

Excavations at Amheida, 2006¹

The site of Amheida (Dakhleh Oasis Project site no. 33/390-L9-1) lies a few kilometers south of the renowned Islamic mud-brick village of El-Qasr, in the northwest part of the Dakhleh Oasis. Amheida was the most important town of northwest Dakhleh in antiquity.

The excavations of Columbia University, as part of the DOP, were begun in 2004 after preliminary survey work in 2001 and 2002. Excavations that year focused on a late Roman house (designated Area 2.1). In 2005, an expanded team continued in that area and also began the excavation of the site of the Temple of Thoth (Area 4.1) and that of a less wealthy house in a northern part of the site called Area 1.3. During the 2006 season, work continued in all three of these areas, with excavation being completed in Area 1.3. In addition, conservation work was carried out in Area 3, the pyramid located near the road that runs to the east of the site, aimed at stabilizing this highly visible monument, the only largely standing pyramid off the Roman period in Egypt. The following sections describe work in each of these sectors during the 2006 season, which lasted from January 7 to February 26. They have been written by the supervisors and specialists indicated in note 1 and edited by Roger Bagnall and Paola Davoli.

Area 2.1

This season the work mostly concentrated on the northern side of sub-area 2.1 in an area of approximately 14.2 x 8.4 m. Sub-area 2.1 constitutes the Late Roman villa and its immediate surroundings. At the northern end of the *insula* in which the villa is located, a large walled space already tested in the previous season was largely excavated (room 9). The adjoining rooms 10 and 15, forming part of the northern part of the *insula* were also partly excavated. Rooms 16 and 17, forming the corridor from the central part of the villa to the north were investigated as well. Furthermore, two test trenches were dug in the southern part of the villa: one through floor level of room 1, the main painted room, and one on the suspected location of the southern wall of room 14, the probable boundary between the villa under excavation and its southern counterpart.

This year's excavations have presented a more complex picture of the villa and its surroundings than could be guessed from the results from previous campaigns. Especially the northern part shows that various building phases are present in the area, both reused in the architecture now still standing and buried under the floor levels from the last periods of occupation present at this part of the site.

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Room 9

Room 9 is a large walled open space connected to the villa. From the surface no apparent working door openings are visible. Only in the northern wall a blocked up door is discernable. During the previous season part of a circular wall with associated white gypsum floor was discovered in a small test trench in this room. Furthermore, at a higher level a curved wall was discovered, apparently forming a containment wall for dump material.

The main goal for this season's excavation of room 9 was to examine its relation to the villa to the south and to gain insight in the function of the circular walled structure. From the excavation it has become clear that the space now termed room 9, an area with maximum dimensions of 9.7 x 6.9 meters, and the area beyond it was intensely used during various occupation phases. This is apparent in the different floors present at various levels in the room, the walls that belong to several building phases and some pits, clearly cutting architecture. The north wall of the room, for instance, shows at least five building stages, one either being built over or cutting the other. From the various walls excavated under the last level of occupation, it is clear that space was divided quite differently in earlier periods, as several north-south oriented walls clearly show (F119, F125, and F108). One of these walls (F108), or at least its foundation and several courses above that, have been erected in reused baked brick. This wall abuts the southwest running wall feature F131, part of the west wall of room 9 of which the foundation and several courses above it are also constructed in baked brick. It is clear that these walls belong to an early phase of building in (mainly reused) baked brick in the northern part of sub-area 2.1, including some walls in room 15 and most probably also several walls outside of the excavated area. The other walls in room 9 are constructed of mud brick. From the architectural evidence in and under the room it is thought that there are at least three to four main building phases present in this sector, probably all dating to the Roman period. The east wall and the north wall of room 9 are amongst the latest additions in the area.

The main, and most striking feature excavated in the area of room 9 was structure F93/F88. It is formed by a circular mud brick wall (F93), still standing to a height of 1m, with a diameter of approximately 4.5m and a partly collapsed white gypsum floor at the bottom of it (F88). The floor is laid out over a surface of large square baked bricks measuring approximately 60 x 60cm covered with a layer of mortar. Underneath the floor a large hollow space is present, now largely filled with rubble. A small test trench through the middle of F88, in the collapsed part of the floor, revealed that this hollow space is at least 75cm deep. The floor above the hollow space seems to be supported by stacks/pillars of baked bricks.

Wall F93 is not complete; on the north side it has been cut by one or more large pits. Most of the wall is however still in place. The outside of F93 is covered in mud plaster. The inside was plastered with white gypsum of which many patches remain. Striking features within the wall are three vertical channels, two of which still hold pottery pipes (*fistulae*) which reach below the level of F88. In at least one of these

pipes soot is present, indicating that they might have functioned as channels for smoke. It is thought that four of these channels were present, distributed more or less evenly through the course of the wall. The bottom of the wall shows clear signs of erosion and repair, indicating intense use.

Probably during a second phase of use of the circular structure, a layer of compacted mud was laid out over the white gypsum floor. Several baked bricks and mud bricks were placed along the inside of the wall to act as a support for wooden planks/beams. On top of those beams, approximately perpendicular to them, wooden panels or planks were placed and secured with iron nails. It seems that together they formed a wooden floor covering the whole area within F93. The wood itself was no longer present. Brown humic sand where the wood had decayed, imprints in the layer of compacted mud and the iron nails, however, clearly indicated the location of the wood.

On top of this level several complete bowls, pots, an oil lamp and fragments of two (?) glass vessels were found imbedded in sand. Together with a ceramic plate (small slab) and an ashy patch they constitute the last phase of use of the circular structure before it was turned into a dump area.

After the structure had been fully filled with dump material, mainly pottery and mud brick debris, a layer of mud was laid out over it and over the whole eastern part of the room. This now formed the new level of occupation, contemporary to the use of the walls which form the boundaries of room 9.

The primary function of the circular structure is not yet understood. It seems, however, probably to have been used for industrial purposes. F93/F88 might be contemporary to the earlier phases of the villa or even earlier. One of the boundary walls of what is now termed room 9 seems to be built on top of F93.

Room 10

This room is located next to room 9, only divided from it by two short stretches of wall. The dimensions of the room are 3.4 x 3.7m. Wind blown sand was cleared from the room to reveal a debris layer and a rectangular mud brick structure, with unknown function. The lack of collapse and diagnostic bricks show that this room was not roofed. One floor level has been encountered.

Room 15

A most interesting room was excavated to the west of rooms 9 and 10. Room 15 is rectangular with the following dimensions: 2.7 x 6.8m. From the excavation it is clear that the room must have served different purposes at different times and that it was heavily remodeled during the various phases of use.

During one of the earlier phases the room could be entered from the north through a large doorway. The walls of that phase were covered in white gypsum plaster which was re-applied at least once. On the northern half of the east wall five columns of Greek writing in red paint are visible at approximately, or just under eye height above the initial floor level. Several of them have been deliberately, but not fully erased in antiquity. Another column of more or less totally erased Greek writing

is found on the northern part of the west wall of room 15. It seems that the texts and thus probably also the room had an educational purpose (see report on Epigraphy and Papyrology). The north and east wall of this room are set on a baked brick foundation which can be connected to at least one of the walls with baked brick foundations in room 9. Associated with the walls in room 15 and most likely also to the phase in which the walls were used for writing, is a gypsum floor which has been laid out over a baked brick base. On top of this floor a later compacted mud floor was found.

During the later phase of use of the room the doorway in the northern wall was blocked. A staircase, a landing and an east-west orientated wall were erected in the southern part of the room. Beam holes were cut in both the latter wall and in the north wall (including the blocked doorway) and a flat roof was erected running approximately one meter above floor level creating a hollow space underneath and a walled, probably uncovered space above. This roof was made of large beams and palm rib and was covered with mud. Large blocks of thick mud with impressions of beams and rib have been found only in the southern part of the room, indicating that this part might have been the most heavily constructed part. The roof was supported from underneath by several piers/pillars of stacked baked bricks, - slabs and mud brick. The hollow space created underneath was most likely utilized for storage, as is attested by various more or less completely reconstructable vessels found along the west and north walls of the room.

The roof itself could be entered from the villa through rooms 17 and 16 and the staircase leading from 16 into room 15. At least during the later phase of its use, thus, room 15 was part of the villa.

Rooms 16 and 17

These rooms now form the corridor from room 2, the central courtyard, to room 15. Room 16 is formed by a late addition of two bonded walls which blocked passage into room 9. It is thought that room 17 once opened into 9. Both rooms have been excavated to floor level which mainly meant removing windblown sand. In 17 an arch and a vault are still found to be in place.

Test trenches rooms 1 and 14/18

Two test trenches were dug this season. The first was dug in the southeast corner of room 1, penetrating the levels under the floor uncovered in the 2004 season. The compacted mud floor was several cm thick and was placed on a series of preparation layers down to the bottom of the foundation. No older floor layers were discovered.

In the test trench between rooms 14 and 18, excavated to locate the dividing wall between two probable house units, a largely complete collapsed vault was uncovered. A dividing wall was not found. The vault was left in place to be preserved until the coming excavation season.

Area 4 (Temple)

Area 4.1

Area 4.1 has already been investigated during the 2004 and 2005 campaigns. In 2004 only a preliminary clearance of the squares AP49 and AR51 (10 x 20 m) took place. The first excavation was carried out last year in the squares AP49, AQ49 and AR49. This season we first focused on square AP50 (directly to the south of AP49). During the work, we extended the area of excavation and added the northeast quarter of AQ50. Also AP49 and the south easternmost portion of AQ49 were reopened. The surface of AN50 was cleared as well.

The aim of this season's work was to clarify the layout of the temple and to get a better understanding of the underlying layers in which the many pits (described in last year's report) have later been dug.

Surface

The surface layer in all the squares (DSU60 and DSU91) consists of windblown sand and is mainly characterized by the presence of scattered sandstone blocks, lumps of gypsum mortar, mud brick fragments, grinding stones (probably dating to the Old Kingdom) and a great amount of pottery sherds. The pottery is completely mixed and dates from the Old Kingdom to the fourth century AD (see the report on pottery).

Pits

After the removal of the surface layers (DSU60 and DSU91) and sub surface layers (DSU61 and DSU99) a number of pits appeared. This is in accordance with last year's experience. During this campaign at least 18 pits have been discovered. They differ in shape, depth and dimensions, but in general they are round, oval or elongated. Some pits are very large and irregular (F11 and F19 for example). They are the result of several intersecting pits. The southwest part of AP50 is still covered by sand, although circa 60 cm of windblown sand has been removed. It seems that we are dealing here with more pits than the two now assigned (F37 and F39). Since we continued in three pits already opened in 2005 (F02, F11, F19), the total number of these features excavated this season is 21.

Since most pits cut one another, the pits in area 4.1 have obviously been dug at different times. Furthermore, part of the sediment that was thrown away while digging has been found at the bottom, in the fill, or on top of surrounding pits. As a result we sometimes encounter a mixed loamy deposit with a lot of pottery sherds and mud brick debris, as well as deposits in reversed stratigraphy.

After the pits had been dug, blocks of temple architecture have collapsed into the pits. This suggests that the temple itself (at least the Roman temple) must have been built on top of the layers in which the pits were dug. Some blocks have building marks (red and black lines, crosses and the so called 'fish' marks) or chisel lines.

