wall.

No. 18. A fragment of limestone inscribed with part of the cartouche of Sheshonq III. The line on the right, beyond the vertical register line, may have been part of a figure. The traces suggest the back of a royal figure with pendant bull’s tail. Height 30cm., width 33cm., thickness 11cm. Found on the north-west wall.
No. 19. A block in very poor condition with remains of three vertical columns of hieroglyphic text. On the left is a word ṛḥ with a plant-sign determinative. The central column contains the word ḥtpwt, “Offerings.” The marks visible in the photograph in the right-hand line are all the results of damage, no original signs could be detected. Height 46cm., width 64cm., thickness 36cm. Found on the north-west wall.
No. 20. Fragment, probably from a stela, with only the ends of two lines of hieroglyphs remaining. The upper line contains a reference to the Ma (Meshwesh) as an ethnic group (Yoyotte 1946). The lower line seems to have been a sequence of names, perhaps a genealogy. At the broken right edge there may have been a $s\dot{i}$-sign, followed by a small human figure hieroglyph. Below the latter are traces of what seems to have been the sign $\dot{t}$ which formed the first letter of the name Takeloth. After this comes another $s\dot{i}$-sign and human figure, and finally a second name ending in .....$pn$. The hieroglyphs of human figures preceding the names can only be introductions or titles, perhaps standing for $nmhw$ “freeman” (Wb II, 268). The content of this fragmentary text conforms with the twenty-second dynasty date of the other re-used blocks in the building. Maximum height 56cm., width 92cm., thickness 30cm. Found on the north-west wall, above its interior edge.
9. Miscellaneous work 2003-6

The following account contains reports on a series of small projects at widely-separated locations, as listed below:

1. At the small temple of Psamtik I (Temple C).

2. On the north side of the mound, where a typical Ptolemaic house was selected for investigation.

3. Building N3, a thirtieth-dynasty administrative structure beside the Amun-Temple.

4. The East Gate of the Inner Enclosure.

1. New details of the layout of the small temple of Psamtik I (Temple C).

The magnetic scanning carried out in 2005 included the area of the small temple of Psamtik I, and the magnetic map of this building showed some parallel anomalies extending between the naos area and the rear of the pylon (Fig. 9-1). These indicate the presence of a more complex foundation system than that previously suspected, with a substructure for a colonnaded approach to the naos similar to that known from the Saite phase in the main Amun-Temple. To check this hypothesis a small test-trench of 8 x 2 metres was set out on the position of the more western of the two apparent colonnade foundations. Although the original masonry of the foundation had been robbed out in antiquity, the location of the trench was quite clear from it having been refilled with mixed debris and mud (Fig. 9-2). On either side of the colonnade trench, the area of the temple foundation was filled with compact sand, enclosed at the edge of the temple footprint by mud-brick. This sand descended for 1.45m, at which point it continued below the subsoil water-table. A second trench further to the south detected the beginning of the eastern colonnade foundation-trench and the distinction between the sand filling of the naos area from that in the front part of the temple (Fig. 9-4). This difference had showed up on the magnetic scan, as the yellow sand in the naos had different magnetic properties from the compact green sand at the front. In the design of the foundation, the yellow sand in the naos had been held back during construction by leaving in place a section of the original earth between the two colonnade-trenches, as a barrier between the front and rear parts of the foundation (Fig. 9-5). The thickness of this piece of ground was approximately three metres. At the sides, between the colonnade-trenches and the sides of the temple, the same effect had been achieved by constructing retaining-walls of mud brick. The widths of both trenches serving as foundations for the colonnade were 2.55m. As noted above, these trenches now

Fig 9-1: Result of magnetic surveying around the temple of Psamtik I. The parallel foundation trenches for a colonnade or similar structure are very clear between the pylon and the rectangular naos area. In front of the pylon, an additional approach is evident from the pale anomalies at either side.
contain mixed fill of sand, mud and stone chips. Originally they would have contained massive stone masonry laid on deeper sand, like the larger foundations of the same design in the main temple of Amun. The disturbance was no doubt the result of ancient quarrying of the stone.

The magnetic scans also revealed some kind of processional approach to the pylon of the temple. A test trench cut in 1993 in front of the western wing of the pylon had revealed a quantity of broken limestone in this position, which it seems could have come from the destruction of some elements of this avenue. The length of this approach can be estimated from the magnetic map to have been about 35 metres.

