

THE ITALIAN EGYPTIAN PROJECT OF STUDY AND CONSERVATION OF THE MONASTERY OF ABBA NEFER AT MANQABAD 2020 - PRELIMINARY REPORT OF THE 6TH CAMPAIGN

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Introduction

The 2020 campaign of the Italian Egyptian Mission at Manqabad was carried out on the site from January 21st to February 22nd¹.

According to the approved points of the application and the requirements of the Egyptian Ministry of Antiquities, the mission planned to carry out the following activities:

1. Continuation of the topographical and archaeological survey and 3D drawings of the site;
2. Trial trenches in the area south of the city wall;
3. Study of the Areal Unit 2, where the mission had planned to excavate the southern area (AU2S1);
4. Continuation of the study of the other Areal Units of the Northern Sector;
5. Restoration intervention of one complete Areal Unit, to be considered as a “Pilot project” for the conservative restoration of the whole Northern Sector of the site;
6. Intervention on selected materials (above all paintings and mud brick structures);
7. Theoretical and practical training of young Egyptian archaeologists.
8. During the archaeological survey, it was also possible to start the study of the paintings, with a double analysis involving both the decorations already recorded in the AUs of the Northern Sector and a series of paintings observed in some rooms (Area “d”) in the Central Sector of the site (Fig. 8)².

The following report is divided into 5 main paragraphs (with some sub-paragraphs), corresponding to the activities carried out: A. 3D survey and photogrammetric campaigns; B.

Archaeological activities; C. The Geological survey; D. The restoration activities; E. Site management proposals; and finally Concluding Remarks.

A. 3D SURVEY AND PHOTOGRAMMETRIC CAMPAIGNS (A. Bosco, V. Cera, D. Iovane, S. Scandurra)

The on-field work, carried out from February 4th to 24th, had two targets:

- 1) Verifying the topographic grid implemented in 2018 (Pirelli 2018) and, if necessary, fixing or integrating it with the new investigations planned in 2020;
- 2) Carrying out the 3D survey of some areas by means of close-range photogrammetry in order to allow the extraction of plans, elevations, profiles.

Activity 1 - The topographic survey with Total Station

From the inspection carried out on the field on the first day of work, two pickets of the topographic network set up in the past mission were identified on site. These are the stations called P1 and P2 in 2018. These stakes, although well fixed in the ground, were not cemented. It was therefore decided to carry out a resection, made possible by means of the Total Station, on the fixed points (North Trellis and Lamppost North), acquired in 2018, redefined as RES01 and RES02 in the new acquisition project (MQB20). The resection took place by inserting the known coordinates in the instrument and positioning it on peg ex P2. The station, thus set, was named ST02. The mean resection deviation was 0.005m.

The old point P1³ renamed ST01, was then measured from point ST02. The two stations are located, respectively, near the Areal Units AU12-13 and AU2, subject to cleaning and restoration works during the 2020 mission. Starting from these cornerstones, the topographic network was extended for the site documentation needs. Starting from

¹ Members of the mission were Rosanna Pirelli (director), Angela Bosco, Irene Bragantini, Valeria Cera, Caterina Cozzolino, Jane Faiers, Ilaria Incordino, Domenico Iovane, Stefania Mainieri, Cristian Mazzarino, Pasquale Musella, Diletta Pubblico, Andrea Ragionieri, Ezzat Salib, Anna Salsano, Simona Scandurra

² In this area, which has not yet been investigated by the mission, a topographical survey was carried out with the purpose of analysing the paintings, and a temporary number has been attributed to each of the rooms (Fig. 18).

³ Thanks to Andrea Ragionieri for the support given in the topographical survey.

station ST01, stations ST03 and ST04 were positioned along the west wall and near the South-West corner of the same walls. From here it became necessary to place two other fixed stations: ST05, in the central sector of the so-called "refectory" (Pirelli *et alii* 2017)⁴, and ST. SCARICO, a dump of material in the probable production area, immediately outside the South wall.

All new stations have been identified with the application of a 7.5cm topographic nail in galvanized steel with a fixed head. The soil around the nail has been made more compact with the addition of mortar.

The topographical survey activity supported in particular:

- the "traditional" documentation of the areas under investigation, with the measurement of the dimensions (Q code), of the section points (SEZ code) and for the identification of the dimensions of the areas (LIM code) and of the environments (T codes and M);
- the photogrammetric surveying activities, with measurement of the targets positioned in the areas of interest, in order to obtain metric reliability of the 3D replicas (Code F).

Some control points were acquired on the façades of modern houses, East of the site (points from CNT001 to CNT004) (Tab. 1; Fig. 1) and on the structure used by the police at the entrance, always to the East (points from CNT005 to CNT011), so as to verify the correct territorial inclusion of the topographic survey.

Activity 2 - The photogrammetric survey

As tested with good results in the previous campaign (2014 and 2018) (Pirelli 2018, 306-308), a terrestrial close-range photogrammetric survey was performed in order to obtain a complete and detailed model of the selected areas.

Different devices were used: a Nikon D750 SRL Full frame camera, a Canon APS-C EOS1300D SRL camera, a Nikon APS-C D40 SRL camera and a GoPro Hero 6 Black Action Cam with 12MPx CMOS sensor mounted on a telescopic pole.