One complete column drum (FN 22) and six large fragments of column drums were found. Except for one drum fragment, all drum fragments and the complete drum are located in the pits F02, F26 and F27 (in the south west of AP49, the north west of AP50 and the north east of AQ50), and form a cluster with the column drums found in 2005. One column drum fragment was uncovered in the northeast part of AP49. It was horizontally split. This facet suggests an intercolumn wall.

It is remarkable that the collapsed temple blocks are all concentrated in the northwest part of this year's excavated area, in accordance with the large concentration of collapse found in last year's squares. A number of decorated blocks and fragments of blocks fit together. Not only blocks that were found near each other in the same deposition or pit can be joined, but also blocks that were situated further apart in different depositions or pits.

In the southeast part of this year's excavated area we found only a few undecorated sandstone blocks near the surface. Instead, we encountered a lot of mud bricks (sometimes still bonded) and mud brick fragments. These originate from collapsed mud brick walls. Among the bricks we also found a number of fragmented vault bricks. These findings suggest that we are just outside the temple, where probably some mud brick buildings once stood.

In the center of AP50, outside the cluster of collapsed blocks we found an important block, FN 31. This is a large *cavetto cornice*, probably the lintel above the main entrance of the temple. Near this lintel, we found a dark sandstone fragment with a circular indentation, FN 56. In relation to the occurrence of the lintel and the supposed entrance, this object might be interpreted as a pivot hole of a door.

Stratigraphy

Thanks to the occurrence of one very deep pit (F32) in the east of AP50 we were able to examine the stratigraphy and the layers in which the pits have been dug. F32 is filled by DSU78, a very clean layer of windblown sand. Three meters of this DSU have been removed, but still we did not reach the bottom of the pit. It continues for at least another meter.

The lower two meters of the sequence visible in the interface of F32 consists of a dark grayish brown loamy deposit with mud brick debris, many ash pockets and a lot of pottery sherds (DSU97). All the sampled pottery seems to date to the Old Kingdom. This thick layer, the lower elevation of which has not yet been reached, seems to be an accumulation of occupation layers. We might be dealing with a dump area that was in use during the Old Kingdom. Perhaps a bakery was nearby, since DSU97 has many ash pockets and since bread-molds and grinding stones are abundant in the whole area.

Above this thick layer, DSU95 and DSU94 were recognized. These are the first layers that we could track throughout most of AP49 and AP50, and the first depositions that are most probably uncontaminated. DSU95 is visible on the bottom of many pits, while DSU94 (above DSU95) has been cut by almost all pits. DSU95 is comparable with DSU97, but is brown in colour, has few ash pockets and less pottery.

DSU94 is a thin greyish green layer of circa 10 cm. Although the elevations differ slightly throughout the square, DSU94 forms an (relatively) undisturbed occupation level. Very mixed and disturbed sediments cover DSU94. In the east and southeast a mud brick collapse is present. This collapse (DSU93) is probably related to the loose mud bricks and mud brick fragments mentioned above. Also in the west a mud brick collapse is visible (DSU102). In the northwest (DSU100) and in the north (DSU103) layers are visible that are likely to be sediments thrown away while digging pits. DSU100 and DSU103 are again cut by F02, F24, and F27. As mentioned above, people (treasure hunters?) dug pits at different moments. Apparently they didn't realize that they were cutting older pits and even were digging in discarded sediments.

Walls

During the excavation several badly disturbed stretches of walls were found. None of them were complete, as they have been cut by the pits almost everywhere. Furthermore a thick and hard incrustation covers the wall parts. Because of this it is almost impossible to distinguish bricks and bonding.

Six walls have been recognized. F34 is only visible in the interface of pit F32. F40, F41, F42, F48 and F44/F45/F47 (three fragments of one wall) are parallel and perpendicular to one another. F41 and F48 are orientated north-south, while F40, F42 and F48 are orientated east-west. F40 is bonded with F41 in the west and with F48 in the east. F41 and F42 might be bonded. We dug a small test trench along F40, but we did not reach the first course, nor did we find evidence for a foundation trench. But in this trench we able to define the bonding of the wall. F40 has been build in English bond (brick dimensions: 30-35 x 20 x 6).

All six walls seem to cut DSU95. It is yet unclear if they also cut DSU94 or if DSU94 abuts the walls. Future excavation is needed to interpret these walls and to understand the building(s) that they formed. Compared to the temple, we can so far conclude that they belong to previous buildings.

AN50

In AN50 only a surface clearance was carried out. In the north east of the square, in the sub surface layer (DSU99), a small collapse of decorated sandstone blocks appeared. Among them were several pieces of torus cornices. After removal of the surface layers (DSU91 and DSU99) it is clear that also this square is full of pits. Some mud brick wall collapses were uncovered and a lot of loose mud brick fragments (35 x 16.5 x 9 cm) and baked brick fragments (29.5 x 13.5 x 6.5 cm) were collected. Especially the baked bricks are interesting, because they had not yet occurred in other squares.

Future excavation is needed to get a better understanding of the relation between the wall collapses and the decorated stones in this square, and the temple.

Area 4.2

Area 4.2 is located north of Area 4.1. Before excavation started in 4.2, the area looked like a small mound in which a very high density of rubble, stone cobbles, and gypsum mortar was scattered on top of the surface layer of windblown sand. These characteristics were thought possibly to indicate the presence, at a lower level, of remains of stone walls, perhaps related to a northern gateway to the temenos area. A small pit was dug on top of the mound during the 2005 excavation season, in order to create a fixed point for future topographical work at the site. The presence of stone blocks was noticed while digging the pit, and the work was therefore immediately stopped, with the aim of beginning scientific investigation of the area the following year (i.e., the 2006 season).

Before excavation started, the only feature clearly visible above ground, although only in part, was a wall running SW-NE (FSU 1); after surface clearance its preserved length (18.5 m) was revealed, together with parts of three walls perpendicular to it (FSU 4-6) on its East side. Another very decayed mud brick wall (FSU 3), running NW-SE, was identified to the NW of FSU 1. This wall seems to be perpendicular to FSU 1, although no traces of bonding between such walls are preserved. The clearance of windblown sand from the top of the mound extended to eleven squares (AP 44-46, AQ 44-47, AR 44-46, AS 45), although in some of these squares the removal of the top layer consisted of only a small area.

An intensive investigation focused on squares AQ 45 and AR 45, W of FSU 1, in its southern part. The excavation led to the discovery of several features, mainly foundation walls, of both stone and mud brick, to which FSU numbers 7-19 were assigned. FSU 8 is a mud brick wall running NW-SE, resting on a layer of dark soil and in a very poor state of preservation. Part of the top of this wall was already visible after the first day of surface clearance. A crack across the width of the wall is visible in its East part, with a sector of it seemingly slipped to the East of this crack. In the corner where FSU 8 is abutted by FSU 7 (a sandstone wall running NE-SW) a cut in the wall (FSU 22), with few mud bricks in it, might be related to a higher course (now lost) of FSU 7, or to FSU 21, a mud brick wall running NW-SE, presently in a very bad state of preservation. FSU 21 seems to abut FSU 8 against its Eastern edge, with possibly two (preserved) higher courses of FSU 21 on top of FSU 8. The junction of FSU 21 and FSU 1 (the long mud brick wall mentioned above) has not yet been clarified and awaits further investigation. The northeastern corner of FSU 21 is not discernible, due to the cutting of a large pit on the top of the mound (FSU 24).

Bonded to FSU 7 on its N end, and roughly perpendicular to it, is FSU 15, another stone wall running WNW-ESE, with up to five visible courses preserved. The stone blocks of FSU 15 (as well as those of FSU 7 and FSU 16, another stone wall) are fairly large (87 x 60 x 25 cm; 83 x 56 x 24 cm), cut rather summarily, and poorly aligned, which therefore suggests that they belonged to foundation courses. Two inscriptions in black ink were found on this wall, one on the first visible course from the bottom, near the corner between FSU 15 and FSU 7, and another one on the second course from the bottom. Both inscriptions seem to be in the same hand, mentioning two different names. A third inscription (identical in content to the second) was found on a stone of the first visible course of FSU 16, in the corner between

this wall and FSU 15 (see report on Epigraphy and Papyrology). These inscriptions may all be dated to the Roman period.

FSU 16, roughly perpendicular to FSU 15 and parallel to FSU 7, ends near the western preserved end of FSU 8. Outside the corner where FSU 15 is bonded with FSU 16, two mud brick walls seem to follow the same orientation as the two stone walls, one following part of the N side of FSU 15 and the other following part of the W side of FSU 16. FSU numbers 17 and 18 were assigned to these two very poorly preserved features. Interestingly, the bond of FSU 18 (headers alternated to headers on edge) seems to be the same as the bond of FSU 21. Another, very decayed mud brick wall (FSU 19), running parallel to FSU 17 to its North, was found but its true character (wall different from FSU 17 or part of it no longer in situ) has not been clarified yet.

FSU 7-8 and 15-16 form a rectangular structure including two mud brick walls (FSU 9 and 10) that run nearly parallel to FSU 8 and 15. They are quite well preserved, to a height of about 120 cm, and their foundation courses are clearly visible. Both are bonded with the stone wall on their E edge (FSU 7) and they are connected to each other through four smaller mud brick walls that run perpendicular to them (FSU 11-14). FSU 12 and 14 abut FSU 9, while, 11 and 13 abut FSU 8. These four walls, as well as FSU 9-10, seem to have been laid out at the same time on an artificial layer (DSU 11) of irregular, white limestone cobbles and sandstone chips (possibly deriving from the cutting of the stones of FSU 7, 15, and 16), and yellow, clean sand, which was used to fill in the spaces between these walls.

Several pits were identified, showing that the small mound is heavily disturbed. The largest (FSU 2) was located on top of and around the cluster of walls enclosed by FSU 7-8 and 15-16. This was perhaps originally dug in search for stone blocks to be reused in other contexts. Another pit was identified West of FSU 18, which had originally been dug through DSU 20, a layer of very compact mud brick debris with many ash and charcoal inclusions and containing a lot of pottery sherds (some of which were sampled for ceramic analysis). Other pits are scattered in the area to the South and West of FSU 20. On the last day of excavation, another large pit was identified to the North of FSU 21, cutting FSU 1, 21, and 23 (a very poorly preserved wall, oriented NW-SE and running parallel to FSU 21). The pit was not excavated.

Two major collapse episodes were identified. DSU 6, along the western slope of the mound, and DSU 4, on the southeastern slope, which seems to extend to a considerable distance from the top of the mound. DSU 4 seems to rest, at least in part, on a very thick, compact layer of mud brick debris (DSU 22), with pottery inclusions, which is also visible along the profile of the corner between FSU 1 and FSU 21. A trench was excavated in order to understand the nature of this layer, comparable to DSU 20, and it was possible to rule out the idea that it might represent another collapse episode.

Conclusions

The 2006 excavation season in area 4.2 brought to light an overall state of disturbance, reflecting a pattern visible throughout the temple area and particularly in the squares excavated in area 4.1. The nature and the function of the features excavated in such a context are difficult to interpret.