An excavation trench was cut on the western side of the temple towards an adjacent anonymous temple detected by magnetometry in 2005 (see Chapter 4), to investigate the relationship between the two monuments. This long narrow trench exposed the lining of the Psamtik foundation, which was 2.34m thick. In the photograph in Figure 9-3 a trace of sand is evident along the inner face of this brickwork. The actual limit of the cut made for the foundation lay 90 centimetres beyond the end of the bricks. Further west were other brick walls which probably belonged to a level of late Third Intermediate Period or early twenty-sixth dynasty buildings overlying and obscuring the back of the anonymous temple.

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**Fig 9-2:** The western foundation for the colonnade, filled with redeposited material, passes through the surrounding sand of the main temple foundation. View looking west.

**Fig 9-3:** The western edge of the foundation of the Psamtik temple, from the interior. The plan on the left provides a key to the individual elements shown in this photograph.
Fig 9-4: The beginning of the western colonnade foundation-trench at the front of the naos area. The trench, refilled with mud and debris, runs from right to left (the front of the temple is to the left) and the right end appears as a curve owing to post-destruction collapse. The trench is cut through a block of the original pre-temple ground (in the foreground, darker colour), left by the builders to separate the yellow sand of the naos (on the right) from the greenish sand in the front part of the temple foundation (a narrow strip of this sand shows to the left of the original ground). Beyond the foundation-trench of the colonnade, the stepped feature is a mud-brick retaining wall intended to contain the sand of the naos, and behind this is the eastern limit of the entire temple foundation-pit. The stepped top of the brickwork is purely a consequence of excavating the eroded surface; the top would originally have been flat.

Fig 9-5: The same area as in Figure 9-4, viewed from the southern side, looking towards the front of the temple. Part of the colonnade foundation-trench is visible on the right, filled with redeposited brown mud and chips of stone, with the naos sand in the foreground and the area of original ground below the scale. The edge of the cut made by the trench through the pre-temple ground is very clear (by the right end of the scale). At the far side of this earth is the beginning of the green sand in the front part of the foundation.
2. Investigation of a typical Ptolemaic house on the north side of the mound

At the beginning of the 2003 season, one of the visible outlines of Ptolemaic houses on the surface of the northern slope of the mound was selected for test excavation, as an example of the many similar structures in the area. Only the foundation of the building was found to have survived, consisting of thick mud-brick walls with a few internal compartments. Work was extended gradually to reveal the entire building, which was 11.9m wide. The length of the structure from west to east was not completely preserved, but the surviving part was 11m long. The thicknesses of the exterior walls on the north and south were 1.85 and 1.07m respectively. The southern end of the house was occupied by a single, long chamber with a width of 2.28m. The original length of this room is unknown, since it ran into the destroyed area under a modern track, but the preserved part was 7m long. This chamber was separated from two others to its north by a wall 1.50m in thickness (see the plan in Fig. 9-8). Of these two chambers, one had been partly destroyed by erosion, but the other was intact and measured 5.35m long by 2.35m wide. A smaller, narrow chamber occupied the north-west part of the building, but as this compartment had a maximum width of only 80cm, it must have been no more than a structural void. From within it came a fragment of a pottery tripod stand, part of a coarseware pottery platter, a few small fragments of blue glazed faience and a single vertebra from a sheep or goat. At a deeper level, and probably in earlier ground below the foundation of the building, was a fragment from the shoulder of a Phoenician-Cypriote amphora. Since all the chambers were in the foundation of the building, there was practically no occupation-debris in any of them, and, of course, no evidence for the positions of the original doors. A few fragments of Ptolemaic pottery were the only items found in the larger rooms. The thick walls and earth-filled internal compartments within the foundation are typical of Late Period and Ptolemaic housing. Surface traces in the area suggest that a large proportion of this part of the site is covered with the remains of similar foundations from these periods.

Fig 9-6: View of the house foundation from the east. The walls of dark grey mud-brick are eroded to the contours of the ground.

Fig 9-7: The north-south wall in the centre of the foundation, from the south. There were no individual wall-trenches; the whole area of the foundation was sunk into the ground.
Fig 9-8: Plan of the Ptolemaic house foundation.