Due to the features of these sensors, two different acquisition modes were adopted: one from the top with the aim of framing the largest possible portion of the area with few shots ensuring good final resolution (Action Cam); the other one close-up to capture high resolution details (DSRL).

Activity on-site

The photographic shots were generally acquired between 12:00 and 14:00 to optimize the position of the sun in order to reduce the shadows cast on the archaeological elements. Respecting the percentage of overlap between the frames as required by the SfM (Structure from Motion) algorithms, the strips were scheduled to avoid the shadows of the surveyors on the features to be acquired. For each area, some CPs (Control Points) were positioned and measured by total station to allow the geo-referencing of the final models.

The photogrammetric survey carried out by GoPro was performed by mounting the sensor on a pole with a height ranging from 1.5 to 3.0m. The device was set in sequential shooting mode with image acquisition every 2 seconds.

The acquired areas were: AU2 + AU3 (1243 photos) (Fig. 2); dump (981 photos before cleaning the eastern side - 1305 photos after cleaning) (Fig. 3); AU12 + AU13 (1420 photos) (Fig. 4); and, finally, the West wall including the West gate (1107 photos).

For the close-range photogrammetry by DSLR, the settings adopted for the shots were calibrated in relation to the features of the objects and those of the camera. In general, using a zoom 18-55 lens set at 24mm view, a mean GSD (Ground Sampling Distance) of less than 2mm was planned to maintain an average distance of 2m from the object. An ISO 100 setting was preferred and an overlap of about 70% was chosen, capturing the stereo pairs in both parallel and convergent axes configuration mode.

The acquisitions by Nikon D750 involved, first of all, the documentation of the wall decorations in the Central Sector of the site, in Room 3, in order to generate ortho-photos useful for studying the patterns. Two single walls were acquired (North wall of room 1, with 32 photos, and North wall of room 2, with 42 photos) and the whole of Room 3 (206 photos) (Fig. 5). Later, at the end of the cleaning operations, the acquisition of AU12 and AU13 was carried out. Different shooting modes were used, in order to obtain overall (248 photos) and detailed models (383 photos for AU12 and 265 photos for AU13).

Using the Canon EOS1300D 89 photos were acquired of the covering system of a niche in AU2S/W3 with the aim of determining the type of its original covering to guide the restoration (Fig. 6); 250 detailed photos of the plaster situated on AU12-AU13 walls to supplement the data missing in the GoPro model.

The shots with the Nikon D40 were taken in the area west of the Thermae (327) in two arched

⁴ Corresponding to Room 3 of the topographical survey of the Central Sector: see above note 3 and below § B.2.1.

rooms in order to collect data useful for a conjectural reconstruction of the coverage system to be compared with those of the AUs of the Northern Sector.

Post-process activity

Each single area was processed by following a carefully established workflow.

The images were automatically oriented in a state-of-the-art SfM software application and the photogrammetric models (dense cloud and mesh) were scaled using a known distance thanks to the topographical grid (Fig. 7).

B. THE ARCHAEOLOGICAL ACTIVITIES

The archaeological activities concerned four areas of the site: the Northern Sector (investigation of the Areal Units and their materials), the Central Sector (survey of the paintings), the Southern Sector, outside the town wall (trial trenches and pottery survey), and a preliminary analysis of the South-West corner of the city wall (Fig. 8).

B.1 The Northern Sector

In this area, the archaeological survey was carried out by Caterina Cozzolino, Stefania Mainieri, Cristian Mazzarino, Rosanna Pirelli, M. Dilettia Pubblico and Anna Salsano, with the collaboration of two trainees, Jihad Hany Mohamed and Eman Ismail Aly, and concerned three Areal Units: AU2; AU 12 and AU13.

B.1.1 Investigation of the Areal Units

As in the past campaign, the mission had planned to carry out a complete cleaning of the selected Areal Units, aimed at allowing a thorough investigation of the structures and the different phases of development of the complex, a more detailed drawing and 3D acquisition, and an accurate analysis by the restorers in order to conduct the intervention programme. During the 2018 fieldwork, together with sand and debris, a huge quantity of plastic bottles and bags, food packaging, and animal carcasses buried in recent years were removed from the AUs analysed, which the mission successively covered with sifted sand. Although resulting from an extremely disturbed context, all the artefacts (mainly ceramics and limestone architectural elements) were recorded and photographed, while the organic materials were sampled for analyses (Pirelli 2018).

During the 2020 fieldwork, we continued the cleaning of two more Areal Units, AU 12 and 13, with the same approach, but we also had the opportunity of carrying out complete excavations of

two largely unexplored niches, respectively in AU2N and in AU2S.

B.1.1.1. Areal Unit 2 (Fig. 2)

Although AU2 had been already cleaned and studied during the 5th campaign (Pirelli *et alii* 2018), the mission had planned to go on with investigation of its underground floor and its southernmost area (AU2S1), because the Egyptian colleagues could not dig them in past years. However, upon arrival on the site, we noticed that a destructive intervention by unknown persons had damaged the ground floor of the monastic cell (AU2N) and in particular one of its refined niches (E7) in the eastern wall. In this niche, a vase had been embedded in a secondary phase of use. Perhaps in search of precious objects, the vandals broke through the ledge where the vase (fortunately abandoned near the niche) (Fig. 9) was embedded, leaving the filling material partly in front, partly within the same niche (Fig. 10).

