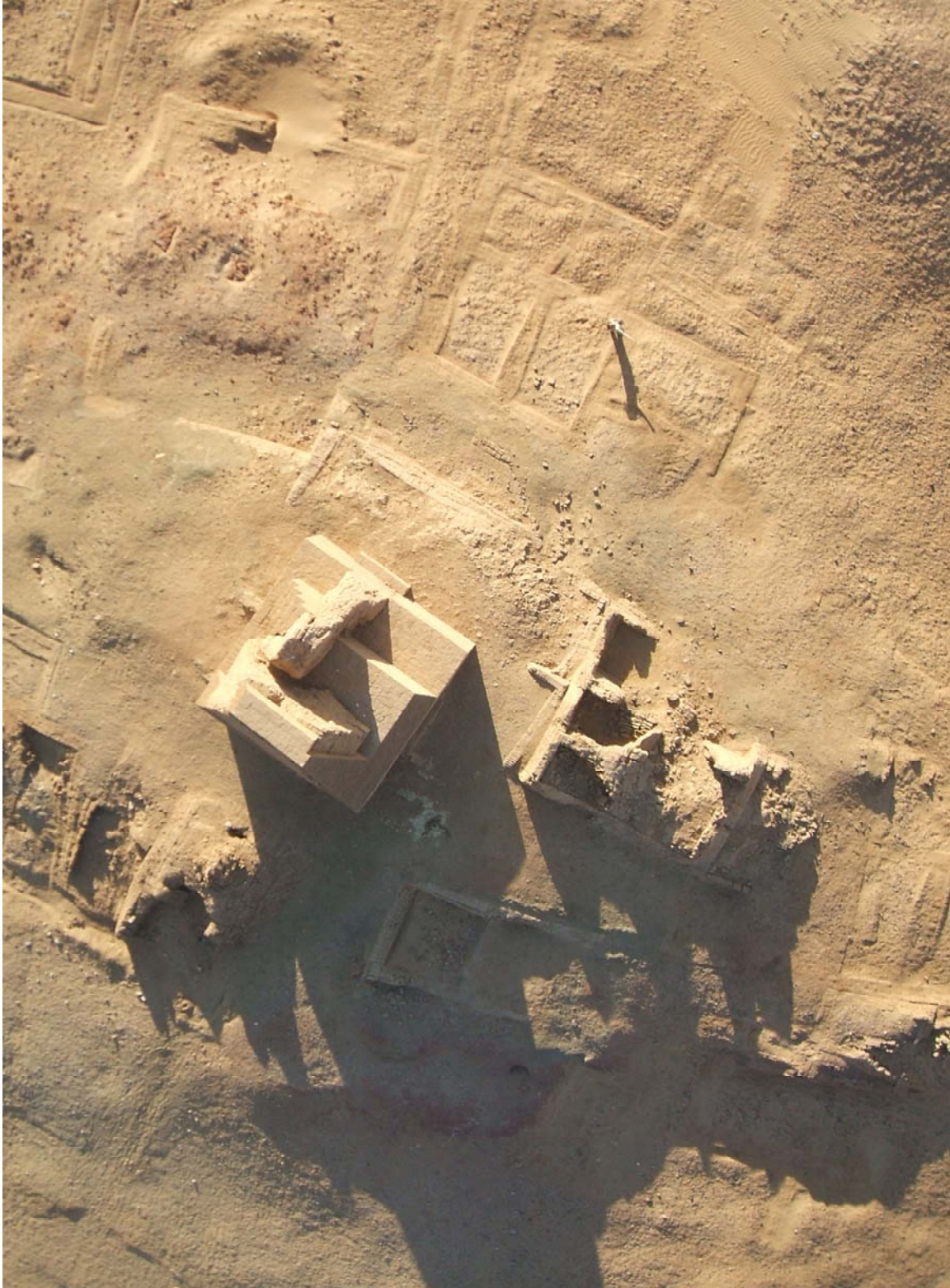


**Dakhleh Oasis Project**  
**Columbia University**  
**Excavations at Amheida 2008**  
**Site management plan**



## DESCRIPTION AND VALUE OF THE SITE:

Amheida is the largest and most important surviving habitation site of the ancient Dakhleh Oasis. It has a depth of occupation ranging from late Neolithic times (and perhaps even earlier) to the end of the fourth century AD, and the full extent of the ancient settlement still survives, having suffered a certain amount of illegal digging and plundering but no wholesale destruction nor modern reoccupation. The surface remains are largely Roman and late Roman in character. The cemetery areas have suffered somewhat more from plundering and from the extension of agriculture in recent decades, but large parts of the necropolis zones are still preserved. The overall extent of the site is very large, more than 2 square kilometres.

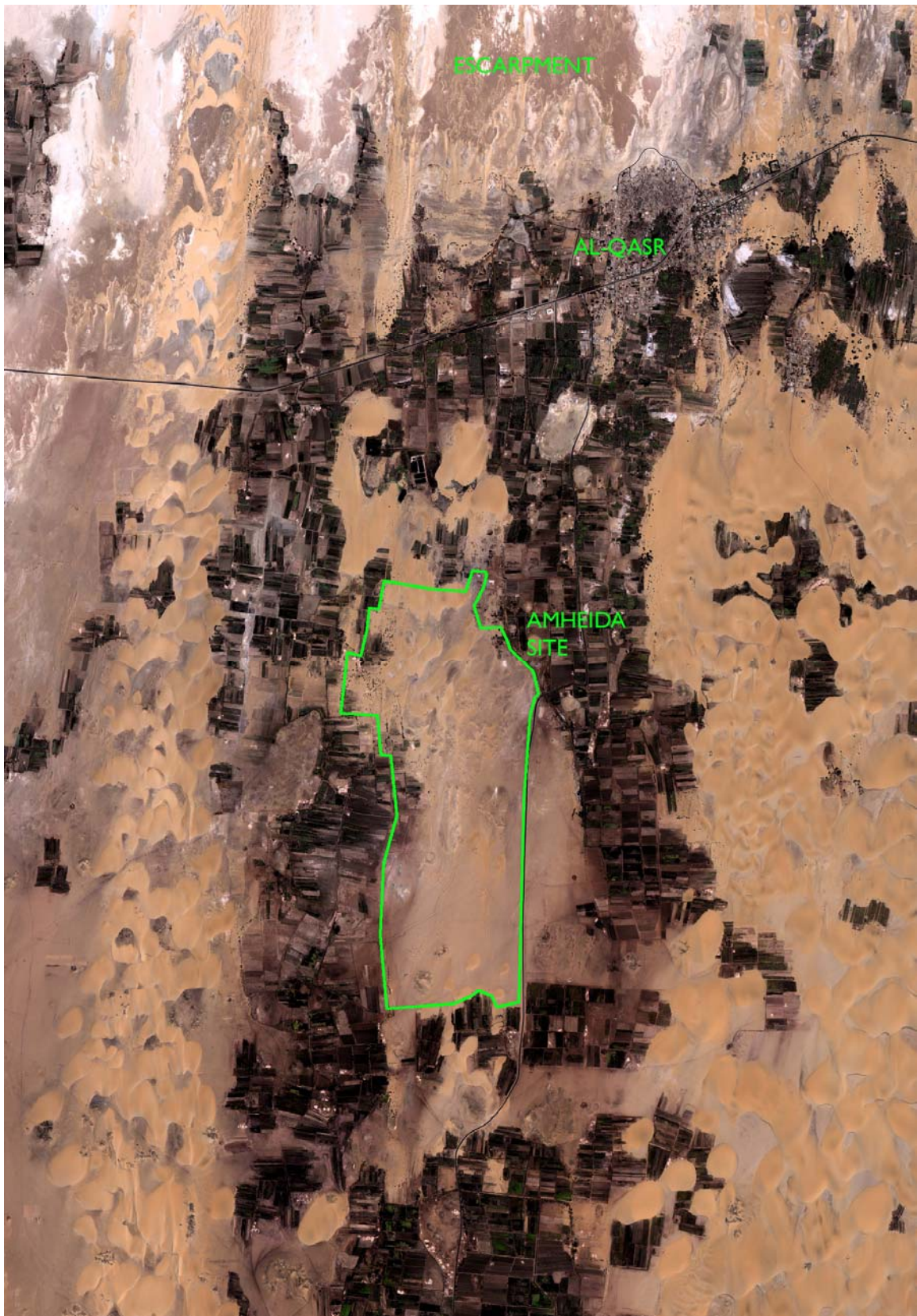
Archaeological exploration has so far consisted of two preliminary survey seasons and five years of excavations coupled with continuing survey. Because of its large size, the site is still in the process of being comprehensively surveyed in detail. Magnetometry and conductivity survey of selected areas has also been carried out. The excavations have concerned three areas: a large late Roman villa with wall-paintings (the "Villa of Serenus"), with northern extensions that at various times included a multi-room school and an economic service area, as well as an earlier bathhouse partly lying beneath this complex; the severely damaged and plundered temple precinct dating mainly from the reigns of Titus and Domitian (but including reused blocks from as early as the Theban 23<sup>rd</sup> Dynasty and extensively from the Saite period); and a middle class house.