Fig 9-9: The south part of the foundation, from the east.
3. Investigation at Building N3, beside the Amun-Temple

To the south-east of the Temple of Amun lies the mud-brick building N3, the position of which was identified in 1997, when the adjacent building N2, situated further to the north-east, was excavated (Spencer 1999, 51ff.) The latter structure had proved to be a thirtieth-dynasty official building, destroyed at the end of the Ptolemaic Period. In 2005, part of the western side of Building N3 was investigated to check whether this might also be part of the thirtieth-dynasty administrative complex associated with the temple. The work was gradually extended to reveal a major wall of the building, running parallel to the side of the temple forecourt (Fig. 9-10). The part of the wall exposed had a length of 14 metres, but an additional part remained buried to the north-east. It was 2.09 metres thick and consisted of large mud bricks measuring 38 x 19-20 x 12cm. Along the north-west face of the wall, at a distance of between 85 and 58 cm, was a visible line in the ground which appeared to mark the position of the original foundation-trench for the construction of the building. The position of this is indicated on the plan in Fig. 9-14. The south-west end of the wall had been cut by a small pit (Fig. 9-16), in which a few pieces of limestone rubble were present, and the same part of the wall had also been damaged by rainwater. Some of the limestone pieces were almost certainly quarry debris from the nearby forecourt wall of the thirtieth-dynasty temple, which we know to have been constructed of fairly small blocks of undecorated limestone. Information about this wall was published in Spencer 1996, 38-9.

The south-west corner of the building was reached just within the limit of the excavation, where the wall turned to the south-east to form the end of the structure. The end wall was 2.8 metres in thickness, but part of its interior face had been damaged by later pitting. Inside this wall was a chamber with a width of 1.6 metres, the north-east side of which consisted of a second transverse wall extending out of the excavated area towards the south east. This wall was of exceptional thickness, measuring some 4 metres across.

At the north-eastern end of the building, a single layer of mud-brick had been built against the side of the main wall, from which a subsidiary wall extended towards the temple. This wall had a length of nearly 4 metres and was 1.48 metres wide (Figs. 9-11, 9-13). Its construction included the feature of a wide, gravel-filled join through the centre of the brickwork, a practice attested in some other brick buildings of the Late Period. At the north-west end of this wall there was almost certainly a doorway originally, one side formed by the brick wall and the other by the stone wall of the temple forecourt. Of course, all the masonry of the temple wall had been quarried out in antiquity. In the corner between the brick wall and the adjacent thin layer of mud-brick were fragmentary remains of some transport amphorae, including local copies of Phoenician jars (Fig. 9-18) and of a basket-handled amphora of Syrian type, dating from the fourth century BC (Figs. 9-12 and 9-17). For a discussion of this kind of vessel, see De Rodrigo 2004). Fragments from other pottery vessels found associated with the building also dated from the end of the dynastic period. The area closest to the side of the temple had been cut by some later pits, which contained a few sherds of Ptolemaic date. This suggests that the history of the building was similar to that of the nearby Building N2, dating from the thirtieth dynasty and destroyed at the end of the Ptolemaic Period.
**Fig 9-11:** View of the main wall from the north-east end. The 1m scale lies on top of the single layer of brick which lay between the main wall and the smaller cross-wall extending towards the temple.

**Fig 9-12:** Shattered basket-handled amphora as found lying above the angle of the brickwork at point A on the plan overleaf. This is the corner just below the right end of the scale in Figure 9-11, above.

**Fig 9-13:** The wall which runs towards the temple. The height of the near end has been reduced by pitting, but there was probably a finished jamb at a doorway with the stone enclosure wall of the thirtieth-dynasty temple forecourt.
Fig 9-14: Plan of the excavated area showing the main wall and associated brickwork.

Fig 9-15: The corner at the south-west end of the main wall, with the limestone rubble in the small pit. The bricks at this end of the wall (foreground here) had dissolved to mud and subsequently dried again, a process which creates a characteristic pattern of cracking.
Fig 9-16: The rubble-filled pit in the south-west end of the wall.

Fig 9-17: The upper part of the basket-handled jar, showing the diagnostic rim and handle scars on the shoulder.