The cleaning of the debris and the excavation of what remained confirmed our previous assumption: in a first phase an apsidal niche, with walls painted red, opened at ground level; at a later time, the niche was partially walled up (to a height of 73.7cm) - filled with debris and reused materials - and closed with a ledge; a large decorated jar was embedded in it, leaving only its rim outside (Fig. 11).

Among the debris outside the niche, only the remains of mud bricks and the white plaster of the dismantled wall and ledge were collected, while the excavation inside the niche brought to light several fragments of decorated plaster, differently distributed within the infill layers: the upper layer contained a large number of red coloured fragments decorated with vegetal motifs painted black, which probably decorated the wall around the niche (Fig. 12)⁵; among this debris, a metal rivet was also found. The second, deeper layer of infill contained 17 fragments of a plastered wall decorated with human faces inscribed in circular frames, these last being an extension of their own nimbi (fig. 13). Among them, one can recognize the face of Jesus Christ along with female figures (virtues as suggested for Bawit⁶), which were probably arranged along the frame of a shallow arch-topped niche. The paintings - of a very high quality - are in

⁵ We cannot be sure that the fragments collected in this and the following layers pertain to this niche, but at the present stage of our knowledge we have no concrete reasons to hypothesize their original position in a different place.

⁶ A similar arrangement of haloed faces decorating the frame of a niche is to be found for instance in Bawit, in the painting from the prayer niche, inv. 7118 in Gallery 8 (Gabra, Eaton-Krauss 2007, 96) and in Apa Jeremia in Saqqara, Cell 1725.

an exceptional state of conservation which still shows the original vividness of colours: they will certainly allow us to better place the work of the artists of Manqabad within the tradition of Christian Egypt, and will constitute a fundamental reference point for constructing at least part of the relative chronology of the site (see below: Bragantini, § B.2.1). After the excavation and cleaning of the niche, the whole East wall was restored (Fig. 14: see also below § E.1)

Following the vandalism, which further affected the state of preservation of the walls and the paintings of AU2 - already considerably damaged by atmospheric agents after the excavations of the Egyptian colleagues in the first decade of 2000 - we decided to slightly modify our plans, moving the implementation of the "Restoration Pilot Project" from AU8/9 to AU2. For this reason, we proceeded to the final cleaning of the whole Unit, including also a partially unexplored niche/storeroom (W1) in the West wall of the open court (AU2S) South of the cell.

The niche/storeroom (Fig. 15) (dimensions 135×48.5×98 cm) was built when the West wall of the court was reinforced in phase 2 (Pirelli 2018, 310) and was inserted between the southern wall of AU2N and the thickening (60cm) of the western wall of AU2S; its floor is about 15cm below the walking surface of AU2S, and access to the internal space is partially reduced by a low curb (about 7cm high) that runs along the base of the niche, and by a thin wall (32cm wide) that limits its width to the South.

The small storeroom was partly covered by a modern anthropic deposit (dating back to the time of the Egyptian excavations), partly by the collapse, in ancient times, of a portion of the West wall (W1, II phase). The modern deposit (1) contained a few potsherds in loose sand, while the ancient one (2) was composed by compact soil and sand with some potsherds, fish bones, animal bones and seeds. By removing both of them, a thick and hard layer of organic and inorganic materials in concretion emerged (3). It was carefully removed and several items were sampled for future analyses: fish bones, animal bones, minerals (especially quartzite and calcite), shells, fragments of leather, fragments of textile; fragments of vegetal fibres (possibly palm tree stalks); pieces of wood; flowers and leaves; snails; a huge amount of different seeds (date and olive seeds were clearly identified); fragments of glass; potsherds. Some metal instruments were also found: a square-section nail and a pair of tweezers with a round hook and a spike, probably used to pull out date seeds. Within this thick layer, two circular skeins of large ropes (\varnothing 37 and 26cm) (Fig. 16) and

the bottom of a basket (\varnothing 24.5cm) (Fig. 17) were also concreted.

After the cleaning, the walls of the store-room appeared coated by a layer of white plaster Type 3; while the floor - placed on a very fine and clear sand - proved to be composed of a layer of large and medium size inorganic particles covered by plaster, this last composed of an arriccio of fine particles of minerals and straws, and an intonaco mainly made up of grains of minerals (Type 2: Pubblico, in Pirelli 2018, 315, 329, fig. 22).

After the documentation of the niche/store-room and the collection of samples, interventions of anastylosis and restoration of the entire AU2 were carried out: it will constitute the restoration model for the other AUs during the subsequent campaigns (see below § E.1., Fig. 32).

B.1.1.2. Areal Units 12/13 (Fig. 4)

This double Areal Unit consists of one Type 4 Housing Unit (AU12N), one Type 1 Housing Unit (AU13N) (Pirelli *et alii* 2107), a large open court (AU12/13S) common to the two HUs, a pair of square rooms (AU12/13S1) on the two sides of an axial ramp and a complex of service rooms immediately west of the court (AU12/13S γ , 1-6). Access to the complex was ensured by a monumental door at the southern end of the ramp. The complex was selected for study both for its dimensions and major structures and because it is one of the few cases in the site in which almost all the walls are preserved up to the springing of the vault. This makes it possible to reconstruct the total height (185cm) of the ground-floor rooms and their system of openings and windows, both for this and for the other HUs of the site whose architecture, as we could observe, is rather homogeneous.