In addition to excavation and survey, two standing mud brick monuments have so far been consolidated: the largest surviving Roman pyramid in the Oasis and indeed in all of Egypt; and a Roman tomb-tower. A storage magazine / workroom, guardhouse, and mosque are grouped in a small compound on the east of the site, near the entrance to the site from the asphalt road that runs parallel to the site on its eastern perimeter and extends from the famous Islamic town al-Qasr through three villages to rejoin the main north-south road not far north of Mut.

The expedition has thus far been affiliated with Columbia University, New York, and the results of this activity can be seen in reports posted on the project website: <http://www.learn.columbia.edu/amheida>

Because of the recent move of the project director, Roger Bagnall, from Columbia University to become Director of the Institute for the Study of the Ancient World at New York University, it is expected that project sponsorship will change before the 2009 season.

Like any mud-brick site, Amheida poses numerous challenges to both excavators and custodians. Its buildings are easily damaged by visitors, and when standing above ground level they are highly vulnerable to erosion by the strong winds prevalent in the oasis. The quality of plaster used on the walls was generally not very high, and it is prone to fall off the walls within a few years after excavation. For all of these reasons and more,

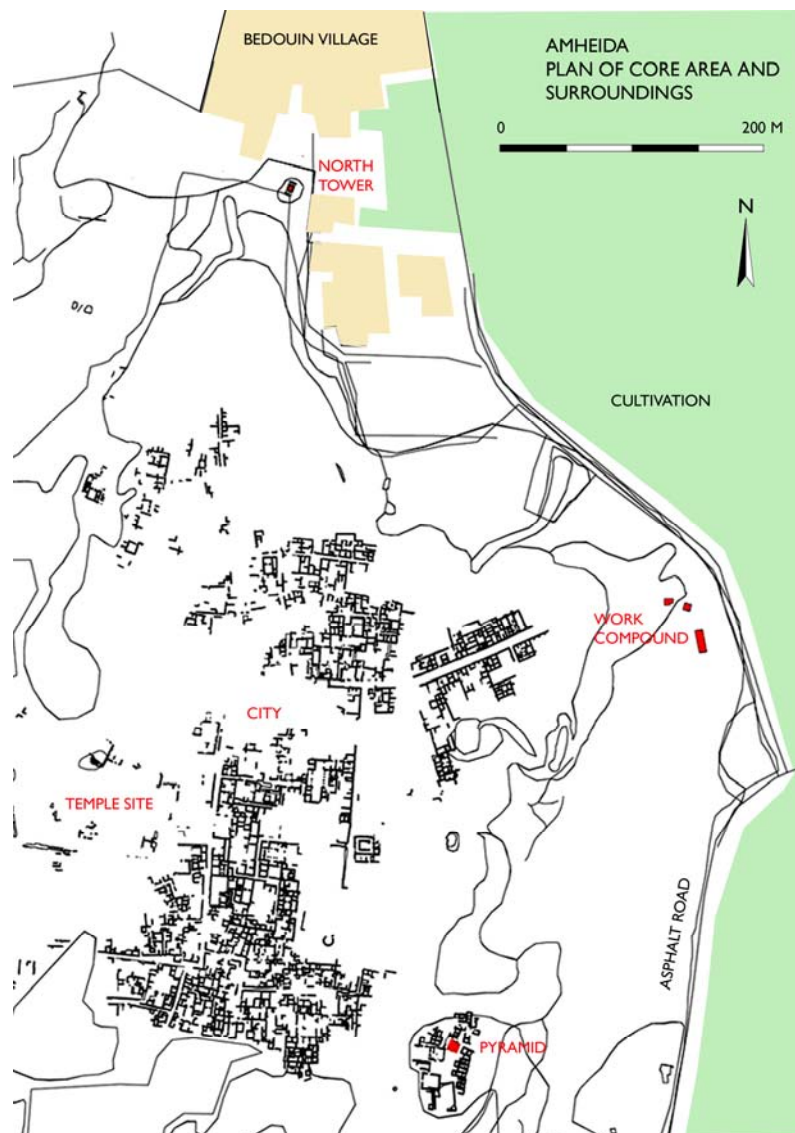


Satellite image showing context of the site

responsible excavators generally backfill their work, and at Amheida excavated rooms and buildings are routinely backfilled at the conclusion of each season. At the same time, both the excavators and the local inspectorate are deeply interested in ways of presenting the results of the excavation to the growing number of visitors to the oasis as well as to the interested local population.

The plan for the development of the site that is proposed here responds to the major threats to its integrity and simultaneously to the need for enhanced site access and interpretation to the public. It is focussed on three areas considered to be of the highest priority, detailed below:

- 1 The protection of the boundaries of the site;
- 2 The development of off-site but adjacent facilities to allow the site to be interpreted to visitors;
- 3 Visitor routing through the site and on-site attractions.



## **1 BOUNDARIES OF THE SITE:**

The archaeological area of Amheida extends considerably to the north and south of the land currently owned by the Supreme Council for Antiquities, according to information received from the Dakhleh Inspectorate. Cemetery areas and the southern (red) pyramid are, for example, outside this zone. The development of areas containing antiquities that lie outside land owned by the SCA is, however, theoretically subject to the agreement of the SCA who have the power to block such development. The Dakhleh Inspectorate has, indeed, already acknowledged the true extent of the site by building a new guardhouse to the south, outside the boundary it technically controls, and by installing some metal stakes as boundary markers on the northern and western perimeters.

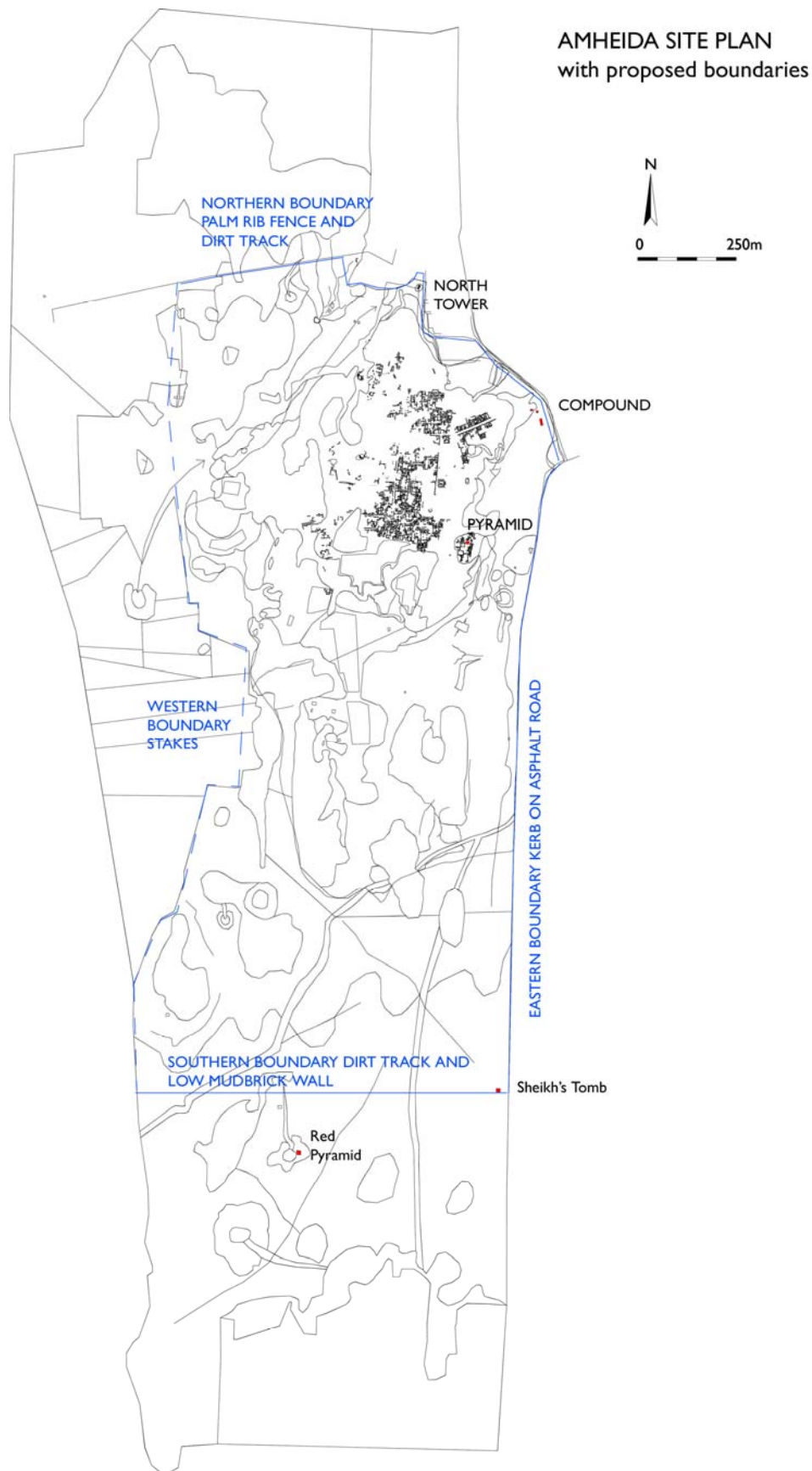
### **Threats to the site:**

The site cannot be easily protected from individuals on foot, or from animals. Tomb robbers continue to operate at will in the cemeteries south of the core area. The main physical threats to the site, however, come from vehicles, from uncontrolled agricultural expansion, and from new construction. Off-road cars, mechanical diggers, and tractors are all capable of doing a considerable amount of damage to the archaeological resource, whether intentionally or unintentionally. Encroaching cultivation is a particular problem on the western boundary of the site, and all the land to the east of the main road (where some archaeology is located) is about to go under cultivation. On the north of the site, the Bedouin village has grown considerably in the last twenty years around the most northerly standing remains.