Fig 9-18: Local copies of Phoenician jars found beside Building N3.
4. East Gate Excavation

The magnetic mapping of the 2005 season revealed the existence of a gate in the south-eastern side of the twenty-sixth dynasty enclosure wall, situated about 180 metres from its southern corner. This location was tested by excavation in the following year and the position of the gate was soon confirmed. The area excavated was extended to 14 x 6 metres, within which the opening of the gate occupied 6.9 metres (Fig. 9-22). The brickwork of the southern jamb was intact at its exterior end, with a rebate part-way along its length, where the edge stepped back by a distance of 46cm (Fig. 9-19). The counterpart of this feature had also been present in the jamb on the north side, but most of it had been cut away in a later pit (Fig. 9-21). The preserved parts of the gate described above lay within about half the thickness of the enclosure wall, that is, within about 6 metres from its exterior face. The inner part had all been destroyed by later pitting, probably associated with Ptolemaic industrial activity in the area, so no traces of the interior angles of the brick jambs had survived. In the Ptolemaic fill which had accumulated in this area, a fragmentary terracotta female figure, probably representing the goddess Aphrodite, was found (Fig. 9-20).

Within the opening of the gate was a sand-bed foundation, the highest surviving part of which was preserved to a relative level of 114, which is 37cm below that of the top of the north jamb. Beside the latter is a circular pit which has cut a short distance into the jamb, destroying the rebate on this side of the gate (Fig. 9-23). The investigation of the underlying sand was made by excavating through the base of this pit and also the adjacent area in the corner beside the jamb. The base of the sand continued down into the subsoil water level below a relative level of -40. This sand, contained by the jambs at the sides and by retaining walls of mud-brick at the front and back, would have served as the foundation for the stone masonry of the gate, all of which had been...
Fig 9-22: View of the gate from the south, with the south-west jamb in the foreground.

Fig 9-23: View of the gate along the line of the wall from the north-east, with part of the north-east jamb in the foreground, cut by a circular pit. In the base of this, on the left side, some of the original sand-bed of the gate can be seen under the brick blocking of the passage.
removed in antiquity. Part of the brick retaining-wall of the foundation at the south-east was found at a low level. Following the ancient removal of the stone, the empty axis of the gate became filled with accumulated fill and mud, which overlaid the remains of the sand-bed. As the sand had been quarried out to various levels in different parts of the gate, the thickness of the overlying fill varied considerably. The fill was levelled off at a later period and covered by a thin layer of mud brick, one or two courses in thickness. It is likely that this brickwork dates from the thirtieth dynasty, when a new enclosure wall was constructed outside the older one. The bricks used in this blocking were mostly of large size, with lengths between 42 and 48cm, but there were a few smaller ones only 33cm long.

To the south of the gate, the wall had been cut by a very large pit with a diameter of 16.5 metres (Figs. 9-24, 9-25). This seems to have been cut in Ptolemaic times, probably to quarry mud-bricks of the enclosure wall as earth for use in pottery manufacture, as there is much evidence on the surface for industrial activity. The pit was dug out to a depth of 1.10m and narrowed as it descended, but the bricks of the twenty-sixth dynasty wall were still visible in the sides and floor of the pit. This confirmed that this section of the wall had been founded at considerable depth, as elsewhere around its perimeter.

Fig 9-24: View of the gate along the line of the wall from the south-east, with the large Ptolemaic pit in the foreground. The surface trace of the wall can be seen continuing towards the high mound.

Fig 9-25: (opposite): Plan of the East Gate.
10. A foundation platform of the Thirtieth Dynasty

The final project of the 2008 season at Tell el-Balamun was the investigation of an area north of the temple of Amun, where certain features had been detected by the magnetic survey. The magnetometry had revealed a rectangular building with a series of pale anomalies along its northern side, resembling a row of pits or chambers (Fig. 10-2). Excavation soon showed that the effect was actually the consequence of a large area of ground of low magnetism traversed by remains of brick walls and more compact mounds of earth at intervals, the latter having higher magnetic value. These upper-level features registered as darker bands across the underlying non-magnetic (pale) deposits, to create an illusory impression of pale chambers in a dark ground. The underlying fill had been extensively cut by pits in all directions and a quantity of limestone chips was present, so the low magnetic value of the ground is not surprising (Fig. 10-1). The brick walls in the upper layer had also been cut by pits of later age, so that no connected plan remained. Where the ground had escaped being cut by pits, the earth contained pottery fragments of early Third Intermediate Period date. This pottery was recovered from a high level, no more than 25cm below the present surface of the ground, and its presence suggests that the late Ramesside to early Third Intermediate Period surface level found in 1998 just inside the north corner of the New Kingdom enclosure wall of the Amun-Temple continues into this area outside the wall (Spencer 1999, 60ff.).