The two AUs were originally independent, each consisting of a housing unit in the North and an open courtyard in the South; in a later phase, the narrow separation wall between the two courtyards was eliminated and a large space common to the two was created. The complex - as we already suggested for AU8/9 (Pirelli 2018, 312-313) - certainly belonged to a monk of high rank, although currently it is difficult to establish a precise hierarchy between the residents of the two complexes.

AU12N consisted of a double HU composed of a rectangular room (α) on the east, which gave access to two square rooms (β and γ) on the West. Only a small underground room was present with access from a stair at the South-West edge of α . This gave access also to an underground passage connecting AU12N to AU12S. The plan of room α appears very similar to the ground-floor of a Type 1 HU, with the door at the eastern end of the South

wall, a series of niches in the East wall, the apsidal oratory niche with painted decoration being the northernmost, and ventilation ducts in the northern wall. In a later phase, this was doubled and its original red plastered surface was covered by another set of bricks (40cm thick), coated with white plaster. Two simple square rooms are accessible from room α , the southernmost of which (γ) had two slanted windows in the South wall, partially buffered in a secondary phase. Walls and floors were originally coated with the usual layer of white plaster, considerable traces of which are present in all the rooms.

AU13N is a Type 1 HU: the ground-floor room is a large rectangular space, with a door on the eastern end of the South wall, a slanting window almost in the centre of the same wall, several niches along the East wall, three ventilation pipes in the North wall, plus a small niche. A stairway from the West end of the South wall led to the underground rooms. Because of the collapse of the vault that supported the floor between the ground floor and the basement, the latter is almost completely covered by a huge amount of soil, debris and raw bricks. Due to the extreme regularity of the architecture of this type of housing units, it was deemed not useful to empty the underground rooms of AU13N, which can be investigated in one of the next campaigns, before proceeding with the complete restoration of the complex AU12/13.

The large rectangular space in front of the two housing units (AU12/13S) is about 14m wide (E/W) and 8m deep (N/S) and is composed of an open court (2/3 of the width) on the East and a complex of service rooms on the West. The entire area bears witness to numerous renovations and of (at least) five different layers of floor covering, recognizable in a section exposed in the area in front of the entrance to HU 12. While the floor of the courtyard in front of AU13N was rather regular and empty, the area in front of AU12N is more difficult to reconstruct, because of the presence of the underground corridor between AU12N and AU12S, whose relationship with the court is not clear. Almost in the centre of the common court, traces of a floor with its plinth, placed 36cm lower than the level of the current floor, led us to believe that originally the space in front of AU12N was at a much lower level, so as to allow access from the outside to the corridor now buried⁷.

After dismantling the thin central wall, which originally divided the two units, a common floor was installed by filling in the height difference of the western half of the courtyard and covering the whole floor with a new layer of white plaster. A new entrance from South was created, not properly axial. In this phase the westernmost area of the open space in front of the HUs was modified and a service area was created including basins, storerooms and probably a kitchen, this last later moved towards the South. Actually, in the North-West corner of AU12S1 β , a large and deep fireplace was cleaned and investigated: its shape being that of a big jar with a very wide mouth made in ceramic, and whose body is made of fired bricks. Its content mixed to very fine ashes was sifted and several samples were collected to be analysed: remains of glass, metal, basket fragments, seeds, pieces of fabric and ropes.

During later phases, two more rather symmetrical rooms were added South of the open court (AU12S1 α and AU13S1), creating a passageway and a new entrance. These rooms - preserved to a maximum height of about 1m - were partly decorated with paintings. In particular, the East wall of AU12S1 has been recognised as the original location of the painting with the Virgin (Pirelli 2019), removed during the investigation by the Egyptian archaeologists and currently kept in the storehouse of El-Ashmunein. In AU13S1, three more paintings were observed: one on the West and two on the North wall, respectively. On the West wall an image is still visible on a single register, i.e. the lower part of a monk sitting on an armchair; on the North wall, the decoration is arranged on two registers: on the upper one, the lower part of a saint on a horse; on the lower register, two camels on either side of a high fountain.

A small room (δ) and a basin (ϵ) were later added North of AU12S1. In the final stages, the entrance level to the complex was raised, and the gate monumentalized with two donkey-backed mastabas on either side of the threshold; later two orthogonal walls were added to the two mastabas.