These threats require immediate action to guarantee the integrity of at least the core area of the site where the bulk of remains lie. The new guard house constructed by the SCA in the southern part of the site but presently unoccupied will one day provide protection additional to that already offered by the existing guardhouse on the north-east edge of the site (an area which has a good view of the road but almost no view of the most vulnerable areas of the site). Discussions with representatives of the Dakhleh Inspectorate have been held, and the following proposals are now agreed to constitute the best approach to safeguarding the site, without totally compromising relationships with the local population or the appearance of the site when viewed from adjacent areas (such as the asphalt road).

### **1.1 Eastern Perimeter:**

Neither of the current guardhouses will prevent vehicles from continuing to access the site, so it is therefore proposed to create a physical barrier between the road and the site. Of the three options available (a fence, a ditch, or a curb to the edge of the road), the installation of a concrete curb (1,600 linear metres) beside the road is recommended for the following reasons: it is more durable than a palm rib fence, needs little to no maintenance, is significantly cheaper than a steel fence, and does not risk undermining the road itself in any way. The curb will not appreciably affect the perception of the site from the road itself, unlike a fence.



To enforce the effectiveness of the curb, there is also a need for an additional barrier between the dirt track road leading to the village to the north-east of the site and the archaeological area. This would deter the passage of people and herded animals through the site. The Dakhleh Inspectorate have expressed the desire to create a new dirt track route parallel to the water channel in this area and skirting the existing habitation, requiring the removal of some existing mounds of natural *tafl*

and levelling the ground with a mechanical digger. It is proposed that this fence should be constructed on the inside of this road as a traditional palm-rib woven fence on a mud upstand (*zarb*). Its exact route will be determined with the Dakhleh Inspectorate on site, but an initial estimate of the length of the fence is 700 linear metres from the asphalt road to the North Tower. The building of the fence could be carried out in stages, with a preliminary section of 500 metres. The fence would have openings / gates in it leading to the compound comprising the workroom, guard house, *musalla*, and future replica Roman Villa and Relief Block Display building, and would extend all the way to the asphalt road [see plan, below].

### **1.2 Northern Perimeter:**

The northern extension of the site is marked by a mud brick Roman tomb-tower, consolidated in 2008. It is proposed to continue the eastern boundary up to and around this point, skirting the edge of the Bedouin village. This is to be carried out with a traditional palm rib fence. To the west of the village, a dirt track road leads through a dune-field to cultivated areas on the west side of the site, roughly following an existing line of electricity poles. A new boundary in the form of a line of metal angle stakes set in concrete with galvanised barbed wire is proposed to run along the edge of the dirt track up to the western perimeter of the site: a total distance of 500 linear metres.

### **1.3 Western Perimeter:**

Along this side of the site, cultivation continues to encroach. Here it is suggested that a symbolic limit to the site be established with a line of metal angle stakes, set in concrete, at intervals of 50 metres. The Dakhleh Inspectorate have undertaken to monitor this boundary, which has an approximate length of 2,000 linear metres, in order to prevent further encroachment on the site.

### **1.4 Southern Perimeter:**

Another dirt track runs through the site from the location of a modern Sheikh's tomb next to the asphalt road on the east to a group of farmers' huts on the west. It is proposed to adopt this track as a boundary that can be practically monitored by the site guards after building a low mud brick wall along its full length to meet up with the western perimeter (750 linear metres)