One of the pits in the area was found to contain a concentrated mass of marine shells to a depth of 50cm, most of them cockle-shells, with a few of another species (Figs. 10-3, 10-4). The shell
types are Petunculus and Cerithium (Fig. 10-5). The most probable origin for these is that they were sieved from sand brought from the coast for use as foundation filling. This possibility is supported by the presence of sand mixed with the shells in the pit, and also by the close proximity of the sand-filled foundation-pit for the Late Dynastic Mammisi of the Amun temple, which lies only a few metres from where the shells were discovered (Spencer 1999, 56-7). The brick wall beside the shell deposit, visible in Figure 10-3, was between two and three courses in depth. Beyond this wall was more pitted fill containing collapsed brick and limestone fragments. This area was traversed by another surface-level brick
wall (Fig. 10-9). To the east of this, the fill was tested to greater depth, resulting in the discovery of an angle of mud-brick walling some 70cm below the present surface level. The fill within this angle was very uniform right down to the subsoil water table, and consisted of empty fine silt. It may have been a substitute for sand used in the foundation for some vanished building, and the brickwork may represent one corner of the retaining-wall. In view of the poor preservation of these remains and their proximity to the subsoil water, they were not investigated further.

Having obtained an explanation for the magnetic anomalies in the region, attention was next turned to the substantial building immediately to the south, the outline of which itself showed as a faint grey rectangle on the magnetic map. The remains of this building were found immediately under a surface deposit of mud, compressed by vehicle traffic. The majority of the structure consisted of a solid mass of mud-brick, of which a depth of only 54cm was preserved above the base of its foundation (Fig. 10-6). The building measured 14.9 x 9.8 metres and was aligned at right-angles to the axis of the temple of Amun. The brickwork had been eroded to a low level, and it appears to have been the foundation for a small building, which, from its position and orientation, was probably a chapel dependent on the temple. In the front part of the brick platform were two small compartments, apparently open to the front by narrow doorways about 90cm wide.
The door on the southern side led by a passage 3.25m long into a chamber, which was 2.43 x 1.48 metres in size. Further north, another door gave access by a similar passage to a chamber measuring 2.30 x 1.85m. (Fig. 10-7). The limited depth of the brickwork remaining in the building meant that the excavation was almost at the level of the floor of these chambers, so the walls could be defined only to a height of a single course of bricks (Fig. 10-8). The south-west side of the platform was found to be directly in contact with the sand-bed of the Mammisi, a feature investigated in the 1998 season (Figs. 10-8, 10-10). There can be no doubt that the sand-bed and the brick platform were constructed at the same time, most probably as part of the reconstruction of the temple under Nekhtnebef. Along the north-east side of the platform the foundation-trench in which it had been built was detected, cut into the deposits of the early Third Intermediate Period.

The brickwork on the south-west side had been integrated into the retaining wall of the sand-bed of the Mammisi, which continued beyond either end of the structure. The mud-brick around the perimeter of this sand bed was detected in the work of 1998 but the presence of the brick platform was not suspected at that time, not least because saturated ground caused by the rainy conditions of that season precluded any expansive investigation.

Fig. 10-9: Plan of the brick platform and the pitted area on its north-eastern side.

Fig. 10-10: Sand of the Mammisi foundation against the south-west side of the foundation platform.
Most of the surveying for the magnetic map of the temple enclosure at Tell el-Balamun was carried out over three seasons from 2005 to 2007, as a collaborative project between the Polish Center for Mediterranean Archaeology of the University of Warsaw and the British Museum. The project was led by Tomasz Herbich, assisted by Dawid Święch and Artur Buszek, (Herbich and Spencer 2006, 2007, 2008, 2009). Poor weather with rain prevented the mapping of about two hectares of low-lying land to the west of the main temple in 2007, but more than half of this was mapped in 2008.