B.1.2 The stone architectural elements in the Northern Sector (Anna Salsano)

During this mission, most of the stone architectural elements were found in AU12-13 and in a baked brick building in the Central Sector. This latter could be part of the "qasr" (Pirelli 2014) and, though it has not been the object of systematic study, it has been cleaned for safety reasons. In the Northern Sector, many architectural elements were

⁷ It seems that the corridor was originally open and accessible from the courtyard, since also the exposed South face of the East wall was plastered white. For this reason, we dug some trial trenches, but we had to stop the investigation before reaching the level of the passage, to avoid the collapse of the pavement

all around: the time available did not allow the construction of retaining walls for the safe continuation of the excavation.

found in AU13S1, not *in situ*, in a mound of filler sand that had been placed to protect a painted niche after the previous excavations. Some finds from AU13S1 are quite big parallelepiped elements (29×67.5×18cm; 15×48×11cm; 45×35×18cm); a big parallelepiped element also has a hollow near the lateral edge (51×14cm; hollow: 10.2×13×4cm); another big parallelepiped element is a lintel and has two hollows on the lower face (9×8×2cm; 9.5×8×2cm) and a red inscription referring to Christ and Saint Jeremias. In the same AU, two blocks with a deep quadrangular hollow were also found (23×15.4×19cm with a hollow of 11×16cm, depth: 9.2cm; 28.2×18.5×22cm with a hollow 15.5×15.5cm, depth: 12.5cm); this type of element has never been documented during the previous missions and its function is still unknown. In AU13S1 we also identified a small fragment of a frame (18×5×5.5cm) and some fragmentary slabs with a thickness of 4-5.2cm.

Two stone blocks used as accommodation of door pins are in the entrance of AU13S1; one of them is *in situ* on the East side (11.5×9cm, the height is not visible; diameter of the hole: about 5cm; depth of the hole: 1cm); the other is on the West side, but is definitely not *in situ* (14×9×5cm; diameter of the hole: 2.5cm; depth of the hole: 1cm). The two blocks could pertain to a double door, but it has never been attested in Manqabad and the difference between them is unusual; it is more probable that the two accommodations of door pins correspond to two different phases, the second with a raised level of the floor. Another block used as accommodation for a door pin (10×9.5cm; the height is not visible; diameter of the hole: 4cm) is *in situ* at the eastern edge of AU12Sβ (Fig. 18)

Other fragmentary slabs (thickness: 3.7-5cm) were found in the western part of AU12Sa, near niche F29. A big fragmentary slab (81.5×40.5×5.1cm), formed by two pieces, was identified near the first step of AU12N-underground. Other elements were also documented in the same area: a piece of a frame with a cross (7.5×5.5×3.5cm), an angular frame fragment (8×9×3.8cm) and other small stone elements. In the east wall of the passage (AU12N/S, u), a small window (Fig. 19) shows a stone frame (20×22cm) with two crossed muntins decorated with a red line and a black line. The window is surmounted by a small architrave and was walled in at a later stage.

One of the most interesting stone architectural elements found in 2020 is a fragment of frieze from AU12N (25.2×10×7.5cm), displaying two registers of decoration: the upper register shows some battlements; the lower is the highest (7cm) and is divided in roughly triangular sections occupied by

leaves. Traces of red are visible in the battlements, in the lower part of the element and at the edges of the triangles; traces of green are under the battlements and in the leaves. A parallelepiped block (11.5×10.7×5cm) with intense traces of red was also found in AU12N; the red is similar to that of a seashell brought to light in the same place. In this area two small pieces of stelae were documented (7.5×4×4.5cm; 7.5×4×4cm); they show remains of plaster and lime and were clearly reused as architectural elements, maybe as reinforcing elements.

The eastern niche of AU12S1 is flanked by two small bases, with a pedestal with poorly defined mouldings; a white pillar decorated with red stripes is above one of them. The bases had already been documented during the previous campaigns. In AU12Sγ1 a big stone element (about 28×28cm; height: at least 20cm) is partially under the floor; a part has a circular section (diameter: about 18cm) and its function is unknown. Some stone architectural elements were found in the most western part of the northern sector: in AU1N a small block painted red (8.3×4.7×3.8cm); in AU1S a fragment of a window frame with two braces arranged like a “V” (9×7.5cm).

B.2. The Central Sector

B.2.1 A First Assessment of Wall Painting in Manqabad (*I. Bragantini*)⁸

I give here a brief overview of wall paintings in Manqabad, a difficult task at this stage of my research. Time has not allowed us to conduct a proper survey of all the painted walls and I was only able to ascertain relative chronologies between adjoining rooms. Indeed, in almost every room passageway have been modified, and therefore we can easily recognize a proper relative sequence between two rooms. But the system no longer holds when one attempts to build a larger net before an architectural record of all remaining walls has been conducted. Remarks on some more difficult issues in the present state of knowledge might therefore later prove to be wrong.

Moreover, given the preliminary state of research on the whole complex, absolute chronologies are still difficult to ascertain. Therefore, I have mostly to rely on stylistic

⁸ I thank the Director of the project, Rosanna Pirelli, for inviting me to take part in the project, and the members of the Mission for sharing with me their knowledge of the site and the results of their fieldwork. Preliminary remarks proposed here stem from a short visit to the site in February 2020. Later paintings, detached from the walls and kept in the storehouse at el-Ashmunein (Pirelli 2015, Figs. 6-7), will be the subject of future research.

evaluations: a risky choice, even riskier given the nature of the evidence: indeed, although late antique wall-paintings in Egypt have been the subject of recent publications (Gehad *et alii* 2013 (H. Whitehouse); Mc Fadden 2014; Mc Fadden 2018; Mc Fadden 2019), the evidence is still too patchy to allow us to build a reliable picture.

