

Dakhleh Oasis Project
Columbia University
Excavations at Amheida 2008
Topographic Work

The topographic work carried out during the 2008 excavation season continued on the basis of what was already elaborated in 2007, using the same established fixed points (S1 to S5).

TOPOGRAPHIC ASSISTANCE IN THE FIELDWORK

Following the evolvement of the work on the field, daily updates were prepared as new rooms were uncovered to provide total station references in order to assist and facilitate the work of the archaeologists, especially in Area 2.1. The result of the work generated two comprehensive 2D plans of the area of the villa and the new rooms opened, one reflecting the architectural situation visible on the ground level, the other reflecting the one of the end of the season.

Considering the lack of architectural structures in Area 4.1, the work there was mainly focused on providing fixed points according to the staff's needs. In both areas, points have been total stationed to create schematic sections cutting through the whole extents of the investigated areas.

SITE SURVEY

We continued the surface mapping of the site in the areas not yet excavated, more specifically in two distinct quarters.

The first unit surveyed, an area of 75 by 45 meter, is located around the pyramid (3.1) where a complex of monumental tombs was uncovered.

A second larger plot (220 by 75 meter), East-West oriented south of 2.1 and 4.1, can be most probably identified as the South-Eastern limits of the town's expansion, characterized by a rather regular road system around which a district of small residential units was organized.

PHOTOGRAMMETRY

Photogrammetric survey was carried out on the site, providing data implementing two ongoing projects.

On one hand, a complete documentation has been provided for the area of the so-called 'tower', located at the northern limits of the ancient Amheida. For this building, non-compressed photographs of both the external and internal faces of the walls were taken with the help of a Total Station. These images were then exported and geo-referenced using coordinates, rectified and joined together in a photomosaic. This process allowed to obtain a single high-definition photogram, imported and scaled in CAD environment

as a graphic base layer for vectorial drawings. Concomitantly, a full planimetry of the building, the walls' elevations, and N-S and E-W sections were elaborated so to provide a full overview of the state of the architectures before the intervention of restoration.

On the other hand, we continued to document area 2.1, with a complete photogrammetrical view of the West perimetral wall of room 19, two detailed views of the inscription located roughly at the center of this wall, and a photogrammetrical rendering of the floor in room 23.

CARTOGRAPHY

The map previously created to show degrees of anthropic occupation in the area surrounding the main site has been updated with data collected from a GPS based survey (performed by EM) in order to visualize possible zones of archaeological interest located outside the current limits of the SCA protected territory. Moreover, the basic elements of the modern infrastructures (i.e: power cable lines, channel systems, and settlements) were mapped to facilitate the planning phase in the reconstruction of the villa complex.

GRAPHIC ELABORATION OF COLLECTED DATA

Using the data collected during the previous season, this year we were able to elaborate the 3D survey done in 2.1 to create a fully scaled metric reconstruction of the extant features in CAD to be used in the recreation of the complex in a 1:1 scale.

The photomosaics and vectorial images elaborated last year in CAD were joined together to provide a combined visual representation of both planimetry and elevations of the rooms in 2.1. As for room 1, the photomosaic has been elaborated *ex novo* using existing images shot in 2006.

The result of this combined views have been summarized in room-plates:

Room 1 (North, South, West, and East Walls)

Room 2 (North, South, West, and East walls);

Room 4 (North, South, West, and East walls);

Room 6 (North, South, West, and East walls);

Room 7 (North, South, West, and East walls);

Room 8 (North, South, West, and East walls);

Rooms 9 and 10 (North wall);

Room 11 (North, South, West walls);

Room 12 (North, South, West, and East walls);

Room 13 (North, South, West, and East walls);

Room 14 (North, South, West, and East walls);

Room 15 (North, West, and East walls);

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