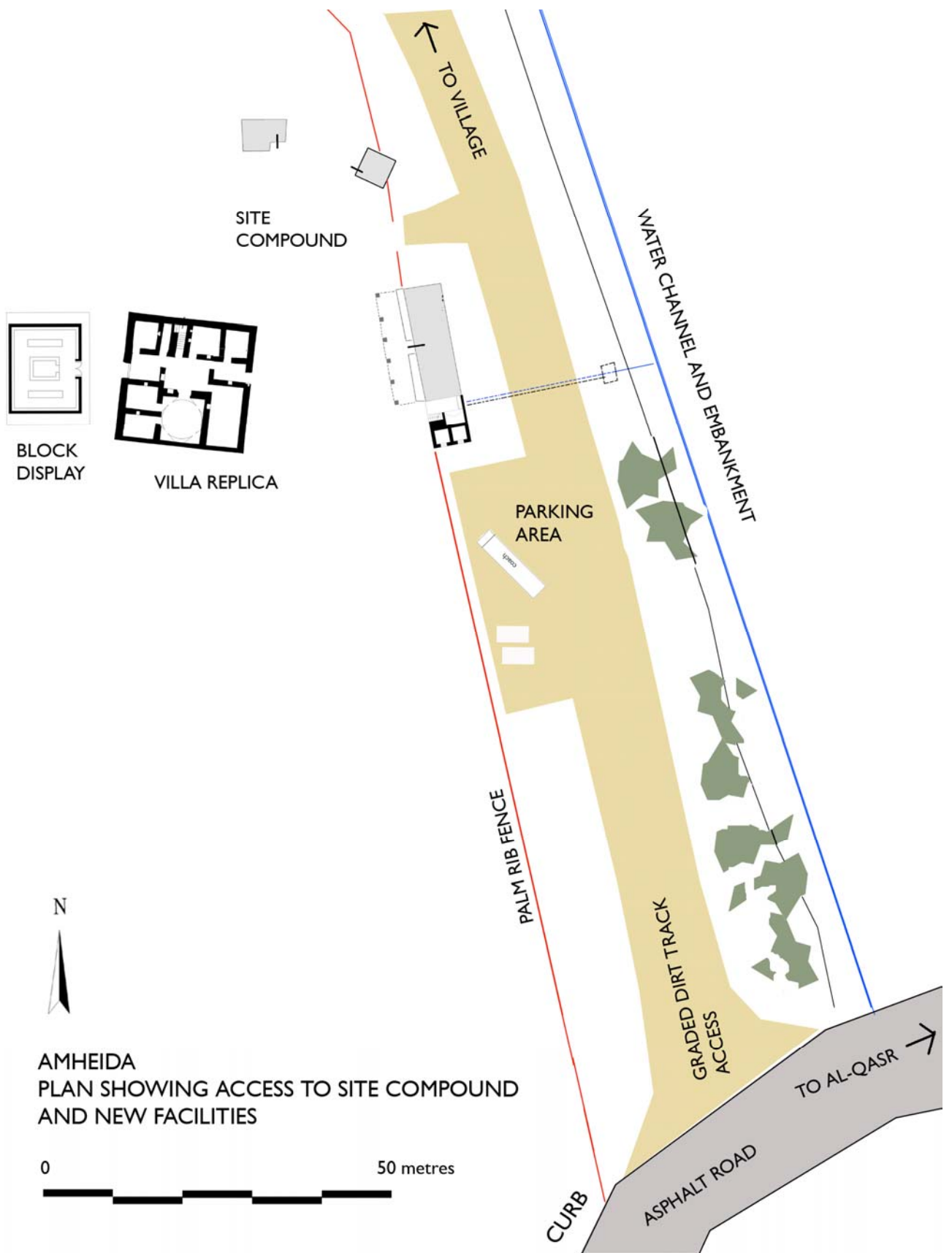
## **2 OFF-SITE FACILITIES**

### **2.1 Infrastructure**

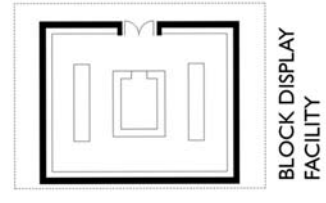
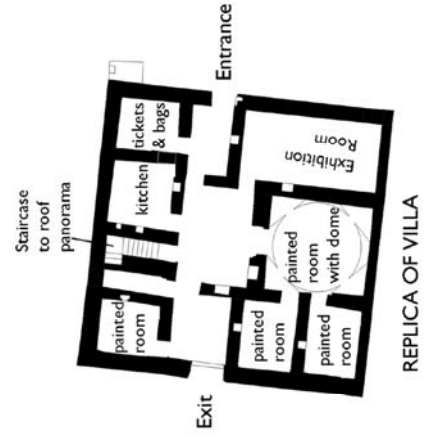
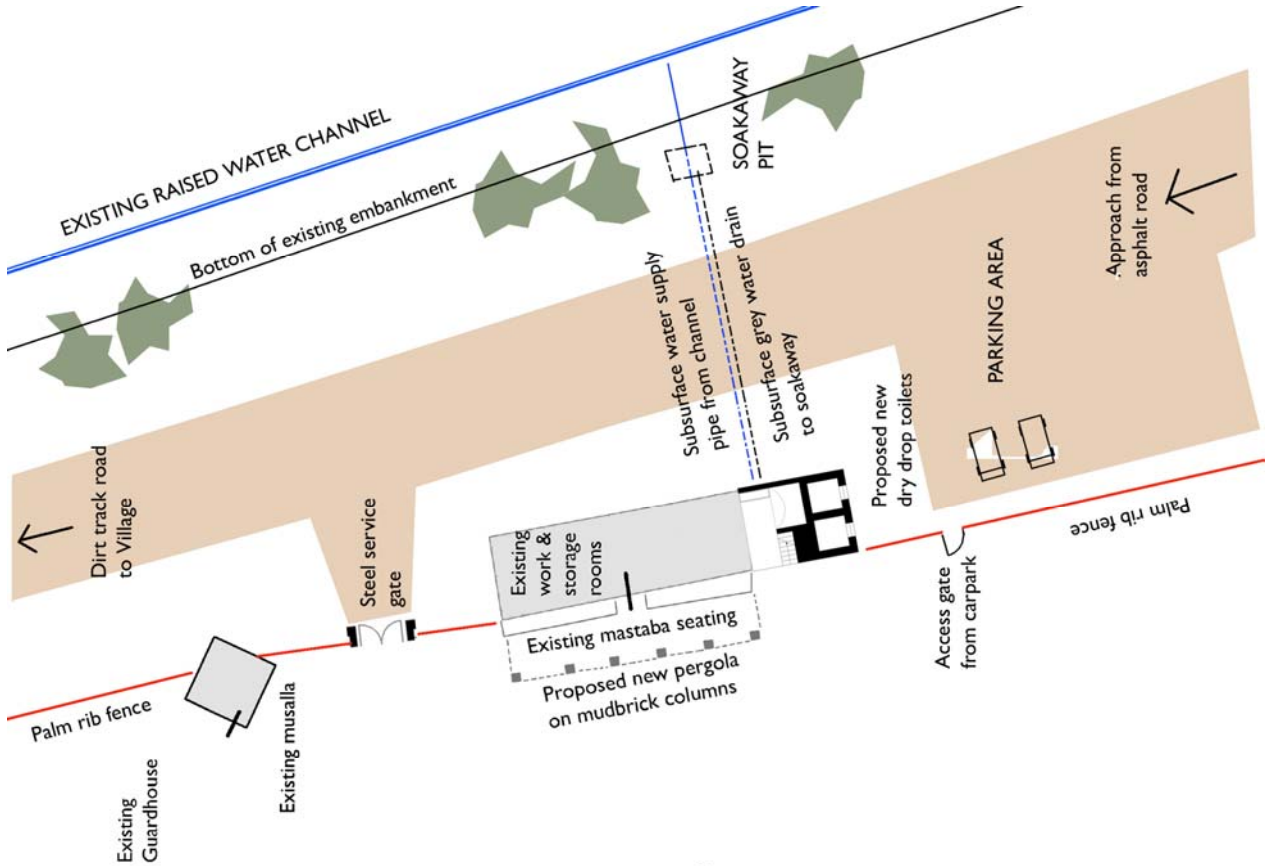
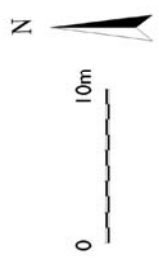
The compound of single storey mud brick buildings near the asphalt road to the north-east of the site currently comprises a dig store/work-room, a guard house, and a small mosque. The area occupied by these buildings is flanked to the east by a modern raised water channel, and is archaeologically devoid of interest. Any further facilities should also be constructed in this area to avoid damage to the site, and it is intended to improve the approach to the compound from the road using a mechanical digger to re-grade the slope from the road down to the compound. It is also proposed to add a shaded structure in front of the existing work room (mud brick columns, casuarina timbers and palm ribs) and dry-drop toilet facilities to the immediate south of the work-room. These toilets will be accessed by a short staircase, and will consist of a concrete foundation with a cement-plastered fired brick lower storey (with an external cladding of mud bricks and mud plaster) and an upper storey of mud brick. Two taps will be provided over a terrazzo trough/sink at ground level. Water will be supplied direct via a gravity fed pipe from the nearby water channel, and waste-water channelled to a remote soak-away pit filled with gravel. At present there is no legal supply of electricity to the compound: an illegal cable feeds the guard house. This situation will have to be regularised if any power is to be provided to the work room and proposed new visitor facilities.

The proposed replica of the Villa of Serenus and Temple block display facility will occupy the ground to the west of the work room, with a gap between the latter and the new buildings that is sufficient to allow the guards a clear line of sight to the road from their room. An area for vehicle parking will be provided outside the line of the palm rib fence running along the eastern perimeter next to the compound.





**AMHEIDA ROMAN VILLA**  
 Proposed location plan of  
 villa replica and associated  
 structures March 2007



TO ARCHAEOLOGICAL AREA

**2.2 Replica of the Villa of Serenus**



Complex of the Villa of Serenus in situ

Owing to its fragility, the 4th century AD Villa of Serenus can never be visited and it has now been backfilled following in situ conservation and the removal of loose decorated plaster fragments. As the Villa is of great intrinsic interest, however, it is proposed to build a full scale replica of the building off the site adjacent to the other site facilities (see Temple Block Display, below). An outline specification for the construction of the Villa is as follows:

### **Setting out**

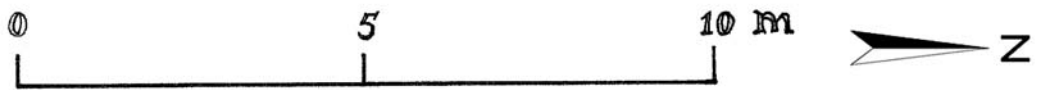
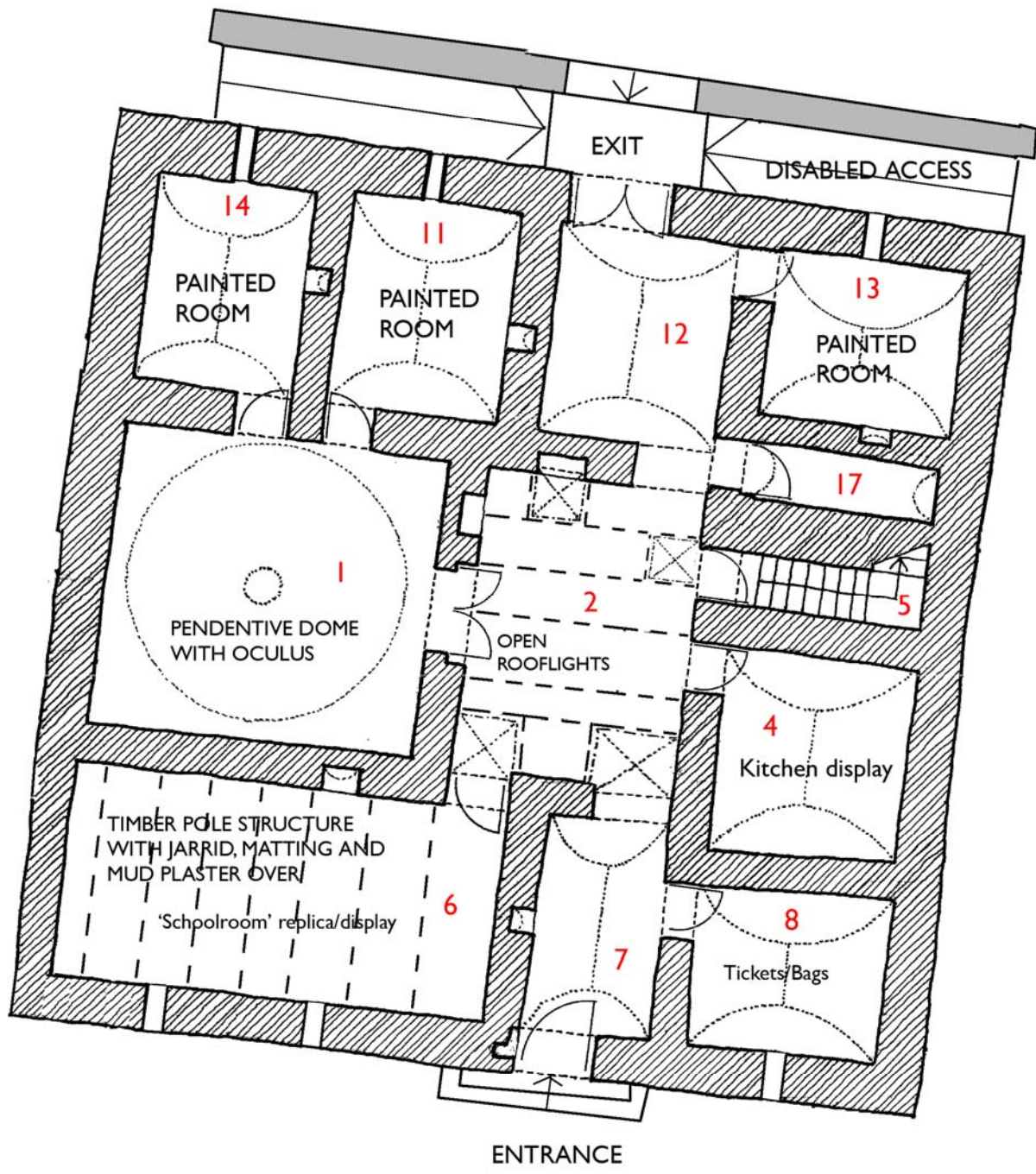
The corners of the villa, which has a plan footprint of 15 x 15 metres, are to be set out by total station to match the orientation of the original exactly.