Nevertheless, some points deserve to be discussed here. Preliminary research has highlighted that repertoire, technique, style and colours recur in different areas of the site, the Northern Sector with the cells and the Central Sector, thus allowing us to recognize that the two areas have undergone the same phase of decoration or redecoration. This spurs us to speculate how the decorating process could have developed. Were the same painters summoned by the same patrons in the two areas? And do the same patterns in the two areas have a special meaning (AU3N is described as an oratory niche in Pirelli 2018, 311)? Or did the painters involved use easy patterns in two areas for no specific reason?

We observe the same painting in niche AU3N (Pirelli 2018, 311, Fig. 14) and in room 1 (Fig. 20) in the Central Sector (Fig. 8), a distyle room occupying now the South front part of the central area, later added to the adjoining rooms (Fig. 21). Above a white socle closed by a red stripe branches in different tones of a red cross to form rhombi. In the centre of each rhombus are a red circle⁹ and four green branches on the horizontal and vertical axes. The decorative scheme is better displayed in the large, plain surfaces of room 1 than in the small surface of the apsidal niche. It is in fact a typical scheme “à reseaux” or “Tapetenmuster”, a modular system which can easily be adapted to different dimensions. Modular schemes are attested since the mid-1st century AD, an easy way for painters to adapt their pattern to different surfaces. At Manqabad, both the rhomboidal net and the branches recall the treillage of a garden painting, a pattern which has a long tradition in the painters’ repertoire, particularly in the western provinces (Salvadori 2017). Modular patterns of this kind recall the mosaic technique (Dunbabin 1999, 281-286), but no guidelines have been detected in Manqabad. Therefore, this similarity can hardly be confirmed. A similar pattern has been observed in Room 13 of the House of Serenos at Amheida, as well as on another wall in the same site (Mc Fadden 2019, figs. 16.2 and 16.4). Moreover, room 1 of the same House of Serenos shows on the dark ground of the high middle zone different patterns frequent in

mosaic technique (Mc Fadden 2014). The chronology proposed at Amheida 4th century (McFadden 2014, 360) will hold good for the walls at Manqabad, although a dating to the 5th century cannot be excluded based on the present evidence.

Room 1 is part of a row of rooms later added to the southern face of the Central Area. Remains of an earlier red wall painting are to be seen on the northern wall. Here an opening (later walled and plastered) led to room 4, preserving the earliest wall painting in the South-West corner of the Central Sector, a plain red coating with no remains of decoration¹⁰. It is therefore clear that - at least in this area of Manqabad - the modular “treillage” painting pertains to a second phase of decoration. Even if they stem from different periods, the wall paintings of rooms 1 and 4 were anyway in existence together.

A pattern with red circles (meant to represent a garland or a crown?) forming the centre of a simple pattern of green branches in the shape of a Saint Andrew's cross is also common to the Northern and Central sectors. The remaining space, above and under the red circle, bears a heart-shaped pattern in red, likely to be a simplified architectural ornament (a palmette?). In the round oratory niche AU2N (Pirelli 2018, 309-310, Figs. 8-10) the basic pattern of circles and branches has been applied on a painting with vertical lines in a now faded black suggesting a hanging textile. Black fringes line the bottom rim; slightly curved red bands add to the impression of a hanging textile.

The textile was intended as a socle¹¹. Thanks to a picture taken in 2006 we can identify the main decoration, once occupying the middle zone, now completely lost (Fig. 22). In the centre was the (empty?) throne with a cushion, a symbol of Christ. To the right, on a base in different tones of green, is the lower part of a male figure wearing sandals and a white himation, richly draped and pending from the left shoulder; the remains of the wings and of a staff identify the figure as an archangel¹². The quality of the painting is worth noting. The powerful figure stands out from the yellow ground thanks to the naturalism and plasticity the painter was able to

¹⁰ Only on the northern jamb of the opening leading to #3, a very small fragment of an ornament in black is still preserved. A small niche in its northern wall with the remains of a painted bird was originally plastered in plain red and white.

¹¹ Painted drapery and textiles in socles have a long tradition in temples and buildings with cult function, starting from the II-I c. BC: Moormann 2011, 57-60. A later use of the same pattern, combining the treillage with the hanging textile with the “treillage” of niche AU3N, *supra*, can be seen in Clédat [1999], 51, fig. 47.

¹² I thank Norbert Zimmermann, DAI Rom, for his help in identifying these remains. On the meaning of “dress code” in Bawit cfr. Thomas 2019.

⁹ Red circles are probably meant here to suggest garlands, but no traces of colour grading are to be seen and the circles therefore have a “flat” appearance.

convey¹³, skilfully using shadows and strokes of light and grading colours, from a shining white to dark violet. Assigning a chronology to the work of high-level painters might be very difficult, due to their style, rooted in a century-old tradition¹⁴. Given the scarcity of useful comparisons, I might very tentatively propose a chronology in the 5th century.