The walls uncovered on the top of the mound, all of which are foundation walls, seem to lie well below an original floor level. The earliest wall seems to have been FSU 8, which was later connected to FSU 21, seemingly contemporary to FSU 17 and 18. These walls might have been built as a sort of casemate, which included the three stone walls (FSU 7, 15-16) and mud brick walls FSU 9-14. Such a compartmented foundation, including three stone walls, might have well supported a heavy, monumental structure, the function of which is as yet unknown. The evidence that was collected might support the idea of a northern gate in the temenos wall. Two very large pits, visible to the East and to the West of the mound, can explain the absence of visible sectors of the temenos wall in this area. The two collapsed walls (DSU 4 and 6) clearly belonged to a building of significant size that could belong either to the temenos wall or to the gate itself.

Another possible interpretation is that the casemate served as the substructure of the southern part of a separate, still monumental edifice, oriented N-S, in which the long mud brick wall (FSU 1) served as the East wall. Further investigation is needed in order to shed light on the nature and function of FSU 1 and its relationship to the other features revealed thus far. In particular, the excavation of the area to the North of the foundation walls might provide additional, useful information for the understanding and interpretation of the archaeological features uncovered this year.

Area 1.3

Area 1 clusters around the major east-west road in the northeastern extent of Amheida. The structures in this area are primarily domestic and industrial in nature. This season's excavations in area 1 were carried out in area 1.3, a domestic context that we began excavating in the 2005 field season. The 2005 excavations focused on three interconnected rooms, rooms 1-3, along the east side of the structure.

They were excavated to floor level and clean sand. In the 2006 field season we excavated the remaining rooms, rooms 4-11, west of the previously excavated rooms. All of these rooms were excavated to the top floor level. Additional floor levels were excavated in rooms 5, 6, 7, and 9. Room 6 was excavated below floor level to clean sand.

Room 9

This barrel-vaulted room is located in the northwestern extent of 1.3 and functioned as the entrance to the structure. It is L-shaped and measures 3m x 3m. The room has two doorways; one leads north to the street, the other west into Room 7. The doorway contains two limestone steps leading up to the street, indicating that the street level was rising over time. Two floor levels were exposed. Rubble was

used to prepare a stable surface for the second (top) floor layer. A wall stub was added east of the doorway to the street following the construction of the second floor level.

Object densities were low for room 9 and most derive from the rubble context between the two floor layers exposed this season. These include low densities of ceramics and slag.

Room 7

Room 7 is located east of Room 9. This unroofed room functioned as a courtyard area and the main axis for entering the other rooms in this structure. It provided access to rooms 1, 2, 5, 6, 8, 9, and 11. It is approximately rectangular in plan, measuring 2.75 x 6.20m. The doorways show signs of heavy use-wear. A well-preserved floor layer was exposed during excavation. A section was cut in the northern half of the room to determine if there were additional floor layers. Three additional floor layers were found. An oven was exposed in the north-east corner of the room that was associated with the first (bottom) floor level. The upper floor levels were missing in this area. They might not have been added in this vicinity so that the oven could be accessed throughout the occupation of the house.

Most of the objects found in room 7 derive from the layer of collapse immediately above the floor and associated with the fourth (top) floor level. These include several complete or largely reconstructable vessels, including a lamp, jars, and bowls. Also associated with the fourth (top) floor level was an incompletely carved statue fragment representing a human form. A clay tablet inscribed with Greek was also found amid this collapse. An incised bone hair pin was found associated with the third (from bottom) floor level.

Room 11

Room 11 is a small sub-area located in the north of room 7, just west of the oven feature. It is a barrel-vaulted, rectangular space of the dimensions 1.25 x 1.25 meters. The interior of the room is quite low and was probably used for storage. It was accessed through an aperture in the east of the feature. Rubble was placed above the barrel-vault to create a flat surface. A plastered channel rests on top of this rubble. The channel follows the south and east sides of this feature and probably would have continued along the north side. The rest of this feature is not preserved and its specific function is unclear although it was probably used for domestic preparation of food or liquid. No significant artifacts were associated with room 11.

Room 8

Room 8 was accessed from the middle of the three west doorways in room 7. This room functioned as a stairway to the roof of 1.3. A small hallway and four steps were preserved. The dimensions of this space are 0.85 x 1.85m. No significant objects were associated with this context, but a high density of olive pits and other seeds were associated with the floor in the hallway.

Room 6

Room 6, vaulted in antiquity, was accessed through the southeast door in room 7. This small rectangular room measures approximately 2.7 x 2.8m. The south and east walls have deep gouges and signs of heavy use-wear at floor level. Two floor levels were exposed here, both of which were in a poor state of preservation. Just inside the doorway to room 7 a wooden lid covered two large storage jars that were placed under the bottom floor level. In the process of removing these jars we excavated below the foundation level of the walls. It is clear that the natural slope of the hill was followed in the construction of the house walls because the foundation level was higher for room 6 than for room 3 (excavated in 2005) to the east.

Many complete jars and bowls were found in this room. Most of these vessels were associated with a layer of collapse and the top floor level. A palm-reed mat was also associated with the top floor level. This mat was consolidated and removed. A coin was found between the first and second floor levels.

Room 5

Room 5 was accessed through the southernmost west doorway in room 7. This unroofed, rectangular room measures approximately 2.5 x 4m. Three floor levels were excavated in room 5. The third (top) floor layer is preserved only in the entryway into room 7. The second (middle) floor layer is visible underneath the third floor layer and also extends further to the west, where signs of burning are evident. The first (bottom) floor layer was exposed in the southwest quadrant of the room. It shows signs of heavy usage, particularly for fire-related activities. A hearth feature is associated with the bottom floor layer. A less formal hearth consisting of two charred mud bricks stacked on top of one another is associated with the third (top) floor layer.

This room yielded a large number of complete and nearly complete vessels. Most of them can be associated with cooking and many of them were blackened from use. This assemblage combined with the architectural and depositional data suggest that room 5 functioned as a cooking area.

Room 4

This room, vaulted in antiquity, probably functioned as storage space. Room 4 is rectangular in plan, measuring approximately 2.4 x 0.6m. The ceiling height decreased towards the north, narrowing the vertical space. It seems likely that it was accessed through a doorway to the south from room 5. The inside walls of room 4 were mud plastered, but most of this plaster is no longer present except on the vault springing. The walls in the opening between room 4 and room 5 are rounded from frequent passage between the two rooms. The west wall shows signs of light burning, probably due to the use of oil lamps in this vicinity. A well-preserved floor layer composed of mud bricks was exposed.

The artifact densities for room 4 were low in all categories except for botanical remains, such as seeds and olive pits.

Room 10

Room 10 is rectangular in plan with the dimensions 1.4 x 0.7m. It probably functioned as storage space. It was probably accessed through an east doorway in room 4 that was later blocked with a wall. Mud plaster covered the walls of this room. This plaster was blackened to the south, probably from the use of oil lamps. No significant objects were associated with this room.

Summary

After two seasons of excavation it is clear that 1.3 served a domestic function. It is possible to determine the differential use of space through the analysis of architecture and associated artifacts. Food preparation and storage areas are particularly evident within this structure.

Area 3

On February 12 and 13, 2006, in concurrence with the restoration of the funerary monument in square Q67 known as the Pyramid (see the report on Architectural Conservation), we ran a short excavation at its south-east corner in order to interpret the extant structures before new walls, meant to strengthen the precarious ancient ones, covered them. We started off with the removal of the southern most chunk of the original corner already detached from the structure, revealing the top of a rather extended collapse made of mud-bricks fallen both from the façade and the interior of the building. We continued excavating the area removing the uppermost mud-bricks to uncover the lower portion of the collapse. While exposing the bottom layer of the fallen mud-bricks, it appeared evident that the foundations of the Pyramid were laid both on compacted mud and on natural bedrock, the compacted mud being used to flatten the sloping edges of the plateau. Of particular interest were the small remains of three walls still visible *in situ* below the collapse. Wall F1, oriented roughly North/South, is part of a series of structures dated to a later period and abutting the preexistent pyramid. The outline of such structures is not reconstructable from the extant remains, but scanty traces of whitewash testify to the presence of plastered rooms. Wall F2, of which only 4 headers are still present, shares the construction technique and the orientation of the lower rows of the pyramid's North-South façade, being thus probably part of the same wall. Wall F3, running East-West, is the less well preserved. Its northern face is on axis with the foundation bricks found at the western end of what is left of the southern façade. It is therefore possible that F3, bounded with F2, constitutes part of the lower courses of the original pyramid's corner.

Sometime after the collapse of the South East corner, the natural bedrock was cut out to create a recessed space meant to fit the mummified body of what was probably a female individual. The burial

was ransacked by animals and only one foot wrapped in bandage was still *in situ*. A large part of the body's bones were found scattered on the site.

Topographical Survey

The topographical survey in Amheida started at the beginning of January 2006 with the checking of the grid set up in 2005. The work proceeded at the beginning of February and for the whole month with the survey of the extant structures, to enlarge and update the general planimetry of the site.

After a careful check of the whole area, it was clear that almost all the stakes placed during the previous season were still in place, except for some in area 4 and others in area 2, where they had been removed for excavation purposes and their replacement was therefore impossible. These stakes were repositioned and the existing grid in Area 4 enlarged to cover a larger sector North and West of what investigated during the previous seasons. This enlargement was mainly aimed at supporting excavation work in two sizable areas where limestone material and big block fragments, already noticed in 2005, were visible. (One of these is Area 4.1.)

The topographical work *per se* started only after the mapping had been completed. The main aim for this season was to fill up the gaps between the various areas that are now under archeological investigation in order to achieve a more complete mapping of the site and have a firmer basis for the study of the urban character and development of the city. The mapping tasks, performed with a Total Station Leica TCR705, started in the area between the South-West end of Area 1 and the North-East end of Area 2. By cleaning the top surface of the extant walls, it was possible to identify at least two new sets of dwellings oriented North/North-West, South/South-East. Those dwellings seem to be intrinsically connected with the urban grid of Area 1.

The surface cleaning of the dune North-East of Area 2 has allowed to identify an interesting building. This building is a rectangular structure partially preserved above ground and oriented East/West. The structure is characterized by columns, the bases of which are still preserved on the long flanks especially on the South one, and by the scanty rests of semi-columns located at the center of the short East flank, and at the Eastern ends of the long flanks where such semi-columns are doubled. White plaster is still visible on all walls preserved above ground level, and fragments of painted plaster and several pottery sherds are scattered in the vicinities. This building seems to face onto a North/South oriented street that crosses at its northern end a main avenue. This avenue reaches the buildings in Area 1 via a sharp turn toward North/East. The main interesting features in the location of this edifice are its closeness to two other sizable colonnaded buildings located nearby to the west and the nearby villa in Area 2.

In Area 4, the main aim of the season was to define the outline of the temenos, already partially identified last year. The cleaning of the extant wall surfaces has allowed for the individuation of the North/West and South/West ends of the large enclosure wall. Moreover, it has become clear that the perimeter of this wall did not have a regular shape but rather a polygonal one. Despite the fact that

numerous new data have been acquired, the definition of a general plan is still made difficult by the poor state of preservation of the structures still in place along the Eastern and Northern side of the hill, and by the peculiar shape of the temenos walls.