### **Levels**

The interior of the original villa was reached by several descending steps. To avoid major excavations to replicate the entrance condition, and to give the entrance some architectural presence it is proposed to adopt an internal finished floor level of approx 40cm above external ground level. The entrance will be approached by two steps, and a ramped disabled access provided at the exit, with a mud brick retaining wall and *tafl* fill. Steps and ramps will be finished with a flat fired brick made to special order locally (29 x 13 x 5 cm).

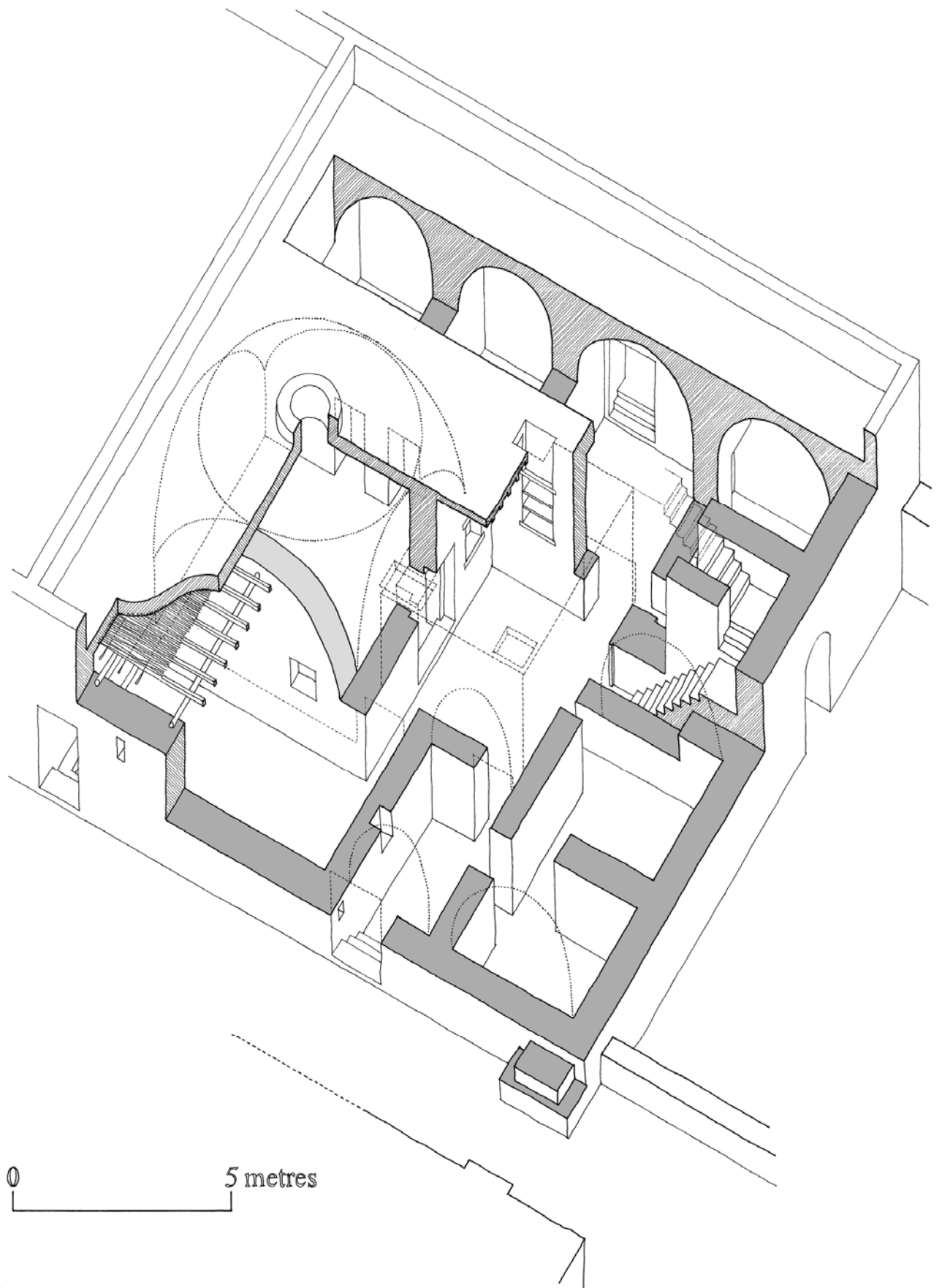
### **Foundations**

Trench foundations under each loadbearing wall to be dug to a probable depth of 1 metre, dependent on soil condition. The trench will be filled with 30 cm of clean compressed sand and approx 70 x 70 cm of limestone rubble set with lime/sand mortar.



AMHEIDA VILLA RECONSTRUCTION  
Schematic Plan

NUMBERS IN RED INDICATE ARCHAEOLOGICAL NUMBERING SYSTEM REFLECTED IN DATABASE



Villa of Serenus: Axonometric Reconstruction from North-East

## **Masonry**

Mud bricks for construction will be made on site following the dimensions of the original (35 x 17 x 8 for walls and 36 x 21 x 6 for vaults). Bonding patterns will be replicated. The mix will be local clay, sand, and crushed old bricks. There will be no straw temper to avoid termite damage. To increase the strength of the bricks and reduce wastage due to brittle bricks cracking, a fine synthetic fibre will be included in the bricks as a temper. This will not be visible, and the stronger brick will be particularly useful for the construction of vaults. Mortar for mud brick masonry will be made from local clay, sand, crushed bricks, and a small percentage of fly ash.

It is proposed to construct the shell of the building in two phases:

- 1 Foundations and walls to height of springing of vaults
- 2 Barrel vaults, dome and timber/palm rib roofs.

These phases will be separated by an interval of time of not less than two months to allow for the walls to shrink/crack/settle.

## **Flooring**

The interior floor finish will be 10cm of crushed limestone (*dakka*) in a lime mortar. This will increase the wear resistance of the floors without introducing alien materials. The steps (entrance and stair to roof) will be executed in a made to order flat fired brick, replicating the original (29 x 13 x 5 cm).

## **Wall finishes**

All internal and external surfaces of the villa are to be plastered in mud. The original chaff temper will be substituted with a synthetic fibre. At least one internal wall will be left un-plastered in order to demonstrate the bonding pattern used in typical Roman construction. In areas without paintings, the inner surfaces of the walls will be lime-washed following the original. All barrel vaults will be lime-washed.

Plastered surfaces that will be painted require special consideration. A chemical analysis of the original final plaster coat has yet to be carried out, but it would seem that this may be a thin coat of gypsum plaster over the mud plaster. A sample of the plaster finish should be prepared at an early stage of the project to allow for testing of paint pigments/varnishes.

A particular problem is to avoid cracking in the plastered surfaces. The structural shell of the building will be allowed to stand for at least six months or over the summer in order to allow for drying out and cracking over the full diurnal temperature range. The mud plaster base coat will be carefully applied and only allowed to dry out very slowly.

## **Wooden roofs**

Two rooms in the original villa had wooden roofs. These are to be recreated with wooden beams (acacia or casuarina) and palm ribs (*jarrid*) with a layer of palm leaves and mud mortar over. Palm ribs and leaves are typically left untreated in modern vernacular construction in the oasis, while timber beams are treated with a chemical insect repellent.