The wall painting in room 5 has extremely faded colours. On the black (?) ground, the stylized red circles and green branches of the niche are painted the same colours, but of bigger dimensions, as here they fill the whole middle zone. The skilled craftsmanship of the painters easily enabled them to adjust their ornaments to the surface at their disposal. This decoration overlies a walled door in the North-western corner of the room, where a pre-existing opening led to a large “vestibule”, so testifying that also this decoration, like that in room 1, pertains to a second phase of decoration in the Central Sector. Scanty remains of decoration still *in situ* in the upper zone of room 5 West and North walls can be better identified thanks to an old photograph taken by Egyptian colleagues in 1986 (Fig. 23). On a white ground, an orange-red textile looks as if it is hanging knotted to a yellow thread. In the same photograph, one can still recognize traces left on the painted surface by a brilliant green colour we have identified elsewhere on the site. A row of eight-pointed stars or flowers within a circle occupied the whole height of each section of the “hanging textile”. Horizontal brush strokes are still visible on the painted surface, less smooth than in the middle zone, perhaps due to its higher location. Room 5 preserves on its eastern wall a rectangular niche framed by small plastered pillars on moulded bases. The top of the niche preserves on the three sides scanty remains of colours, among them red and the brilliant green we have just described. It is difficult to form a judgement in the present state of conservation, but I would suggest that here the same row of aura faces met in the 2020 campaign in niche AU2 E/7 could have been painted, to which I shall return later. At this stage of the research, I surmise that the second phases in rooms 1 and 5, as well as the two niches in the northern area, share the same chronology (4th-5th century).

Even more challenging is the decoration of room 3, an elongated room with a door on its southern side (Fig. 24) (Pirelli 2014, 443, Fig. 8). A stone block on one of the jambs served to lock the room (Fig. 25). This opening was preceded by a

previous one in the North-eastern corner of the room, connecting directly with rooms 3 and 4. This later opening was also subsequently walled, and this later wall was only covered by a thin layer of plaster. The wall painting is largely preserved in the South, West and North walls, whereas it is almost completely fallen in the East wall. Although the surface is well preserved, the colours are almost completely faded, and can be recognised only by scanty traces, enough to show that this room also presented the restrained palette of red and green we have already met. Though faded, the colours have left clear traces on the white surface. Approx. 45cm above the present floor level (not much higher, I conjecture, than the ancient one), tiny branches frame the middle zone, exhibiting large garlands or crowns. It is not possible to identify whether there was a centre in the wall, although the west wall probably has one, with 5 garlands on each side, giving a total of 11 crowns on this long wall. The garlands are composed of different elements, mostly vegetal patterns all familiar in the painters' repertoire, but painted here in much bigger dimensions than usual. Moreover, completely new here - and hard to identify in our present state of knowledge - is also the overall look of the painting: the crowns “hang” from the wall set at different levels, approximately at eye level, but without any order. One could be reminded of a hanging textile, but nothing in the flat surface of the painting appears to suggest a hanging textile, nor can the big crowns be compared to known ornaments on textiles. Summing up, they are definitely part of the painters' repertoire, but the way they are depicted and combined here appears completely new. Only by trying to exploit the context could one very tentatively propose, for the wall painting in room 3, the same chronology (late 4th-5th century) as that of the paintings described so far. In fact, the crowns result from the fanciful combination and enlargement of ornaments we have already met, often arranged to form a Saint Andrew's cross or on the horizontal and vertical axes, thus confirming that the “uniqueness” of room 3 is only apparent, the result of the will (and ability) on the part of the painters to create a “new” decoration. The strong resemblance between room 3 and the remains in AU12Nα (Figs. 26 - 27) shows not only that the same confident and expert painters were working in the two areas; it also informs us that painters used the same colours. We can therefore assume that patrons intended the paintings to display the same level of quality in the two areas. This leads us to one last consideration. Given that both in room 3 and AU12Nα the loss of colour leaves the same clear

¹³ Judging from Pirelli 2018, Fig. 10, the figure might be half life-size.

¹⁴ I shall later return to issues related to high-quality painters working in Manqabād.

marks on the painted ground, the technique must also have been the same¹⁵.

Schemes frequent in late antique painting, as paintings based on architectural motifs, imitation opus sectile and marble cladding, are not to be found in Manqabad, as has already been noted for Amheida¹⁶. Given the meaning these elements possess in decorating reception rooms and audience chambers in late antique elite houses (Bragantini 2019), one could wonder if at Manqabad their absence could be due to the peculiar function of the site.

The paintings preserved in the two western lunettes in rooms 6 and 7 are probably the last figural paintings of the Central Sector. On the white ground large brush strokes in different tones of brown design a lion's tail in room 6¹⁷, while in room 7 a snake's tail (?) is painted in green and red. Although both these figures appear very "flat" and without any plasticity, the remains of a green ornament under the lion suggest we should not insist on the chronological gap, all the more so as the two rooms were only dimly lit. Extreme caution should therefore be taken in evaluating these paintings, also given the lack of a proper architectural analysis of rooms in the Central Sector (the south wall of room 7 is built on a walled opening).

Final observations

Even at this preliminary state of the research, I would like to summarize here the main outcomes of this short campaign.

The possible identification of an extensive phase of decoration in the two areas, the northern one and the central ones¹⁸, might point to the same patrons hiring the same painters, and then to a form of "central authority" in charge of building activities. This also chimes with the quality of the craftsmanship, exhibiting all over the site the same thin layer of a straw-tempered, pure white substratum¹⁹.

¹⁵ P. Baraldi, University of Modena, kindly informs me that these marks are probably due to malachite-based pigments applied on limewash, in a *secco* or *mezzo fresco* technique.