The top surface of the walls in Area 4 has been cleaned in order to define with a higher degree of precision the relation between the temple area and the lower urban grid. Although the structures' state of preservation is lacking, it was nonetheless possible to identify the dense grid of intertwined rooms connoting the lower settlement. Unfortunately, none of the streets that must have connected the dwelling region with the temple have been detected yet.

Three new streets, two of which are oriented East/West, and the third one North/South, became visible after the cleaning of the sector immediately South/South-East of Area 4. These streets probably defined the eastern corner of an *insula* where at least one major dwelling, characterized by fine stucco decorations, niches, and large pilasters, is visible.

The updating of the general plan of the site reached the area South/East of the Pyramid. Here, the profile of some dried-out channels, and the outline of a pottery kiln and its dump have been surveyed. During this survey, several burials partly damaged by the water channels have been identified as well. Ten of them are clearly visible and still preserved in their structures.

The topographical work of the season also included work with the different excavation areas, mainly with the daily update of the planimetries and the plotting of the most relevant findings with the system of UTM coordinates. In Area 2 and Area 4, ground photogrammetry has implemented the knowledge of the extant archeological situations. As for Area 4, the ground photogrammetry involved the shooting of the North/West stretch of the southern side of the temenos wall for about 23m in length. As for Area 2, photographs of the painted plaster decorations in room 1, of the inscriptions on the East and West walls and of the complex ceiling collapse, both in room 15, will provide the basis for the proper photogrammetric restitution.

Architectural conservation

Work was carried out from 11 to 26 February. Conservation interventions were made at two buildings on the site: the House and the Pyramid.

1. The Roman House

The temporary shelter built over the main space of the house was removed, and the loose brick screen walls around the interior were dismantled to allow for conservation of the wall paintings to proceed (see separate report). Examination of the mud brick structure of the building revealed that the walls have further deteriorated through damp infiltration and insect damage since last year.

New brickwork was used in the reinstatement of the missing south wall of the painted main room of the house. This followed the original brick dimensions of 8 x 34 x 17cm but without the inclusion of

straw/*tibn* (to avoid termite infestation). The existing bonding pattern was replicated where possible, although the original Roman brickwork is of a variable character with inconsistencies in sizes and coursing of bricks. Elsewhere, new mud brick blocking walls were built to divide the excavated from the unexcavated areas and to create a series of protected compartments within the area of the house to separate different areas in the backfill (see plan). The mortar used in the consolidation works was a mud mortar made from a combination of imported *tafl*, old crushed fragmentary bricks, and a small percentage of fly-ash (*osromil*).

The painted room was backfilled to its full height with clean sieved sand, and the temporary roof was reinstalled to act as a further deterrent to unauthorised digging. In the recently excavated schoolroom, another temporary roof was installed of *jarrid* on a timber substructure. Another blocking wall was constructed to protect the largest area of inscribed plaster, and two smaller blocking walls were constructed under the staircase.

Future work

The decision as to how much of the house should be reconstructed or consolidated is dependent on whether the structure is to be left accessible or backfilled after documentation is completed.

2. The Pyramid

Work was concentrated on consolidating the north-east and south-east corners of the pyramid, which had been seriously damaged by the penetration of robbers' holes. These holes had caused the collapse of significant sections of the corners, leaving the remains in a highly unstable condition. Some clearance of the robbers' holes was carried out to establish a secure base for new brickwork, but threat of collapse prevented a full excavation of these holes from being carried out. A limited excavation of the south-east corner revealed human remains, either present due to a secondary burial or to animal activity (see Archaeological Report on Area 3). An investigation of the large robbers' shaft immediately to the south of the pyramid proved that this shaft is substantially blocked by fallen rocks, and that it would be hazardous to reopen it, as the rock is extremely friable in this area. This shaft was accordingly backfilled.

New bricks, matching the dimensions of the original Roman bricks but again without the inclusion of straw (to avoid termite infestation), have been used in the consolidation (8 x 17 x 35cm after cleaning and squaring up). The existing bonding pattern (English Bond of alternating stretchers and headers) was also replicated in the new brickwork. The mortar used in the consolidation works was a mud mortar made from a combination of imported *tafl*, old crushed fragmentary bricks from the collapse of the pyramid, and a small percentage of fly-ash (*osromil*). The line of the south face of the pyramid was established through excavation, while those of the north and east faces were still visible above ground level. The new brickwork was stepped to achieve maximum structural effectiveness, and severely wind-eroded bricks on the faces were replaced with new bricks wherever a secure bond between old and new brickwork was

required. The brickwork was carried up to a height of 1m on the north-east corner, rising in the south-east corner to a height of 2.22m which formed the base for the original angled setback of the pyramid. The setback itself was reconstructed to a height of 1.2m above this base line. A total of 5,000 bricks were used in the consolidation of this side of the pyramid.

Future work

Further limited consolidation of the upper part of the eastern, now stabilized, section of the pyramid is recommended. In order to permit archaeological investigation of the area at the base of the pyramid on its western side to proceed without risk in the future, further interventions are recommended. To preserve at the same time as much as possible of the original appearance and silhouette of the pyramid, it is suggested that a solid base be constructed to a probable height of 1.8m. This will be built on secure foundation courses on the perimeter, but stepped over and built upon the existing collapsed brickwork to create a 'belt' around the base of this section of the pyramid. This should have sufficient mass to prevent structural collapse. It is not recommended to rebuild the entire structure to its original height owing to the known fragility of the bedrock and the risk of further collapse.

Future consolidation of other buildings on the site

Survey was carried out of some of the other standing structures on the site; two were particularly found likely to benefit from conservation treatment. These are a tower to the north near the village and an internally vaulted pyramid tomb in the southern necropolis. The various problems associated with these structures (failure of vaults / absence of lintels / missing brickwork / cracks requiring timber stitching) should be addressed as soon as the opportunity arises.

Plaster and Painting Conservation

Since the original survey work a quarter-century ago, it had been known that the reception hall of the villa in Area 2.1 retained outstanding mythological scenes (upper register) and architectural trompe l'oeil (lower register). In 2004, the reception hall was excavated. Mural paintings survived, in varying states of preservation, on all four walls of the room. Additionally, four very large collapsed blocks (on average 65cm x 48cm) retained important scenes in quite good condition. About 90 smaller blocks retained fragments of scenes and trompe l'oeil. More than 1000 painted fragments were collected and stored in 125 covered trays.

Each state of preservation of the murals, whether *in situ* on the walls of the villa, on large blocks, on small blocks, or as fragments, has created various conservation problems. The nature of the conservation problem and the treatments carried out in 2006 are as follows.

1. Mural Paintings In Situ in the Villa.

In 2004, the murals were conserved through “minimum intervention.” After cleaning, they were sprayed with a 4 percent solution of *Acryloid B72*. Unstable borders were strengthened with *Hydroseal* (75 percent). Very unstable areas were supported with facings made from crepaline or tissue and adhered with *Acquazol*. Many borders were further supported with mud mortar

During 2004, it was confirmed that the lower half of the walls are quite wet and thus subject to efflorescence of salts and other agents of deterioration that use water as the vector. Following treatment in 2004, the murals were backfilled by erecting a wall of mud bricks parallel to the paintings and filled with sand as the insulator. In 2005, the walls and backfill were adjusted, and a timber and jarrid roof was placed over the room to deter visitors.

In 2006, the backfill and the roof were removed. It was found that the backfill system and roof did not act as complete barriers between the murals and the very harsh environment of the room. Additionally, the lower half of the room remains wet and subject to extreme efflorescence of salts. Another unexpected conservation problem is termites (or termite-like) insects that have tunneled into the some areas of the murals.

During 2006, the insects were controlled by hanging bags of mothballs on the murals and by covering the murals, with mothballs hung under the covering. Unstable areas of plaster and paint were retreated using the materials and techniques employed in 2004. At the conclusion of the 2006 season, the room was fully backfilled with clean sand.

2. Large and Small Blocks

The figural scenes from this room are quite difficult to treat because they are thinly painted on a thin white ground that is poorly attached to the mud mortar. The refractive index of the white ground and paint can be permanently altered to beige with most convention materials of conservation. In 2005, the author and Prof. Richard Wolbers, University of Delaware, carried out several experiments whose goal was development of treatments to remove the murals safely from the blocks without changing the tonalities of the colors. A removal system was developed that utilizes cyclododecane as a rigid facing. Once applied, the painted surface can be mechanically detached from the block and then placed in *Conservare OH*, an inorganic ethyl silicate-based consolidant. Over several months, the cyclododecane will evaporate away. In 2006, all the painted blocks collected in 2004 were treated in this fashion.

3. Treatment of the Fragments

Each of the 125 trays of fragments were examined , cleaned and all pieces sorted by color and form. In 2005, Helen Whitehouse had reconstituted several scenes from fragments and had initiated a data base for the trays of fragments. In 2006, other scenes were reconstituted. A data base was completed for the trays of fragments, including overall and detail photographs of each tray. The trays are now stored on annotated shelves that relate to the database.

Geophysical survey

After the extensive magnetic survey in previous seasons, the two geophysicists carried out in this season a conductivity survey of the site. Two days were also spent on conductivity and magnetic measurements on the neighbouring site 'Ain el-Gezzareen to compare the results obtained on both sites. The method of conductivity survey of archaeological sites is to measure conductivity of the earth point by point with a small step (not more than half a meter), close to the surface, and present the measurements on the conductivity maps.

A co-ordinate system was set up on the site for data collecting. There were plots 40 m wide and as long, as it is necessary to cover the area of this or those part of the site. Small wooden sticks were put each meter along two opposite sides of the plot and 40 m-strings with meter marks were used between the sticks. The conductivity survey has been carried out with EM38RT ground conductivity meter from Geonics limited GSM-19WG (Ontario, Canada). The measurements were made along straight and parallel lines (strings with meter marks); the space between the lines was 0.5 m. The distance between the measurements along the lines was 0.5 meter. The height of the conductivity meter above the surface of the ground was about 0.2 meter.

The data were stored in the memory of the instrument; after the survey they were transmitted to a portable computer. Two different presentations of the magnetic data were prepared with help of Surfer software (Colorado, Golden): coloured contour maps and grey-scale maps. On the contour maps the positive anomalies were marked with blue colour, negative ones - with red colour. On the gray-scale maps the positive anomalies are marked with dark colour, the negative ones – with light colour.

To measure electrical resistivity of mud bricks, soil etc., we used a resistivity meter of the German firm Gossen in a four-electrode mode.

First of all, the area of the site was inspected with help of the “free search” method. This means that the electrical conductivity has been measured with a step of about 1 m - 1.5 m without any grid. On the whole territory of the site only two areas with high conductivity anomalies have been found – on the Temple hill and around the Pyramid. There are also local conductivity anomalies on the area close to the road. On the quarters of the Roman town the conductivity measurements are low and almost constant, see for example, Area 2. Therefore we decided to carry out detailed conductivity measurements in Areas 3 and 4 (Pyramid and Temple).

Area 4. Temple Hill

Magnetic survey was carried out on a large area of Area 4 in 2000. With the help of magnetic survey it was possible to reveal a large rectangular structure, the sizes of which are about 108m x 56m in the central part of the hill. The orientation of the short axis of this structure is about 37 degrees from a northern direction towards the east.