## **Wooden fittings**

Door and cupboard lintels will be made of locally sourced acacia wood (*sunt*) which will be treated with sump oil to discourage insect attack for these critical structural elements. Doors are to be designed as 'pivot and plank' doors with handmade nails. Some doors may be constructed as lightweight palmrib doors over a timber frame. Surviving doors in settlements such as al-Qasr will be studied for precedent. Shelves in cupboards to be rough sawn planks of treated acacia wood.

## **Roof**

The surface of the roof will be mud mortar. One area of the roof designated as a viewing platform may have a separate treatment (a profiled metal deck spanning across vaults with lime screed over) to prevent damage to the surface of the roof from traffic and heavy live loading of the vaults beneath. This area will be screened with a mud brick parapet.

A number of openings in the roof (to Room 2) are proposed. The original design of these skylights is unknown. A new detail will have to be designed that reduces the ingress of windblown sand into the interior. This may involve fixed glazing in vertical timber frames, which should be carried out in 4mm toughened glass, perhaps with a reflective coating to reduce solar gain. Glazing should be two overlapping panes with an air gap between to allow for ventilation, and should face north

All plastered roof surface will be laid to fall externally, but no rainwater spouts will be provided.

## **Windows**

High-level narrow (20cm wide x 40cm high) windows will be provided in all external walls centred on vaults, and located just below the apex of the vaults. The internal sills will be sharply chamfered. Two high-level windows will also be provided to Room 6.

## **Electricity**

Generally there will be no artificial light in any of the painted rooms. Elsewhere, LED lighting is favoured because of the long life of the light source (25 years), and the small size of the fittings. LED spot lighting can be provided in niches or purpose built display cases. Cabling will be run in subsurface plastic conduit to the required positions with a fuse box located in Room 8. Additional LED lighting will be provided for in two display areas within Rooms 4 and 6. The practicality of running the electricity for lighting from a single solar panel will be investigated.

## **Wall paintings**

Replica wall paintings will be carried out by the Mission's artists using projection and tracing techniques. Pigments and varnishes to be tested. A varnish is recommended to avoid damage from accidental rubbing or scratching of the painted surface.

## **Display cabinets and signs**

No original artefacts will be on display in the replica villa. If signage is to be mounted in any room, provision should be made in the form of timber beams let into the brickwork which will allow for firm fixings otherwise denied by mud brick walls. If exposed, signage should be on etched aluminium 2mm thick plate. As light levels will be low, signs can be reproduced in colour without fear of UV degradation.

## **Maintenance**

The Amheida Mission undertakes to perform a yearly maintenance of the building and its displays for as long as work is ongoing at Amheida.

## **Schedule of Work**

The schedule of work is intended to dovetail with seasons of the archaeological mission and the natural seasonal rhythm of the oasis which precludes building during the summer months.

## THE WALL PAINTINGS IN THE VILLA OF SERENUS

The painted surfaces in the Villa of Serenus are executed on a thin layer of gypsum plaster over a thicker mud plaster. They can be found in three vaulted rooms (Rooms 11, 13, 14) and the central domed chamber (Room 1). The vaulted rooms have decorated dados, with a variety of geometric patterns, as well as the inclusion of more naturalistic detail such as vines and birds.



Decorative dado with vines and birds

The principal domed chamber is fully painted, with decorative motives on the lower register and figurative motives on the upper register. The figurative motives show several mythological themes, as well as more fragmented scenes taken from the everyday life in a Roman city at the beginning of the 4<sup>th</sup> century A.D. (date of the Villa). On the North Wall, to the right of the entrance door, Odysseus is seated while his old nurse Eurycleia washes his feet. She recognizes him contrary to his wife Penelope, as shown by her absent look. The East Wall is covered by the most impressive succession of figures. From the left corner we find a personification of Polis (the ancient city of Amheida), then 6 Greek gods in file (Poseidon, Dionysus, Apollo, Hermes, Hephaestus and Helios) who stare at the goddess of Love, naked in her bed with her lover. The scene depicts of course the discovery of the adultery of Aphrodite and Ares by the light of the Sun personified.

On the opposite wall, in the South-West corner, only fragments remain of the decorative scheme such as the head of a horse, and a couple playing chess as well as a complete familial scene. A couple of Roman notables with their children attend a banquet while small servants play music and pour wine. It is likely that the center of the wall was decorated with a scene of music contest, maybe orphic, between two main characters wearing Phrygian caps as well as a scene of a procession with chariots in front of the buildings of a city. These two scenes are no longer on the wall, but fragments of them remain in boxes. Finally, back to the Northern Wall on the left of the door stands Perseus rescuing Andromeda from the sea monster, holding the head of Medusa. Underneath we find a Nilotic scene with wine amphorae and, on the side, a winged figure crowned with a nimbus.





Detail of figurative scene showing the Gods discovering the adultery of Aphrodite

## Methods of re-construction

It is proposed to recreate the paintings in the Villa by hand, using the data already assembled by photogrammetric recording and drawings. Where colours and decorative motives are obvious, such as with the geometric patterned dados, missing sections of paintings will be fully represented in the replica. As far as missing sections of figurative scenes are concerned, outlines of figures will be provided if they can be reconstructed, but areas of major loss will be left blank on a neutral ground. It may also be possible to recreate part of the fishscale pattern of decoration that existed on part of the dome through a close study of surviving fragments.



Sample photogrammetric elevations of Room 14

The existing paintings and fragments will first be comprehensively studied and reproduced as line drawings on plastic film (mylar). The drawings will be scanned as a permanent drawn record of the decorative programme of the Villa, and a second set of drawings reflecting the 'reconstructed state', for example of repetitive decorative patterns that are missing sections in the original, will be made from the scanned originals. These drawings will be reproduced in a format suitable for projection and tracing directly onto plastered wall surfaces.

The paintings will be reproduced using high quality acrylic colours (suggested manufacturer: Lascaux). This company provides primers, mediums and varnishes as well. A single manufacturer is recommended in order to avoid problems of compatibility such as altered colours, film flaws, and loss of adhesion. All paints will be imported from abroad as they are not available in Egypt. A preliminary estimate of 150 and 200 ml/m<sup>2</sup> per coat of paint can be made, although the amount of paint required will vary depending on the technique, number of coats, and the support. A final estimate can only be made after the production of sample panels on plaster which will also permit an assessment of how many coats of paint will be required.

The plaster matrix for the paintings should be thoroughly dry and free of grease before work begins. The plaster will be impregnated with a paraloid solvent based sealant (such as Lascaux Acrylic Paraloid B 72-10%). To prepare a white or coloured ground a primer will be applied (such as Lascaux Primer or Lascaux Studio Acrylic colors diluted 25% with water). To enhance the durability of a work and to protect it from possible damage the paintings will be varnished. Works in acrylic colors are better protected against damage caused by exposure to weather, (especially UV radiation), by dirt and atmospheric influences, by the resulting efflorescence of the support, or by mechanical stress if they are properly sealed. The simplest form of protective coat is provided by an Acrylic Transparent Varnish.

## INSCRIPTIONS

In addition to the identifying inscriptions around the figural decoration in the domed chamber of the Villa, a number of other inscriptions have also been found in a related context nearby. This room was used as a ‘schoolroom’, and contains numerous inscriptions in red pigment on a white ground, including a quotation from Homer’s *Odyssey*. It is proposed to replicate these inscriptions on a separate panel which will be placed on display in Room 6 with appropriate textual explanation.



Detail of inscriptions in the ‘Schoolroom’

## 2.3 TEMPLE BLOCK CONSERVATION AND PRESENTATION

A total number of some 400 sandstone blocks and fragments with relief decoration have thus far been recovered from the remains of a multi-phase temple on the highest point of the site. These blocks vary in size: not all of them are decorated, and only a few linked scenes have thus far been identified. They indicate that the lower courses of a decorated sanctuary constructed by Domitian has the potential to be reconstructed, and that a coherent display of other Roman period blocks and Saite period blocks could also be created. A few of the blocks are distinctive architectural elements (door jambs or cornice fragments etc.), but the majority are wall-facing blocks. It is expected that more blocks will emerge from excavations in future years, and these will also require storage. From the point of view of visitor information, the temple blocks are a useful vehicle for explaining the long history of the site, and its repeated rebuildings.

The blocks have caused major storage problems since the moment of their discovery, and have been repeatedly moved from the site to distant storage locations around the oasis. It is intended to solve this problem by building a purpose-built block storage and presentation space at the site itself, near the current guardhouse and work facilities. Owing to the strong winds and harsh sun of the oasis, it will be necessary to protect the blocks from the elements: they cannot be left exposed as in many other open air block display areas around Egypt.

A preliminary design for the storage and presentation facility has been made (see attached drawings). The building is positioned immediately to the west of the proposed replica of the Roman Villa of Serenus (see above), and follows an east-west orientation, believed to mirror the orientation of the original temple. Thus, the blocks in storage can, wherever possible, be located with reference to their assumed original orientation on different walls of the temple. The building has a single entrance on the east side for security reasons.