The magnetic method was the choice for the prospection in view of the magnetic properties of the expected features. The buildings were constructed mostly of bricks made of Nile silt, a material characterized by considerable magnetic susceptibility. Stone structures, if made of non-magnetic limestone, should produce a strong negative contrast compared to the silt which is the main component of the tell; if made of rock of volcanic origin (granite, basalt), they should appear as anomalies of high amplitude of magnetic values. The magnetic method is very efficient in tracing remains of industrial activity (kilns) as well as concentrations of pottery sherds, ashes, hearths, slags and ferromagnetic (iron) objects (Gaffney, Gater 2003). The efficiency of this technique for surveying archaeological sites in the Delta has been established during the last decade by research in Qantir (Pusch 1999; Becker et al. 2000), Tell Farkha (Herbich 2002, 2003), Tell ed-Daba (Bietak, Forstner-Müller and Herbich 2007, Forstner-Müller et al. 2004, 2007, 2008), Buto (Hartung et al. 2003; Herbich 2004) and Sais (Wilson 2003, 2006). The whole area of the temple enclosure was investigated, the sides of which measure about 450 x 400 metres. The prospection was accomplished with Geoscan Research FM-36 fluxgate gradiometers (in 2008: FM-256). One of the instruments was provided by the Programma de Estudios de Egiptología (Consió Nacional de Investigaciones Científicas y Técnicas, Buenos Aires) on the basis of a co-operation agreement with the Polish Centre of Mediterranean Archaeology of the University of Warsaw. The measuring grid was 0.50 by 0.25m, that is, measurements were taken every 0.25m along lines traced 0.50m apart, applying the parallel mode (the instrument moving in one direction only). The measured units were 20 by 10m. (in 2008: 20 x 20m). The results were presented s grayscale magnetic maps, that is, maps of changes of intensity of the Earth’s magnetic field.

The excellent results achieved by the magnetic survey have revealed a wealth of information about the disposition of structures in and around the temple area. Some of these were known from earlier seasons of excavation but the existence of others was previously unsuspected. The great enclosure walls of the complex had been detected in 1991, but only in widely-separated trenches cut at intervals around the perimeter. The magnetic map has revealed the remainder of these walls and has also confirmed that they were constructed in separate panels of brickwork. In the outer wall, the projecting panels are about 18m long and the recessed ones, 12m. The survey has also shown that the outer wall disappears from the magnetic map a short distance to the south-west of the gate in its north-western side, owing to all the brick courses having been eroded away to below the original foundation level. This indicates that the wall was built with only a shallow foundation on land which was already elevated because of the gradual rise of the ancient mound. The same situation was noted previously on the south-east side of the enclosure, where large parts of the brickwork of the outer wall have been eroded away to reveal older buildings beneath. These structures probably date from the Saite and Third Intermediate Periods. Continued loss of the brickwork through erosion has been evident in the years since the expedition began work at the site in 1991. The existence of the gate in the south-east side of the inner enclosure wall was unknown until found by magnetic mapping in 2005. The subsequent excavation of this gate is described in Chapter 9. Since the inner wall shows less clearly
on the surface than the outer wall, the magnetic survey has provided valuable information on the alignment and thickness of this wall at various points. The main entrances into the two successive enclosures were at the north-east, the gate in the earlier wall being quite narrow but the gap in the later wall much wider, intended for a monumental pylon which was never completed. The route to the temple of Amun from these gates was later overbuilt by the Roman street. The latter road has been mapped for close to 200m. Its existence was recorded in earlier excavations (see above, Chapter 1 and Spencer 2005).

The numerous temples within the enclosure are all visible on the magnetic map. Their outlines are so distinctive owing to the concentrated mass of sand (of low magnetic value) in their foundations. The details of the layout of the main temple of Amun, identified by the excavations of previous seasons, are all confirmed by magnetometry, especially the narrow colonnade foundation in front of the pylon of Sheshonq III. In the naos area of this temple a number of oval shaped high amplitude anomalies appear on the magnetic map, indicating material of high magnetic value, probably blocks of basalt like the ones found in the excavation of the south corner of the temple in 1995 (Spencer 1999, 27, pl. 29). The position of the foundation for the huge Saite pylon in the Amun-temple can be detected on the magnetic map with careful observation; the edges of the foundation are obscured in places by our own older excavation trenches, which appear as rectangular features characterised by low magnetic values. With the advantage of hindsight, it would be better in future work to map a site magnetically before
any excavation so that all features may be seen without any trenches to obscure individual points.