It would be possible to interpret this rectangular structure as an enclosure, which is earlier, than the Roman Time buildings on the site. It is very interesting, that the neighboring Early Dynasty site 'Ain el-Gezzareen, which was investigated in 1999 and 2000 with help of magnetic survey, has almost the same dimensions and orientation of the walls. The dimensions of the enclosure in 'Ain el-Gezzareen were approximately 112 meters x 54 meters, and orientation of the walls was about 25 degrees from the north towards the east.

The conductivity survey has been carried out on a quite big area. The results are presented as color contour maps and as a gray scale map. One could see that there is a big and quite complicated structure, consists of several rectangular blocks and two round structures. The material of this structure is more conductive for the electric current, than Roman mud brick walls. Therefore one could observe the high conductivity anomalies over the 'early' mud brick walls and the ruins of them. The hypothesis is that there was an earlier settlement on the Temple Hill, and we can see the contours of the enclosure walls and some inner walls. The extension of these positive conductivity anomalies gives an extension of the an early settlement.

One could suppose that in the Old Kingdom people used the clay from spring mounds and may be a special technology for preparing mud bricks for their constructions. The clay was different with the one, used later in the Roman period. It is a very fine clay, inreached with different minerals and iron hydroxides. For this reason, mud bricks of the Old Kingdom have high electrical conductivity and can be seen on on conductivity maps as high readings.

We have checked the electrical resistivity with help of Gossen resistivity meter of the Roman mud bricks, visible elsewhere in the town quarters and possible 'early' mud bricks, which are exposed at the excavations on the Temple hill and we came to a conclusion, that the Roman mud bricks do not conduct any electric current, while the possible 'early' mudbrick have rather low electrical resistivity, or, which is the same, high electrical conductivity.

One of the most interesting feature, which has been found on the Amheida Main hill, is a strong magnetic anomaly on the top part of the area. The value of the anomaly is +100 and - 60 nT, the area occupied by it is about 10 m x 10 m. It could correspond to a very big kiln (?). In any case, this is a big mass of hardly fired clay.

Area 2 - South-of the Roman villa

The magnetic survey has been carried out on the big area south of the Roman Villa, but there are almost no anomalies of electrical conductivity there.

Area 3 – The Pyramid

Another area with high conductivity measurements, as we already mentioned above, has been revealed around the Pyramid. The detail conductivity measurements has been carried out on a quite big

area, including slopes and lower flat area to the east of the Pyramid. One could see, that there are high conductivity measurements on the rectangular area with a Pyramid in the center and there are two anomalous zones to the north-east and south-east of it. One could interpret these anomalies as structures (may be earlier, than Roman structures), which we built in Pre-Roman time. We would like to emphasize, that there are underground structures not only below the pyramid and around it, but also on the southern and northern-eastern slopes of it, and may be also on the low flat area east of the pyramid.

Possible Pre-Roman pottery kilns near the road

Area 4 has been revealed with help of “free search” conductivity survey: several quite strong anomalies has been found there. It is situated at the southern-eastern part of the site, close to the modern road, near two natural hills (see **Fig. 17a**). After that the area was measured with help of magnetic “free search” method, and two pottery kilns has been revealed side-by-side with the conductivity anomalies.

After that a detailed magnetic and conductivity measurements has been carried out on the anomalous area. One could see strong and distinctive magnetic anomalies of the pottery kilns. It is necessary to mark, that according to our surface observations, these pottery kilns are of Pre-Roman (possibly, Old Kingdom) date. The structure of the kilns, different with the one of the Roman pottery kilns, and the ceramic pieces around them could tell us about it.

There were strong positive conductivity anomalies from the former spring and the beginning of the channel. The other strong positive conductivity anomaly is on the eastern part of the slope of a small hill, on which the pottery kiln 2 is situated. The reason for these anomalies could be the same, as on the Temple Hill: the water from the spring brought fine clay with a lot of iron hydroxides and other minerals. This clay is more conductive, than the other clay, which was used by Romans to built there mud brick houses. The big anomaly near the pottery kiln 2 could be caused by the clay pit, from which ancient people took the clay for forming their vessels, which they fired in the pottery kiln (2).

Egyptian Epigraphy

The epigraphic work at Amheida concentrated on the recording of the blocks of temple decoration found in area 4.1. Some 50 blocks were recorded and drawn onto plastic. As a result of this season the history of the temple from the Roman period can be described with more accuracy. New reliefs were found from a chapel that can be attributed to the reign of the emperor Titus. These are mainly blocks belonging to a register at the lower part of the wall (the soubassement), with a row of male and few female fecundity figures. Some parts of thrones and other parts of reliefs in a large scale were also found, with life-size figures, belonging to this phase of the temple, which was executed in a raised relief. One of these is the head of a large baboon set in a chapel, the sacred animal of the god Thoth.

Some blocks found during 2005 can now also be attributed to the reign of Titus. Very few reliefs from the chapel decoration of Domitian were found this season, which demonstrates that there is still a

relation between the original architecture of the temple and the current find spots of the blocks. The chapel decorated under Domitian must have stood to the north of the chapel decorated under Titus, which may have been the principal sanctuary of the temple. Further research is needed to confirm this hypothesis.

Other blocks appeared with a different style of sunk relief from a doorway set into a wall and decorated later in the Roman period, probably during the later half of the second century CE. These blocks are separated from the findspot of the larger part of the Domitian and Titus reliefs by a series of column segments, probably indicating a former hypostyle hall.

A limited number of blocks, not more than nine, was found that belong to earlier temples and that had been reused in the Roman period. This percentage of reused fragments is lower than that found during the previous season. One of these earlier reliefs shows the bodies of two goddesses in a high quality sunk relief that can be attributed to the 26th or 27th dynasty. No cartouches with royal names from earlier periods were found during this season.

In addition to the relief blocks, two hieratic ostraca were found in the temple area dating to the Ramesside period. The best preserved of these can be identified as a school exercise of a pupil, giving a text of a didactic nature.

Greek Epigraphy and Papyrology

The 2006 season produced a variety of objects (other than temple blocks) bearing writing. Among these were about 100 ostraka in Greek and a few ostraka in Demotic and Hieratic. The types of contents of the Greek ostraka were largely familiar from the ostraka of the two previous seasons. Many of the tags bearing the names of wells with which we have become familiar continued to be discovered. Another instance of such a tag embedded in a jar stopper, combined with a larger find of similar ostraka in stoppers at Kellis in this year's season, makes it clear that these little tags were all used as labels on jars, mainly if not entirely of wine. Another highlight of the 2006 ostraka was inv. 11198, containing a rather faded few lines containing the names of three colors, found in Room 9 in Area 2.1.

In the newly opened Area 4.2, the stone foundation blocks revealed at least five instances of individuals having signed their name and patronymic on the top of a block, in a position such that the writing must have been invisible once the next block was laid (see the report for Area 4.2). Four of the five were of the same individual, Petosiris son of Tithoes; of these two were intact and two surviving only in chips of stone. The fifth was of Petenephotos son of Petosiris.

The year's most remarkable discovery, however, was the extensive writing in red paint on the walls of Room 15 in Area 2.1, parts of which were well preserved and other parts washed out (apparently deliberately in antiquity) or lost to the fall of plaster from the walls. These contained a series of short poems, epigrams in effect, written in elegiac couplets. Some of them bear indications of the persons to whom they were addressed—in the main, the students of the person who wrote them. The themes suggest

a school in which the writing of rhetorical compositions in verse was taught, and the writing includes various aids to the students in their composition of such verses, with accents, breathings, long marks, and indications of caesura in the meter. The nearest parallels are teacher's models on wooden boards, although those are much smaller; the themes are found in fourth century teachers of rhetoric like Libanius and Himerius.

Pottery

This season saw the completion of the recording of the ceramic material from the 2005 excavations. The sherds from the 2004 excavations in areas 1.1 and 2.1 were labelled, and most of the latter group catalogued and drawn so that they could be integrated into the current system of analysis of the pottery from Amheida. This ceramic material was found, not surprisingly, to be of the same nature as the pottery from the contexts of 2005. It was decided that as the pottery from area 1.1 could not be directly related to that of area 1.3 the similarity between the two assemblages would simply be assessed.

Pottery was collected during the excavation of the same three areas that were opened in the 2005 season, and a few sherds were also collected in the vicinity of the pyramid. The ceramic material was sorted on site, recording for each unit the total weight of the sherds of each fabric, in order to study the proportions of each fabric and for what types of vessel they were used. Within each fabric group, the number of diagnostic sherds (rims, bases, handles, spouts) of each broad vessel shape was noted. A policy of discarding bases, handles and small, worn or damaged diagnostic sherds was introduced into this stage of the analysis to speed up the sorting and cataloguing processes. The remaining diagnostic and other interesting sherds were kept for further analysis and as a record of what was found in each depositional stratigraphic unit (DSU). Full recording of the diagnostic sherds continued in line with the established DOP system, in order to compile a catalogue of types for each site, with a record of where these types were found and the frequency of their occurrence. Additions were made to the catalogues compiled for each area in the 2005 season.

All of the ceramic material from Area 1.3 was fully recorded, new types drawn and the most complete vessels photographed. The pottery from this area is consistent with a late third or early fourth century date, perhaps slightly earlier than that of the higher status house (Area 2.1), and with the domestic function proposed for this house structure. Significant *in situ* floor deposits were found in rooms 5 and 6, consisting of a range of intact and reconstructable coarse ware vessels in an A1 fabric, including simple and carinated bowls (some with red dot or tick decoration on the rim top), large jars and lids. Two large closed vessels were also discovered sunk below the floor in the north east corner of room 6. Room 5, an open courtyard, contained a number of vessels that were burnt or blackened, including several so-called fire-dogs, possibly used to support cooking pots.

A sample of DSUs from Area 2.1 was fully recorded, but the finding of large and significant contexts from both room 9 (DSUs 127 and 151) and room 15 (DSUs 152 and 157) meant that completion

of the analysis of the pottery from this area was not possible this season. Both of these rooms were apparently outside the main house structure. Room 9, perhaps an open courtyard, contained a large circular mud-brick structure, the fill of which was designated as DSUs 127 and 151. These units contained a vast quantity of sherds of a relatively small size, between which few joins could be made.

This suggests that the ceramic material does not represent an *in situ* domestic assemblage, but was dumped inside the structure either opportunistically or for a specific reason, in which case it is likely to have been brought from elsewhere at Amheida. While it was not possible to record the pottery from these DSUs during the 2006 season, a preliminary assessment of the material was made. This consisted of laying out all of the diagnostic sherds from each DSU and recording the number of sherds of each type in order to summarise the composition of the assemblage. The most frequently occurring vessel types in these DSUs are simple bowls (27% of rim sherds), long-necked jars (8% of rim sherds) and jars with a shorter neck and thickened or turned down rim (10% of rim sherds). While other forms, such as lids and flasks, are present, they do not form a significant component of the assemblage. The reason for this predominance of a restricted number of vessel types is not yet clear.