The facility has a fired brick perimeter wall, 2.5 metres in height and one and a half bricks thick, which will be plastered upon completion with a sandy coloured lime plaster internally and a mud plaster externally. Within the exterior wall runs a mastaba of fired brick, 40cm wide. This mastaba will be plastered to match the interior wall with lime plaster, and will have two courses of mud brick over it to serve as a 'soft bed' or sacrificial layer that will most likely be damaged during the course of moving blocks around prior to their final positioning. Two other wider mastabas, 5 metres long and 1 metre wide, each taking a double row of blocks, lie either side of the central feature of the space, which is a mastaba built in the form of a chapel that is intended to be used as the base for the reconstruction of the chapel of Domitian in the temple. The Domitian sanctuary will be reconstructed out of a total of circa 50 blocks and fragments in three courses with blank infills where appropriate constructed from fired brick with lime mortar and lime plaster. The total number of linear metres of mastaba available for block storage/display is 37 (perimeter) + 20 (wide mastabas) + 12 (central chapel) = 69 linear metres.

On the walls above the perimeter mastaba are two horizontal lines of steel angles that are set into the brickwork of the wall. These are spaced at vertical intervals of 60cm, and are intended to support plank shelving for further block storage. It is imagined that less informative blocks will occupy these upper levels, while the more significant blocks will be positioned on the mastabas below. The plank shelving provides an additional 65 linear metres of storage for blocks, and is omitted from the east wall either side of the entrance door. Here it is ultimately proposed to mount bilingual visitor information panels on 2mm thick etched aluminium sheets bolted to the wall.

In order to achieve a large clear span for the roof of the building, a 12 metre length steel i-beam post truss is proposed at 1.8 metre intervals, with a cantilever extending beyond the perimeter wall to provide further shade. The roof is supported off the perimeter wall by steel posts one metre high,

and the space between the roof and the wall filled with a steel grille mesh to prevent unauthorised access to the building and stop birds from nesting inside. Steel brackets support the edge beams on the north and south of the roof. The primary structure of the roof is covered with 'purlins' of 4cm diameter rolled hollow section welded at one metre intervals. These provide the fixing positions and support for a palm-rib (*jarrid*) covering with a mat and mud mortar roof above. This roof is intended to be as light as possible, and to be visually attractive when seen from below. The edges of the roof are formed by an upstand steel angle, against which the palm-rib and mud roof abuts internally. All steelwork is to be primed with red oxide and painted beige.

The internal finishes proposed for the building are mud plaster for external walls and lime plaster for all internal walls and mastabas, which could if desired be painted with a limewash in selected areas. The floor of the building is to be tiled with a fired brick pavior (note: a special order will have to be placed for the paviers of the staircase in the Villa of Serenus. As the volume of this order will have to be increased to make production viable, the external circulation space between the Villa and the Block Storage Facility, as well as the interior of the latter, could be paved with the same paviers). The door to the building will be a steel frame door with infill panels, all painted beige.

Natural lighting will be provided by the grilled windows all around the perimeter at high level, but ceiling mounted supplementary lighting will be provided at the centre of the space to allow for a proper viewing of the blocks reconstructed on the mastabas and facing the centre of the room. A power socket will also be provided for general use.

## **BLOCK PRESENTATION DETAILS**

At Amheida, there are several large groups of fragments that need to be shown in separate displays. The first is a group of pharaonic, mainly Saite relief fragments, deriving from the temple built by Amasis and some other kings. These blocks and fragments are in a state that is too incomplete to allow more than incidental groups of blocks to be displayed together. However, associated fragments may be placed in the same 'walls', as long as their significance is made clear and relationships between blocks and fragments is suggested visually. Some large figures of goddesses may also be reassembled, and a part of the rear wall of the temple. Otherwise there are enough individual blocks that are worthy of display. Where a composite display of a maximum number of reassembled blocks and fragments occurs, some additional lines will be added around the blocks/fragments in order to suggest the continuation of the relief. The blocks and fragments will be set in a matrix of fired brick with lime mortar, with a lime plastered face 2cm back from the face of the blocks.

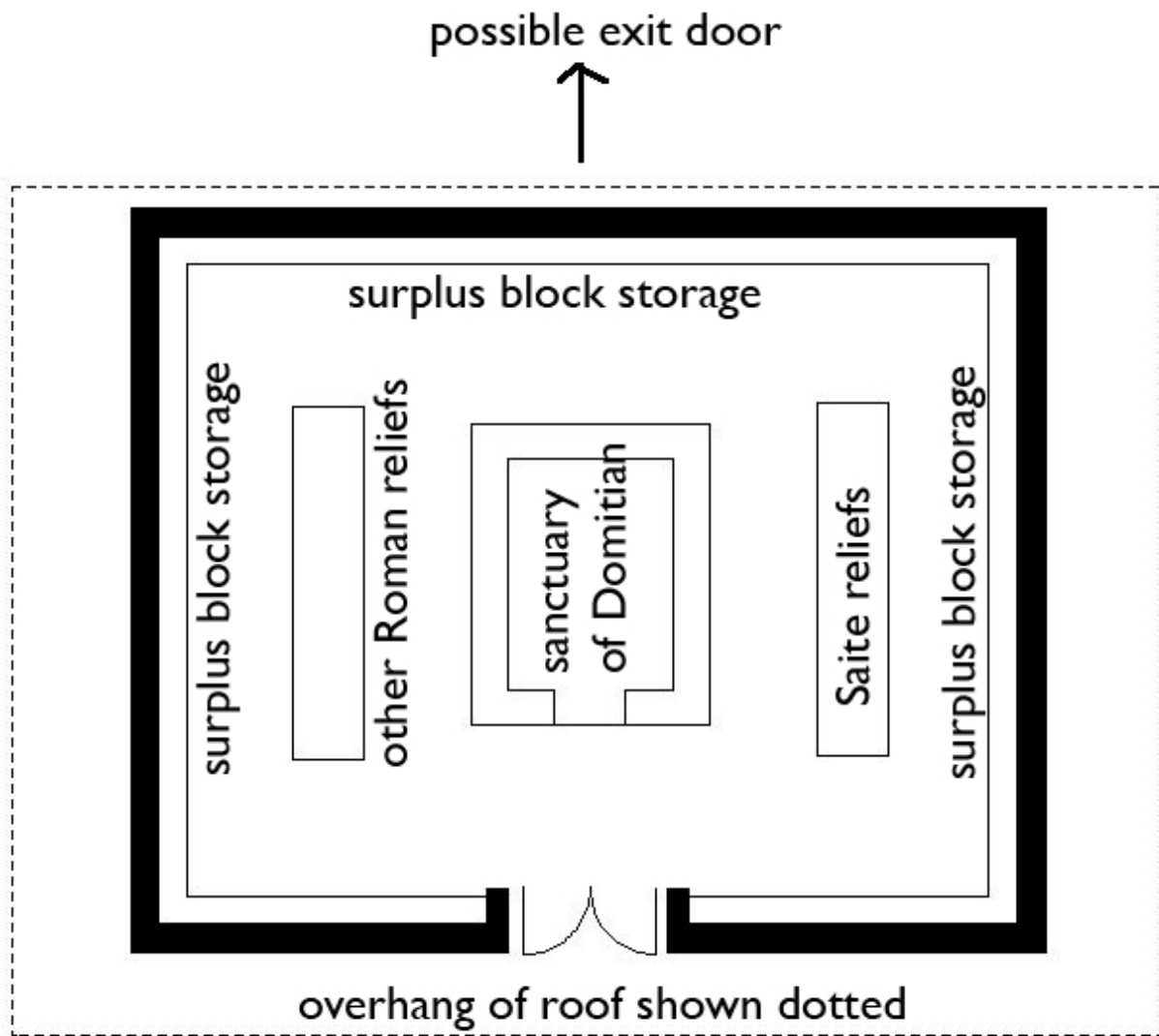
For the Roman period blocks from the temple, a more complete display is possible. Of the sanctuary of Domitian, a large percentage from the lower three courses of blocks are preserved. The relief decoration consists of long rows of goddesses of the Good New Year, who are depicted in adoration before the god Thoth in the form of baboons placed in the centre of the rear wall:



This sanctuary can be reconstructed on a stone mastaba in the shape of a room with internal dimensions of 3.25 x 2.36 metres with an axial doorway of 1.05 metre width opening towards the east. This mastaba will be circa 50 cm in height, on which the original blocks would be erected as much as possible according to their original arrangement. Missing parts could be outlined in simple lines, in the manner of the Satet temple reconstruction at Elephantine in Aswan (below).