A similar design feature to that of the Saite phase in the Amun-Temple - the narrow colonnade behind the entrance pylon - was revealed in the small temple of Psamtik I (Temple C) and seems to be characteristic of Saite temple architecture, another example being known from Tell Belim (Spencer 2006, 356-7). The features revealed by magnetometry in Temple C were checked by excavation in 2005 (see Chapter 9). It appeared that the approach to the temple of Psamtik was more extensive than previously supposed, to judge from two parallel anomalies of lower magnetic value which showed up in front of the pylon. These seem to be structures along the sides of a processional way leading to the temple. A test-trench made in 1993 had actually intercepted the western feature, but all that was found in the small area excavated was some broken limestone and, without the advantage of the magnetic plan, there was no way to interpret the significance of this (Spencer 1996, 49-50). The magnetic result suggests that the stone debris may have been part of a stone-built avenue or similar construction. If so, this approach appears to end in an empty area to the west of the gate detected by the magnetic survey in the inner enclosure wall. The end of the avenue is marked by an anomaly of slightly higher magnetic value with an orientation rotated about 12 degrees east relative to the pylon of the temple of Psamtik, but to determine the nature of this feature would require further investigation (see Fig. 9-1 in Chapter 9).

Due to the sand filling of the foundation, the subsidiary temple of Nekhtnebef (Temple B) also has a very clear magnetic picture. Around the rear of this temple is

Fig. 11-2: Indication of a buttressed brick wall cut by the rear of the subsidiary temple of Nekhtnebef (Temple B). Grid lines every 40m. Dynamics -10/+15 nT.

Fig. 11-3: The south corner of the enclosure showing the concentration of kilns and buildings between the two enclosure walls. Inside the corner of the inner wall is the massive Saite casemate foundation, overbuilt at the north-west by a later, smaller building of similar design. The feature north of this (by the red arrow) is produced by a surface dump. Grid lines every 40m. Dynamics -10/+15 nT.
an interesting remnant of a mud-brick wall with bastions on the exterior. A pale trace of this was visible on the surface, but it was insufficient to give a true idea of what lay below. The magnetic map shows this wall cut by the back of the temple foundation, with parts surviving on either side (Fig. 11-2).

The existence of Temple D, a brick-built monument adjacent to the small temple of Psamtik I, was unknown until found by magnetometry. The outline of the foundation-pit shows faintly on the map, but is unmistakably a temple (see Fig. 4-1 in Chapter 4). It is oriented directly to the north. Excavation of this building, described above in Chapter 4, revealed remains of a mud-brick pylon, the façade of which was approached between screenwalls, which also showed on the magnetic map owing to the sand in their foundations. The rear part of the building was very destroyed but part of the side of the foundation-pit was identified. This monument predated the temple of Psamtik and must date from some time in the Third Intermediate Period.

The magnetic survey was responsible for the discovery of the foundation for the barque-station (Temple E) in front of the subsidiary temple of Nekhtnebef. The monument shows on the map as a negative square-shaped anomaly, indicating the weak magnetism of the limestone in the foundations below the ground (see Fig. 11-2). The area in which this building stood was distinctly unattractive for investigation, consisting of a muddy hollow with patches of rough vegetation, with all the appearance of having been extensively pitted in the past. In fact it proved to contain more surviving stone architecture than any of the other temples excavated at the site. The excavation and study of the building is described above in Chapters 5-8.

Other areas of the survey produced evidence for many mud-brick structures and for industrial areas with pottery kilns or similar manufacturing facilities. To the east of the small temple of Nectanebo I lie a series of industrial features, such as kilns, marked by anomalies of oval shape, of high values of amplitude of the magnetic field intensity (which show black on the map). An industrial zone seems also to have developed between the two enclosure walls on the southwest side, where a series of buildings is visible accompanied by kilns or similar structures (Fig. 11-3). The alignment of these buildings between the walls suggests that this part of the Saite wall was still standing to some height even after the
construction of the thirtieth-dynasty enclosure. This would agree with the modern contours of the ground, where both walls on this side are embedded in a high ridge of debris.