Room 15 contained a possible floor deposit, the pottery of which was concentrated in the north east corner. It is not clear whether all of the pots were *in situ* on the floor surface, or were in fact associated with a roof deposit and fell to the ground when the roof collapsed. The room was gridded into six squares of equal size in order to preserve the spatial relationship of the objects and pottery, which was excavated in two arbitrary DSUs. Complete or significant portions of vessels were allocated a field number and their position recorded on the plan of the room. The ceramic assemblage seems to be slightly different to, and less varied than, that in the rest of the high status house. The most frequently occurring forms are small simple bowls, large ledge-rimmed bowls with interior red-painted decoration and jars with long necks and wide rim diameters, the latter often in a P37 fabric. There are also a number of flasks and large jars/amphorae in a coarse A11 fabric with a cream slip. A small but consistent quantity of late Roman amphora (LRA) 7, an import from the Nile valley, was also found, including both diagnostic and body sherds. A few fragments of Rhodian amphora (late fourth century BC to early second century AD) were also found in this DSU. Noticeably absent are more complex bowl and jar forms and kegs. The shoulder of a LRA 2 amphora was also found in the vault collapse (DSU 178) of room 18.

The excavations in the temple area were divided into two parts, the first being the continuation of the investigation of the pitted area designated as Area 4.1 in the 2005 season, the second (Area 4.2) being a mound to the north of the previously excavated area. Area 4.2 was excavated to investigate the theory that it might be the *temenos* gate on the basis of a scatter of a large number of limestone chips, mortar and subsurface stones. The excavations revealed foundations of various mud brick and stone walls constituting the substructure of a possible monumental feature. The surface and sub-surface pottery in this area was of the same character as that of Area 4.1, consisting mainly of fourth century types similar to those in Area 2, but with a few recognisable early Roman (Eastern *sigillata*, Barbotine) and dynastic

vessels. DSUs 14 (collapsed mud brick wall) and 19 (sand fill of pit F20) were distinguished by their high component of Late period sherds, particularly jars with thickened rims and baggy shoulders, dimple bowls and a bread tray. The substrate into which pit F20 was cut (DSU 20) was sampled for diagnostic sherds, which were found to be predominantly Late period to Ptolemaic period in date, including fragments of a bread tray, a body sherd of a polished ware bowl with a fugitive red slip, a so-called goldfish bowl and a calcium rich bowl of this date range. Sherds of other periods were also present, such as the rim of a basin thought to be of the Middle Kingdom to Second Intermediate period, and the rim of an Old Kingdom conical bread mold.

The composition of the surface material in both Areas 4.1 and 4.2 was extremely mixed, spanning the Old Kingdom to the fourth century. The part of Area 4.1 excavated this season was distinguished from that of 2005 by the lack of New Kingdom bread molds. It was noted that Old Kingdom single and double bread molds, some with simple incised motifs, were particularly abundant in DSUs 61 (subsurface in AP50-AQ50), 72 (windblown sand below DSU 61) and 86 (fill of pit F11, mainly characterised by collapse of sandstone blocks), and many conical bread molds were found in DSU 99 (subsurface in AN 50). DSU 73 (lowest level of fill of pit F27, possibly associated with the substrate into which it was dug, DSU 100) was found to be entirely composed of dynastic sherds, including a large number of single and double bread molds.

An extremely deep pit (F32), the bottom of which was not reached after 3m, in the south east of the excavated area produced a stratigraphic sequence. Sherds were collected from DSUs 94-7, upper levels of the substrate into which pit F32 was cut, containing occupational or dumped material. These indicated that the entire sequence contained ceramic material of the Old Kingdom, consisting of fragments of polished ware bowls and conical, single and double bread molds, the latter group including a body sherd with an incised motif known from the 2005 season. *In situ* vessels at a high level in the surrounding area included large coarse basins that perhaps date to the Second Intermediate period (DSU 95), and a blackened bowl in a nearby wall collapse (DSU 93) with a stubby knob handle.

Pottery was also collected at the pyramid (Area 3.1) during its conservation in this season. Material from a small surface survey was of fourth century date. A small sherd of a silt *sgraffito* bowl, of a style consistent with finds at the Delta site of Tell Tinnis dating to the Ayyubid period, was found on the east slope leading up to the pyramid. A tiny glazed ware sherd was among the surface material from Area 4.1 and part of a white-slipped frit ware lid was found in a wall collapse (DSU 4) in Area 4.2 this season.

Archaeobotany

During this season, archaeobotanical samples from three areas of the site were analyzed, Areas 1.3, 2.1, and 4.1. A total of 32 matrix samples were taken. Of these, 22 came from Area 1.3, including some samples from the 2005 season, 8 from Area 2.1, and 2 from Area 4.1. These show a similar plant

assemblage to that found last year. Because of the better preservation and lower humidity in Area 1.3, a higher percentage of desiccated plant remains and a greater variety of plant species are found in Area 1.3 compared with Area 2.1

The cereals include bread wheat, hard wheat, and barley. Emmer wheat was found in high quantities only in the temple area 4.1. The woody garden plants are represented by the common species: grape, olive tree, date palm, fig, and rarely peach. Several field crops and herbal garden plants, such as lentil, flax, cotton, safflower, coriander, rosemary, and black cumin occur in the samples. Weeds are represented by grasses, members of the pea family, such as clover, vetch, medick, along with mustard, aslphodill, mallow, marigold, sea-blites, sea club-rush, and nettle-leaved goosefoot. Acacia and tamarisk occur in most of the samples. Dung was also found in some samples, occasionally in high concentrations.

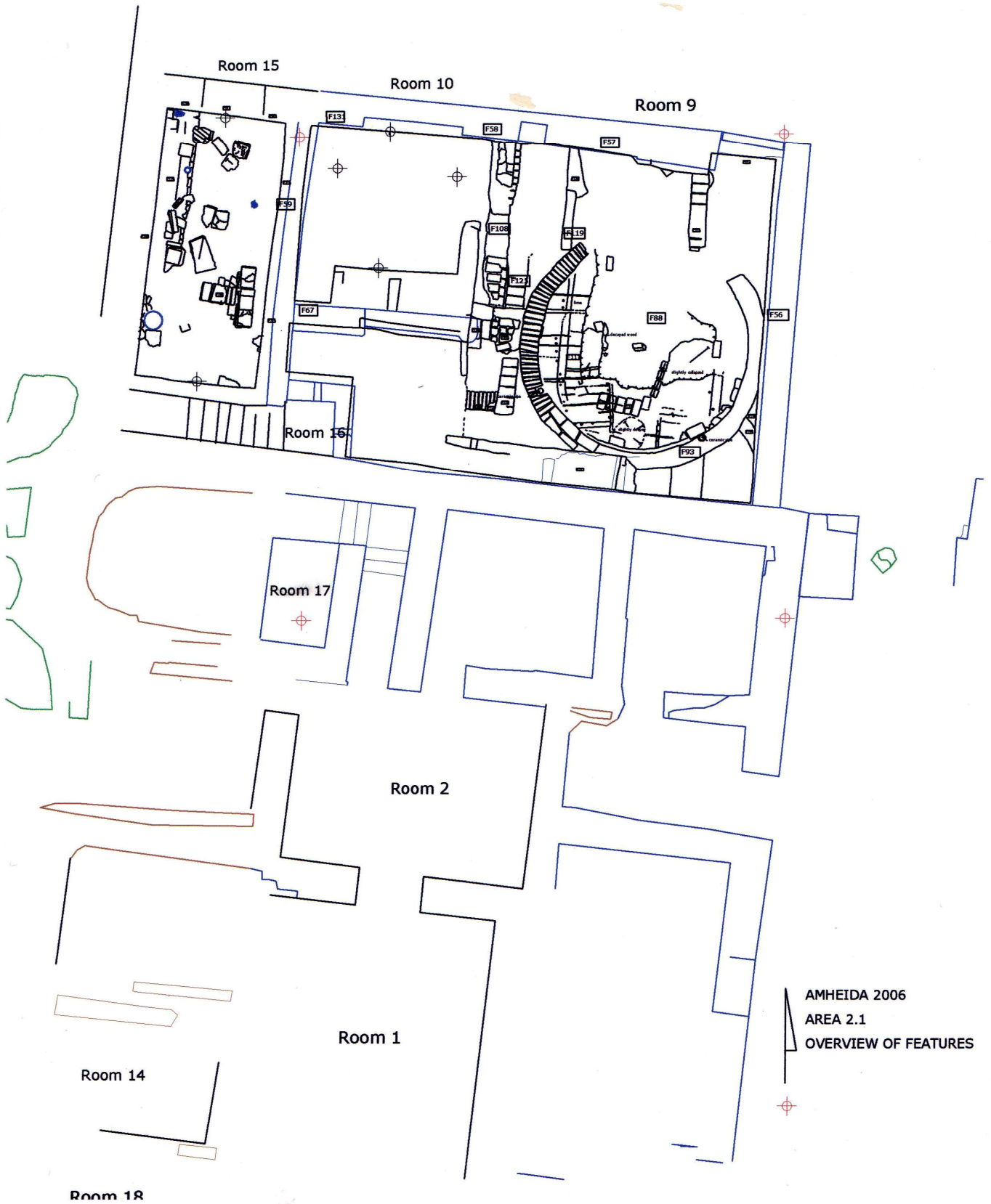


Fig.1.



Fig. 2. Area 2.1, Room 9: Circular feature F93 and gypsum floor F88 during excavation.



Fig. 2. Area 2.1, room 15: floor level with baked brick piers and beam holes in the south partition wall.