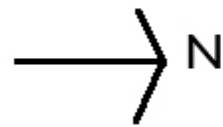
In addition to the sanctuary of Domitian, other fragments from a sanctuary of Titus remain, as well as assorted fragments of later date from the eastward extensions of the temple. These will all be built into a 5 metre long wall comparable to the Saite collection of blocks. The resulting block display will take the following shape:



## AMHEIDA BLOCK STORAGE & DISPLAY

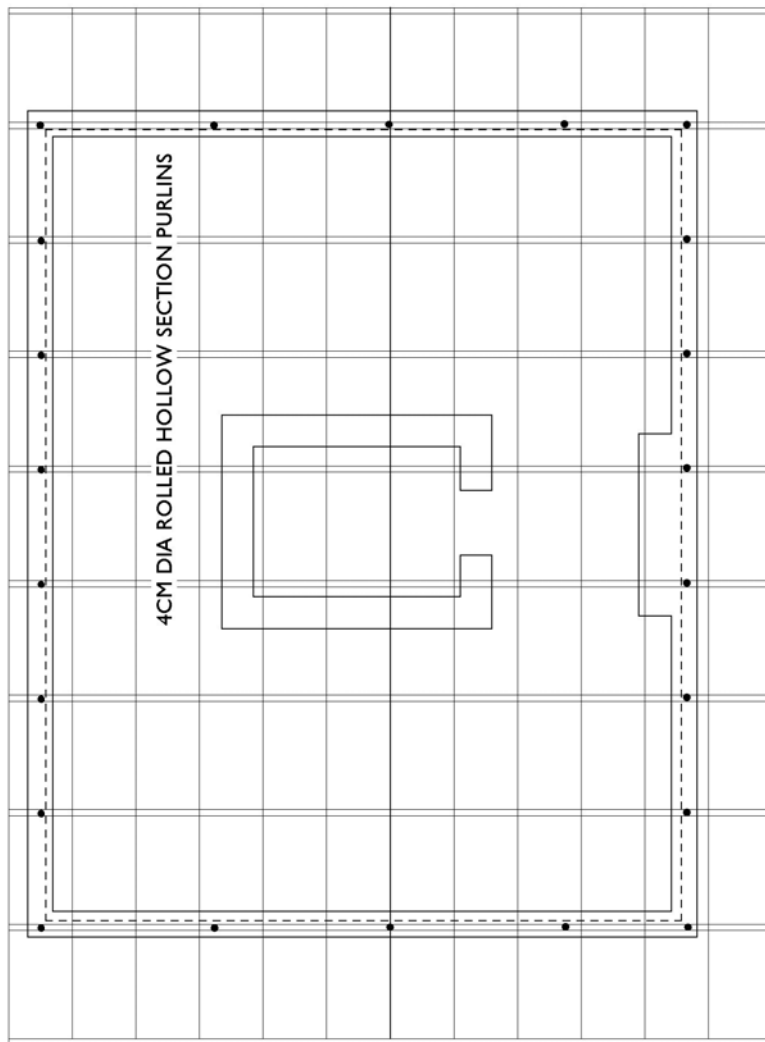
Sketch plan

0 10m



PLAN OF BLOCK-HOUSE ROOF STRUCTURE

12 METRE I-BEAMS



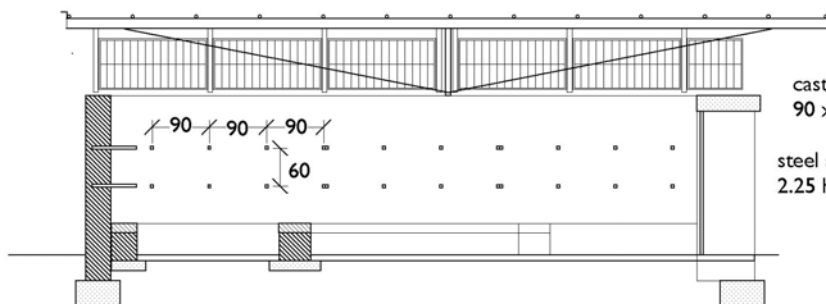
Palm ribs wired to purlins with matting and taf over

- 22 posts 1 metre x 10cm dia
- 8 corbel brackets
- 10 ibeams 12m long x 15 deep
- 212 linear metre 4cm dia RHS
- 60 linear metres 10 x 5 angle trim

200 m2 jarrid plus matting + taf

96no. 5 x 5 box section 70cm long set into flank walls for shelves

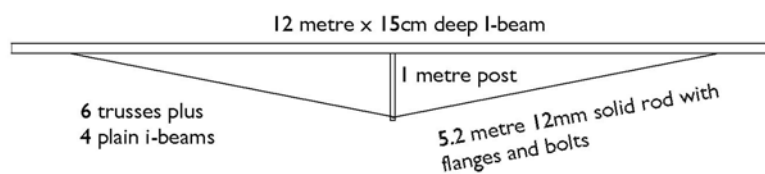
50 pieces timber 3m length 15 x 5cm



cast concrete lintel  
90 x 3 metres x 20 deep

steel angle double doors  
2.25 high x 1.8m wide

SECTION BB



6 trusses plus  
4 plain i-beams

1 metre post  
5.2 metre 12mm solid rod with  
flanges and bolts

Block display facility: general arrangement



## **2.4 Future presentation**

The provision of visitor information in the Villa of Serenus Replica and the Temple Block Display Facility is expected to evolve in the light of future discoveries on site. At present, the display of and in the Villa is intended to convey information about daily life in Amheida, while the Temple Block display can provide an overview of the development of the site as a whole. Additional specialist displays, perhaps with new characteristic structures, on other themes (bathing, Christianity, death etc) can be created as and when information becomes available.

## **3 ON-SITE INTERVENTIONS**

This section of the site management plan is presented in outline as a preliminary statement of intent. Some interventions, such as conservation of standing remains, have already been commenced, but more will have to be done before the site can be safely opened to visitors.

### **3.1 Visitor routing and signage**

The site at present is a fragile resource that can only be damaged by large numbers of visitors walking across it. Thus, visitor traffic should be discouraged, or an attempt made to control the routes used by visitors and therefore to limit the damage caused. While visitors may be encouraged to obey a simple set of rules on site (no walking on mud brick walls, no picking things up) it will be practically impossible to enforce these guidelines. The provision of off-site attractions (such as the Villa Serenus and the Temple Block Display) will hopefully be sufficient to fulfil the curiosity of most visitors. For those who wish to explore the site further, a circuit that takes in already conserved structures and a viewpoint on the temple mound should be considered. Signage on site should be restricted to a minimum, as most visitor information will be transmitted in the off-site facilities. Small bilingual direction indicators (with information on objective and distance and a 'route-map') could be provided in the form of etched 2mm thick aluminium plates mounted on steel frames.

### **3.2 Conserved structures**

As the majority of the site should remain buried for its long-term preservation, conserved standing structures assume a new prominence. Of these, the Pyramid is an obvious attraction, although it is at present surrounded by a group of partially collapsed mud brick vaulted chapels which would undoubtedly sustain damage if visitor numbers to the area increased. The North Tower could be another potential attraction following further reconstruction work and the provision of an access staircase. The consolidation of the ground plans of other as yet unexcavated structures should only be attempted if their plans are sufficiently simple as to be easily legible. The desire of the Dakhleh Inspectorate to present as many conserved structures on the site as possible should be tempered by this consideration.



Views of the restored pyramid and tower

## **IMPLEMENTATION**

- Spring 2008: Submission of project to SCA Permanent Committee for approval  
Submission of project to funding agencies
- June-October 2008: Mud brick manufacture (wall bricks)
- Nov-Dec 2008: Mud brick manufacture (vault bricks)
- Nov-Dec 2008: Foundations and wall construction Villa of Serenus (phase 1)  
Construction of Temple Block Display Facility  
Construction of site toilets & site boundary protection (phase 1)
- February 2009: Installation of temple blocks
- March 2009: Vaults, dome, timber roof construction, Villa of Serenus (phase 2)  
Completion of site boundary protection (phase 2)
- October 2009: Plastering Villa of Serenus + finishing (phase 3)
- January 2010: Painting trial interiors Villa of Serenus (phase 4)
- October 2010 – March 2011 Completion of paintings inside Villa (phase 5)

## **SPONSORSHIP**

As of September 2008, sponsorship of the project is divided between:

The Institute for the Study of the Ancient World, New York University  
*For the construction costs of the Villa Serenus Replica*

The Cultural Fund of the Royal Netherlands Embassy in Cairo  
*For the reproduction of the wall-paintings in the Villa Serenus*

The Antiquities Endowment Fund of the American Research Center in Egypt  
*For the construction of the Temple Block Display Facility, ancillary buildings and the protection of the perimeter of the site.*

Not all aspects of the project are fully funded, however, and if you would like to contribute to this project please contact:

Dr. Roger Bagnall, Director, The Institute for the Study of the Ancient World  
roger.bagnall@nyu.edu

*Or*

Dr. Nicholas Warner, Consulting Architect  
njwarner@aucegypt.edu