A scatter of oval high-amplitude anomalies, between two and three metres across, probably correspond to furnaces; concentrations of these are potential evidence for industrial operations of various kinds. The biggest clusters lie in the northern and eastern corners of the sacred area, but others are distributed more loosely across the site. The concentration in the eastern corner of the enclosure lies inside the angle of the wall of the twenty-sixth dynasty, which suggests that it predates the destruction of this wall (Fig. 11-4). In other locations, such as on the north-west side of the enclosure, dark anomalies from kilns are superimposed on the line of this wall and can only have been created after it had been levelled (Fig. 11-6). Single or double furnaces can also be observed at the north-eastern edge of the entrance gap in the wall of the thirtieth dynasty and on the outside of this wall, to the northeast of the enclosure. In some places the presence of industrial-type anomalies corresponds to visible surface traces of burnt earth or the presence of slag. In a few cases the shape of groups of high-amplitude anomalies seems to reflect concentrations of ashes and slag filling a room, with outlines approximating a rectangle. They could constitute evidence of a workshop of some kind, perhaps for metal production (Fig. 11-4).

At some points the magnetic map shows evidence of structures on multiple levels, as, for example in the building described as the Fort Annexe, excavated by the expedition in 1993 (Spencer 1996, 59-62). At the time of excavation, the detection of the southern part of this building proved very difficult. The magnetic scan now reveals that this part of the building is completely overbuilt by a later structure of rectangular shape, with its longer dimension aligned from the north-west to the south-east (Fig. 11-5). The presence of this second level of building has proved far simpler to detect on the magnetic scan than through actual excavation, and again shows the value of magnetic...
Another example of multi-level construction occurs at the north-west side of the fort, where a later casemate foundation of smaller size partly overlies the Saite building (above, Fig. 11-3). A compact suburb of Ptolemaic houses was identified in the north-eastern part of the sacred area, south-east of the Roman road. One house in this suburb was excavated in 1994 (Spencer 1996 72-3, pl. 50). The greater clarity of the mapped image of this house is due to its having been excavated already (Fig. 11-7). The magnetic map provides data for reconstructing the street grid in this district. Buildings (of unknown date, but with the same orientation as structures from the Ptolemaic period) can be seen also to the north-west of the Roman road. Narrow linear anomalies of high amplitude on an orthogonal plan and featuring a similar orientation as the neighbouring buildings could correspond to shallow-lying drainpipes of clay or, but less likely, to narrow partition walls constructed of baked brick (Fig. 11-7).

Surface features occasionally appear in the magnetic map. One example is a long ridge of spoil at the rear of Temple D, which appears on the magnetic map as a feature of low magnetic value (see above, Fig. 11-3). In the area of the Roman street, the presence of a surface water-gully is also apparent on the magnetic scan as a curved, narrow negative anomaly (Fig. 11-7). A surface deposit of drift dust shows at the north-west side of the outer enclosure, across the line of the wall at the point where it disappears from the map. Although the survey was not continued very far beyond the limit of the great enclosure, those areas which are included outside the thirtieth-dynasty wall show some interesting differences. At the north-east and north-west the exterior of the wall is embedded in high stratified levels of urban occupation, Late Dynastic against the north-east wall and Roman at the north-west. The increasing proportion of highly magnetic areas is probably the result of higher concentrations of settlement material - pottery fragments multi-level buildings and ovens - in these domestic contexts. On the north-west there is also fired brick among the Roman structures. The area outside the south-east side of the enclosure appears different, with clearly-defined buildings, because here erosion and local traffic has stripped much of the ceramic debris from the surface.

**Fig. 11-7:** The central north-east part of the enclosure, showing the Ptolemaic housing (between the red lines). The limit of this to the north-east seems to have been the inner enclosure wall. To the left the central portion of the Roman street can be seen. The white shape on the street line is the excavation area ‘Location 2’ of 1994. Just north-west of this are some anomalies of high amplitude in rectilinear patterns (marked by the blue arrow) which may represent ceramic drains. The curved linear anomaly of low value marked by the red arrow is a rainwater gully on the surface.