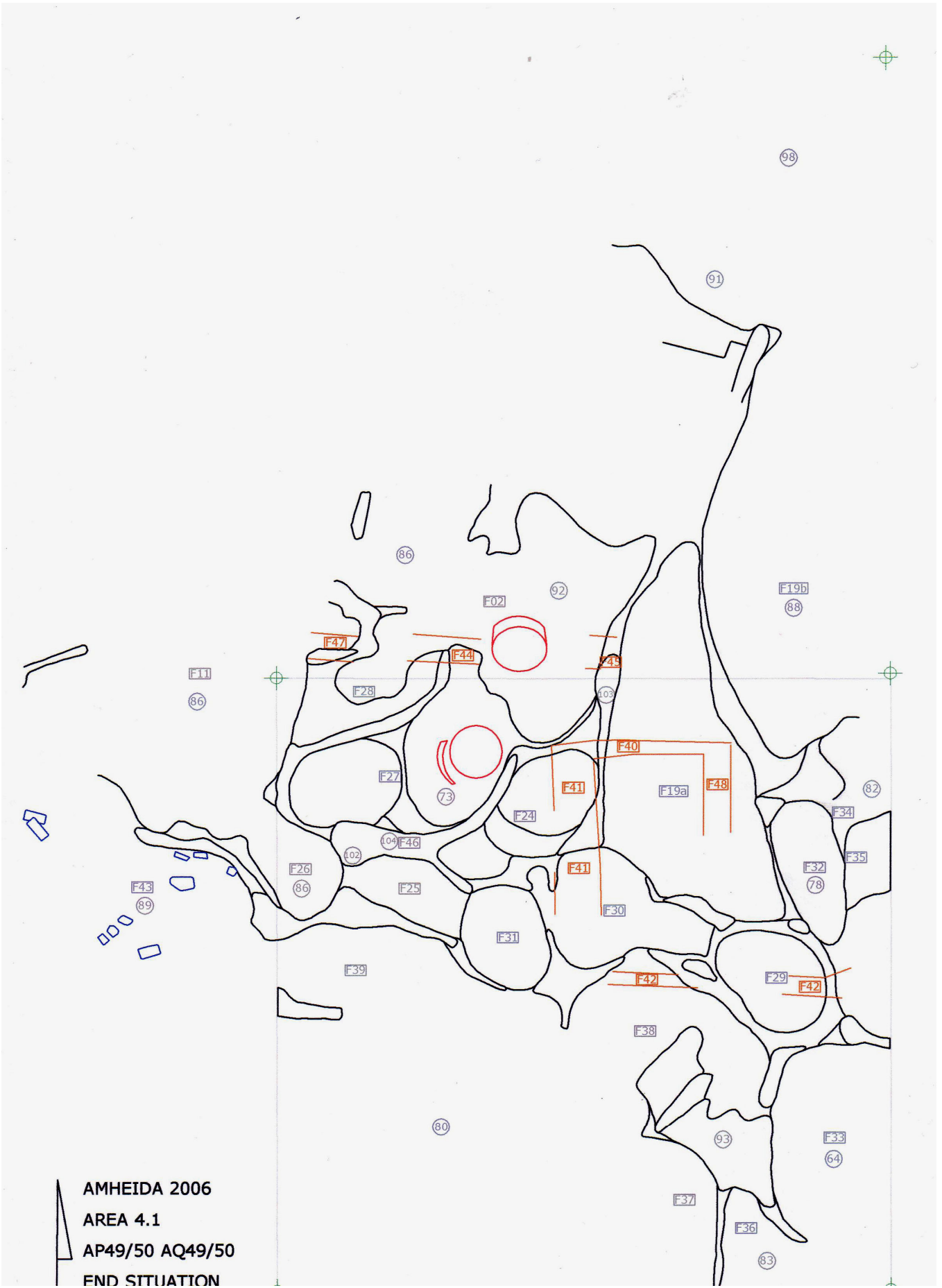


Fig. 4.



Fig. 5. Area 4.1, north part of AP50, aerial view.



Fig. 6. Area 4.1, FN 31, *Cavetto cornice*, *in situ*.

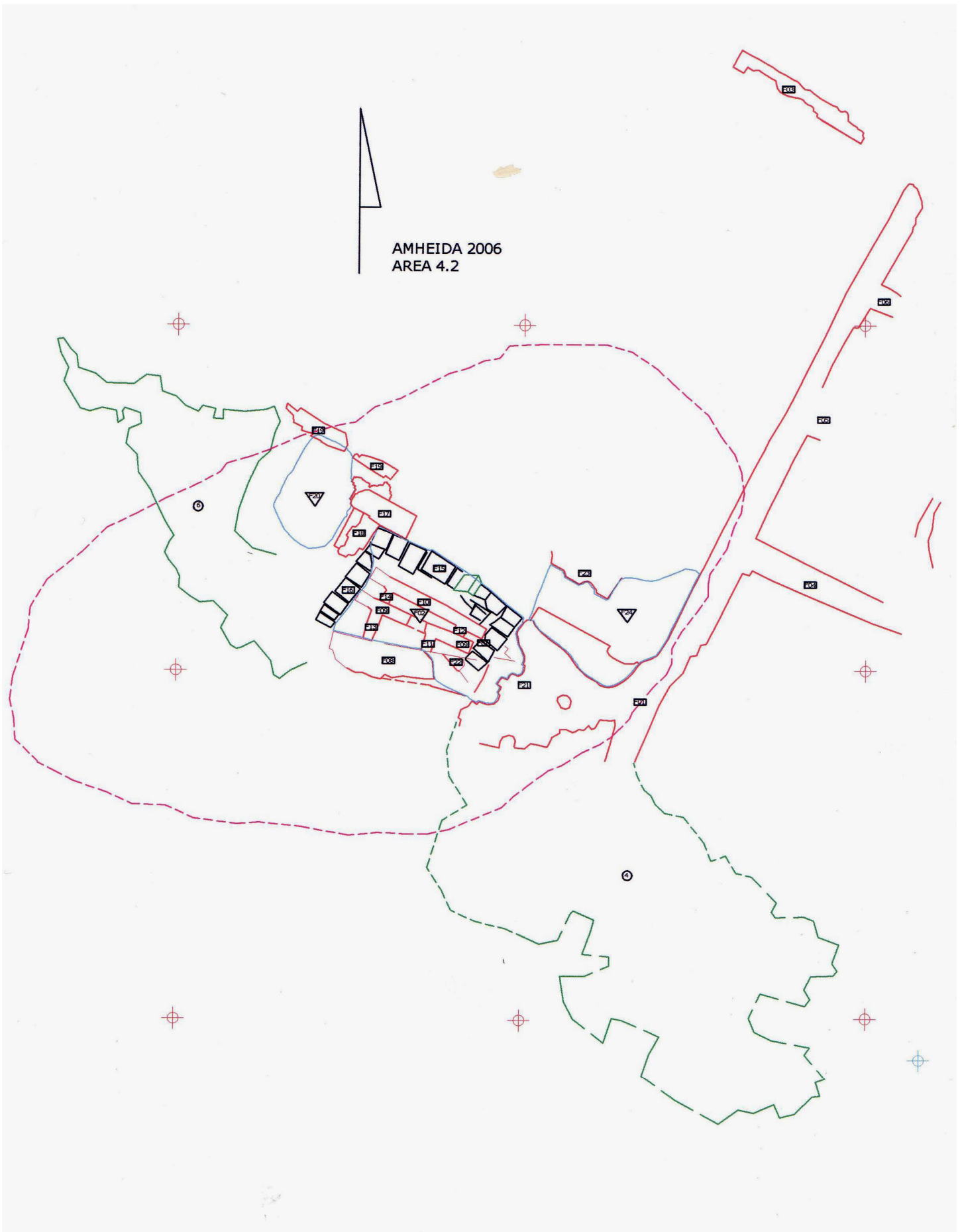


Fig. 7.



Fig. 8. Area 4.2, view from above, facing W.



Fig. 9. Area 4.2, view from above, facing S.

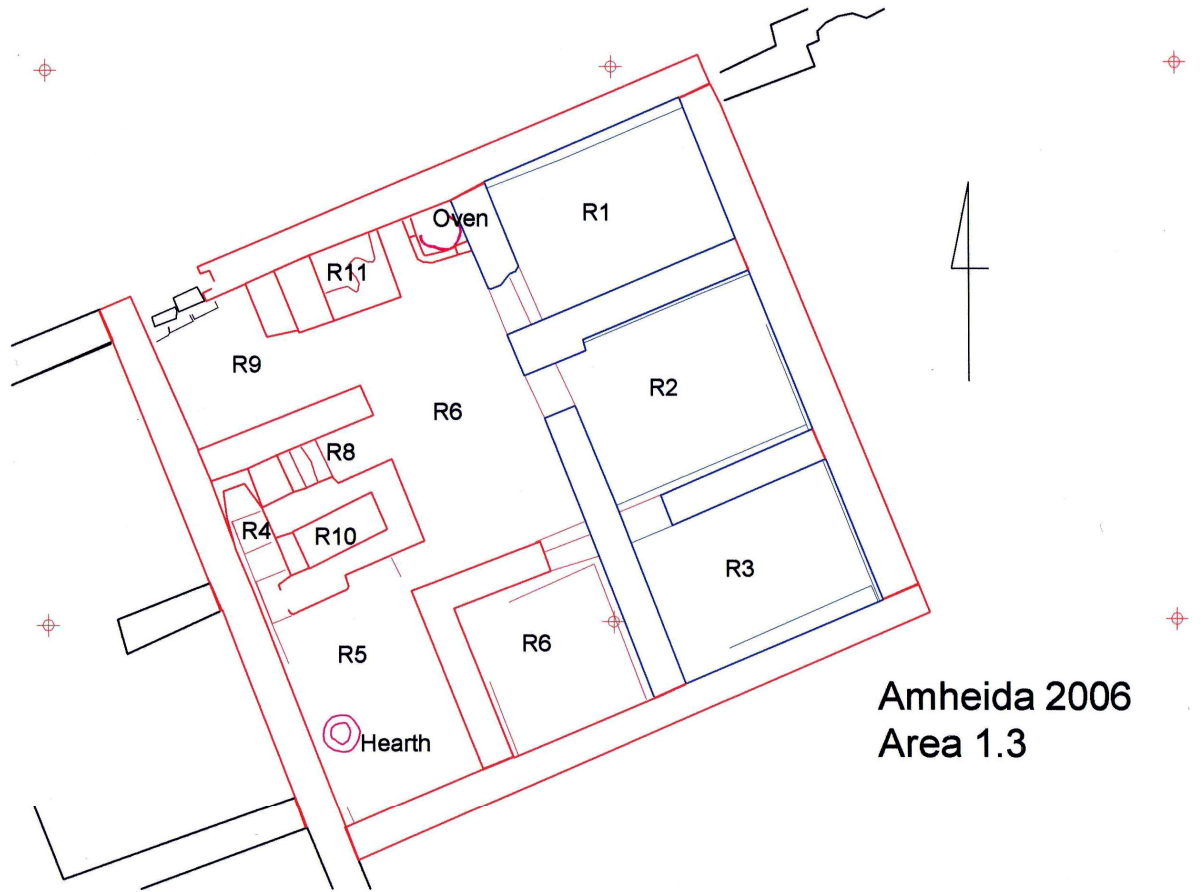


Fig. 10.



Fig. 11. Area 1.3, overview of the house.



Fig. 12. Area 1.3. The oven in Room 9.



Fig. 13. Area 3, S-E corner of the Pyramid.



Fig. 14. Area 3, S-E corner's collapse of the Pyramid.

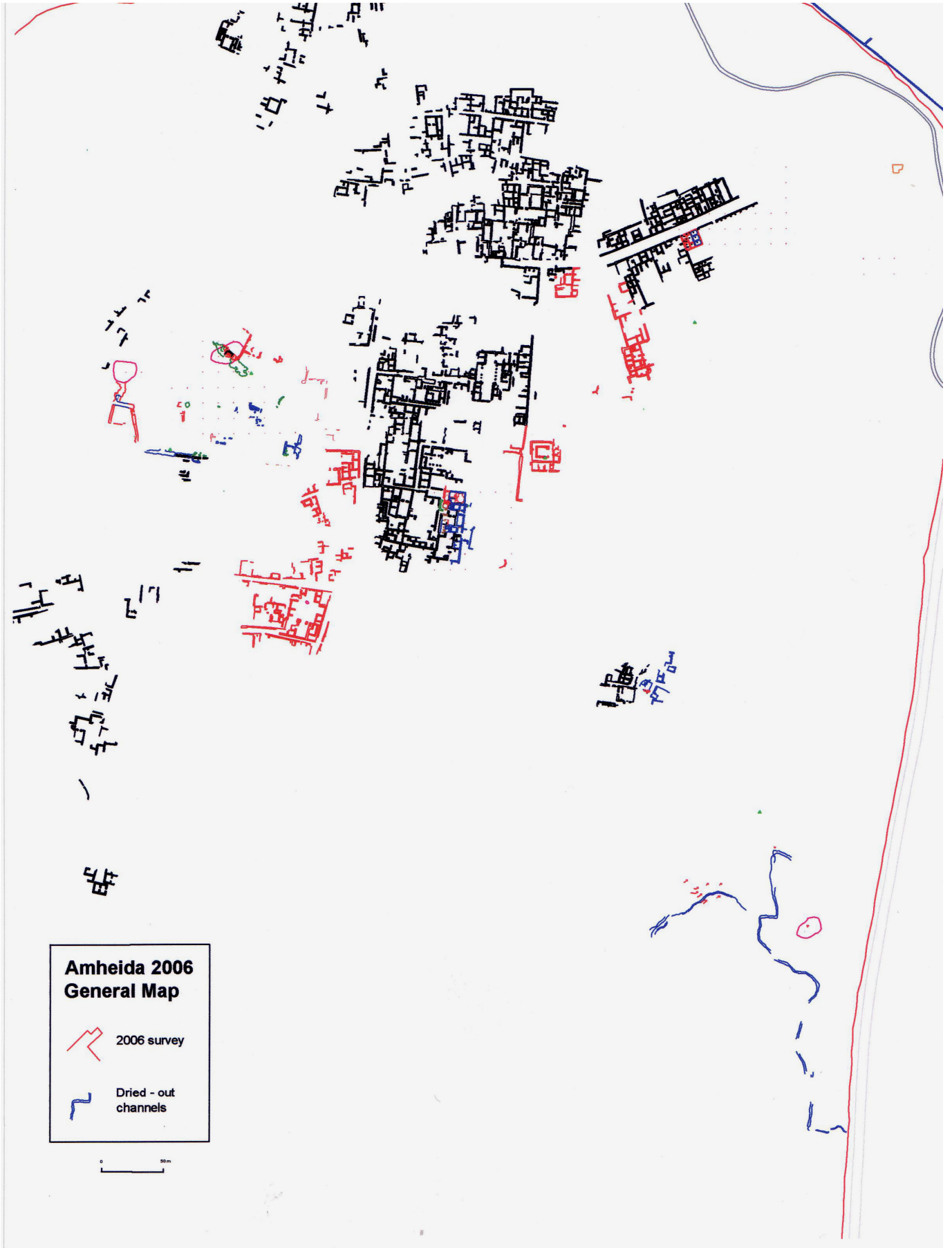
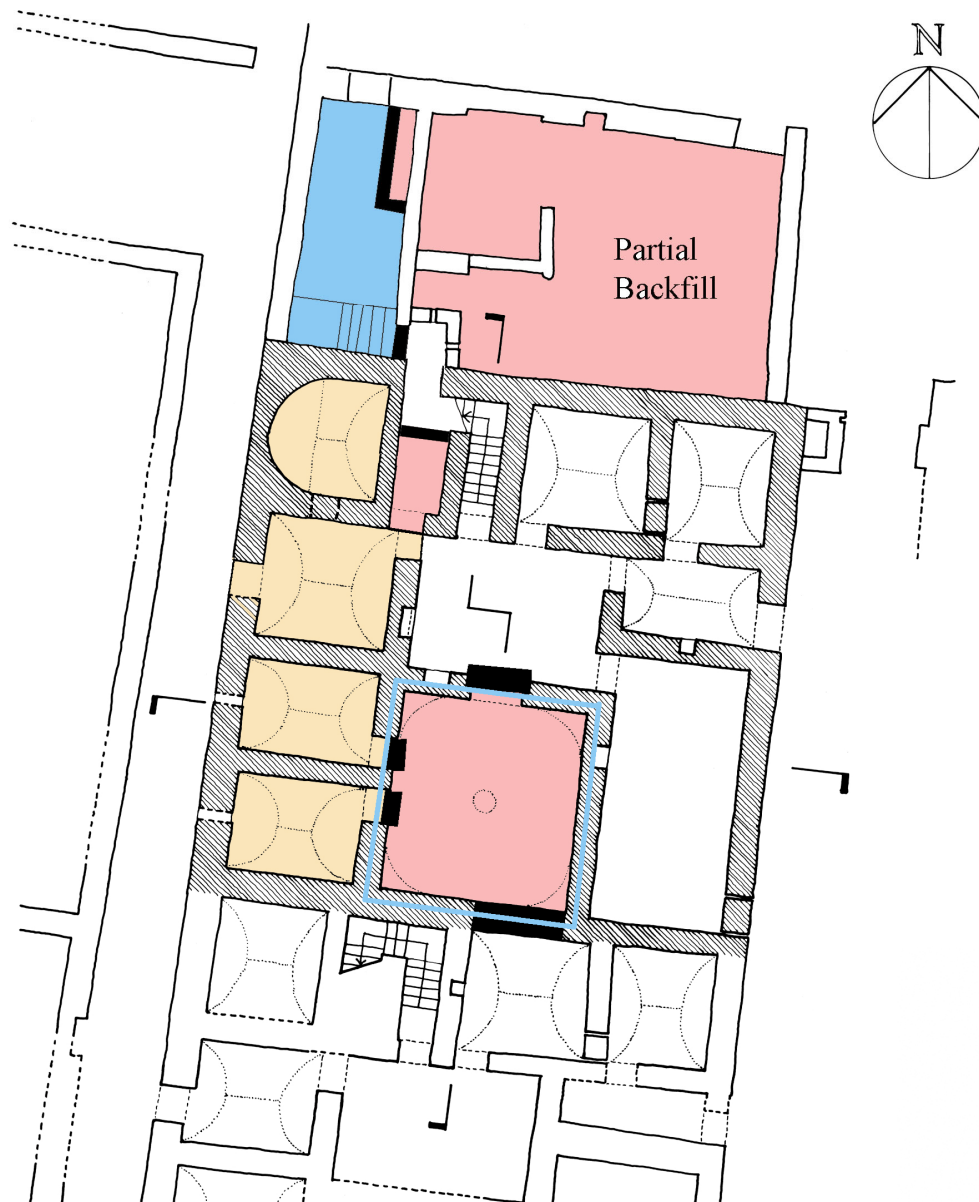


Fig. 15.



- New mudbrick blocking walls constructed 2006
- New temporary timber and jarrod roof
- Areas backfilled in 2006
- Unexcavated areas

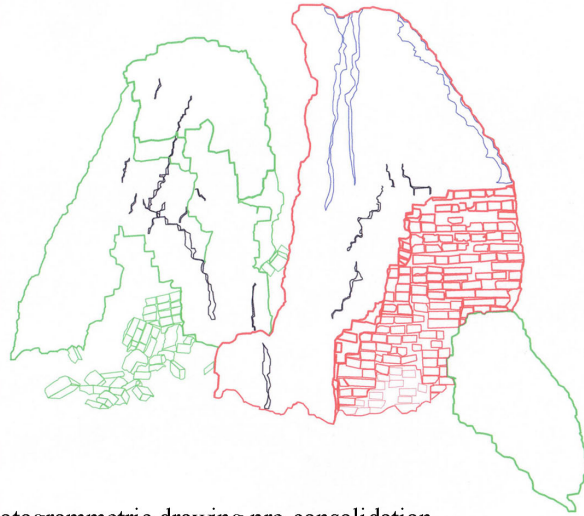
AMHEIDA ◊ ROMAN HOUSE

PLAN 0 5 10 m

Fig. 16.



South face of Amheida Pyramid pre-consolidation



Photogrammetric drawing pre-consolidation



Post-consolidation February 2006

AMHEIDA PYRAMID

Fig. 17.

Fig. 2. 12-21.01.06. Amheida. Temple Hill.
Conductivity survey. Contour interval 1 mS/m. scale 1:500

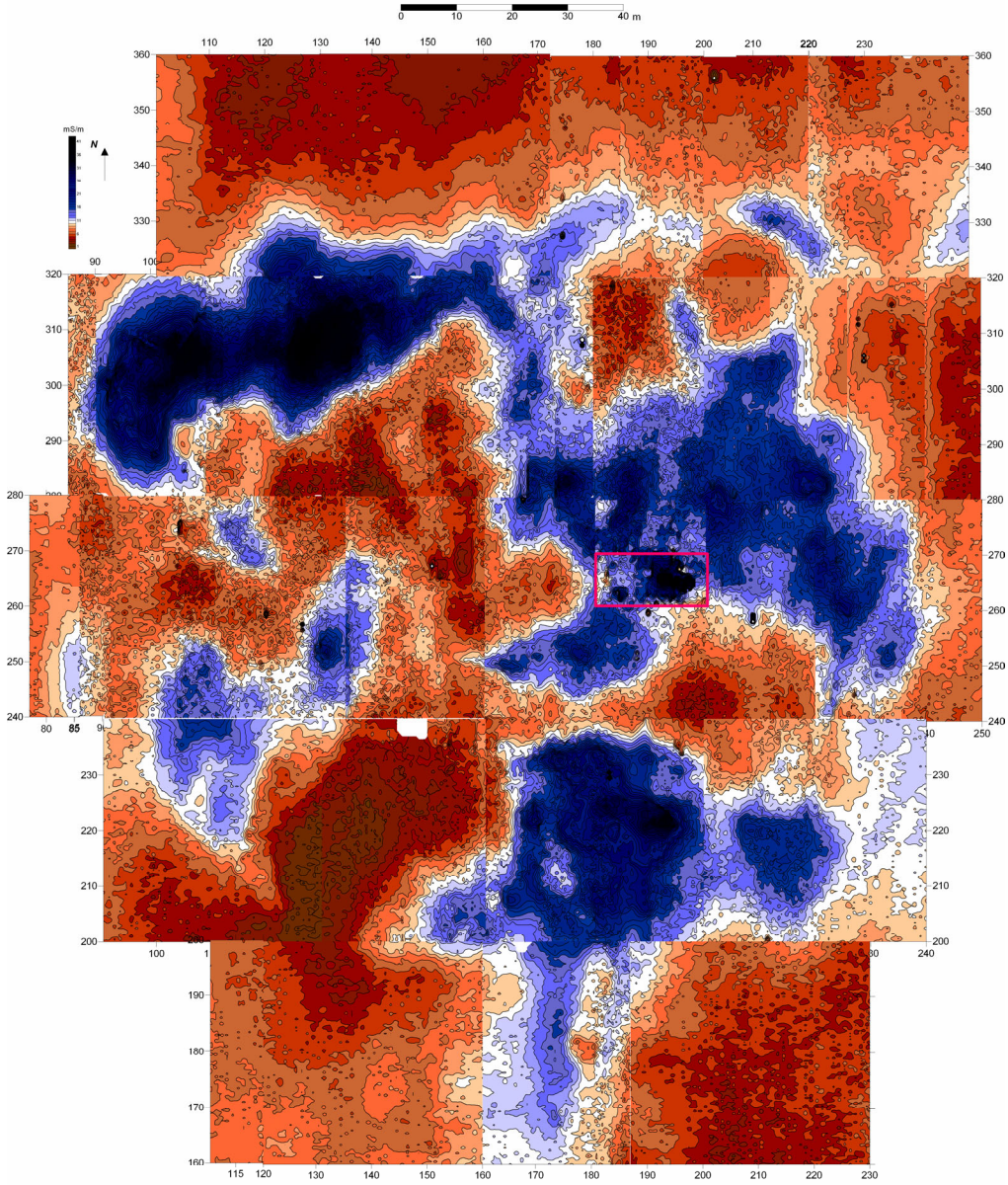


Fig. 18.



Fig. 19. Block with the image of Thoth.