¹⁶ McFadden 2014, 362-363. Exception should probably be made for the apse in the South wall of rectangular building in the Central Sector, exhibiting remains of an *opus sectile* imitation painted red.

¹⁷ R. Pirelli suggests that the lion could hint to a saint's miracle taking place in the desert (the lions appearing at St. Paul's death to dig his grave: cfr. Gabra, Eaton-Krauss 2007, nr 109).

¹⁸ Paintings in the Central Area are to be found only in the South-West sector described here.

¹⁹ Note that white plaster is used everywhere on the site to recover walls and walking surfaces, as steps and floors. McFadden 2014, 360-361.

As regards the painters' craftsmanship, it should be stressed that they appear to be part of a long tradition of repertoire and technique, enabling them to easily adapt their patterns to the surfaces at their disposal. The comparison with the houses in Amheida points to the mingling of a different repertoire between mosaicists and painters. Given the decreased significance of figurative painting in late antiquity (and the ever-growing function of mosaic and therefore of mosaicists), it is no wonder that the art of covering a large surface with ornaments that could be easily arranged according to the existing space could also assist painters, but - as McFadden 2014, 362, rightly points out - this "proximity" merits further considerations, in view of the scarcity of mosaics in late antique Egypt.

Different considerations should apply to the fragments discovered in this campaign in AU2N/E7²⁰, a series of haloed faces painted in a rich and lively polychromy²¹ on a dark ground. Along with the archangel of Fig. 3, they are the only figural paintings of this phase met so far in Manqabad²². Skilled use of colour grading, light and shade, and touches of light colour (all the way up to white) where relief is meant to be suggested, give the faces a vivid plasticity. Notwithstanding the marked frontality and the wide open eyes, the faces acquire a lively individuality, evident, e.g., in the delicate face of the young Christ (Fig. 13, top right). Above all, their figural repertoire connects painters working here to a long tradition of high craftsmanship. In the patchy present state of evidence, it is neither possible to envisage a relationship between such different paintings as those described so far, nor can a chronology for them be easily suggested, given their distinctiveness and high level²³.

Not enough late antique painting is preserved in Egypt to allow us to draw conclusions about these painters; moreover, we should also recall the danger of comparing paintings of different quality, as high-level painters pertain to a long, cultured tradition, which makes it all the more delicate to give their styles a chronology. Possibly a 5th-century date could also be proposed for these aura faces.

It is probably inescapable, given the location of these fragments, that one should be reminded of the high painting tradition of mummy portraits of

²⁰ See *supra*, 349.

²¹ The state of conservation of the painted surface suggests that these fragments have been buried not much after having been painted.

²² For paintings of a later phase see note 8.

²³ It is likely that haloed faces should also be recognised in the scanty remains of rectangular niche in room 5, but too little is preserved for any further consideration.

Roman Egypt, although the different techniques (encaustic and tempera in the funerary portraits, *mezzo fresco* or *a secco* in the haloed faces) also required different pigments. A recent reappraisal of mummy portraits has brought to light its roots in the Greek painting tradition, kept alive by a strong demand²⁴. It is therefore perhaps no surprise that this tradition should still be alive for important works like those we might meet in the painted faces here.

Given the scarcity of evidence of late Roman painting in Egypt, it is probably better not to propose any further hypothesis. But the Amheida figurative paintings should once again be recalled, in order to show that paintings have been brought to light there, whose quality and repertoire one would have struggled to envisage. McFadden has rightly pointed out that the scarce demand for high-level figurative painting could barely offer a living to the craftsmen involved (McFadden 2014, 361-362; 367). This consideration brings us to the issue of itinerant painters; but in the present state of evidence, we do not have enough elements for these areas and these chronologies to enable us to elaborate further on these promising issues.

B.2.2 Stone architectural elements in the “Qasr” (A. Salsano)

Many architectural elements were found in a subterranean baked brick building (the so-called “qasr”) (Pirelli 2014) in the Central Sector. The worthiest of note is a big parallelepiped block ($80 \times 33 \times 32$ cm) with two protruding pedestals. The right-hand one is a pedestal with an Attic base; the left-hand one is a pedestal that is not topped by a base.

The pedestals are devoid of the usual mouldings, but the mouldings of the base are well defined; the central part protrudes less. Other big architectural elements were found in the same area: a fragmentary mortar or a basin, formed by three pieces ($35 \times 53 \times 51$ cm); a parallelepiped element ($70 \times 25 \times 20$ cm); two fragments of column shaft (diameter of the first column: 29.5 cm; preserved length: 72 cm; diameter of the second column: 28.5 cm; preserved length: 53 cm); a fragmentary parallelepiped element ($47.5 \times 23.5 \times 27$ cm) that protrudes in the lower part by 13 cm; an Attic base with a pedestal ($70 \times 27 \times 18$ cm; the height of the pedestal is 13.2 cm) with the usual division into three parts, however, they are very schematized. A quadrangular element with a circular hollow

($24.5 \times 16.5 \times 18.5$ cm; diameter of the circular hollow: 13 cm; depth of the circular hollow: 4 cm) and some fragments of slabs, 3.5-5 cm thick, were also found in the same area. Given the monumentality of some of the stone architectural elements found in the “qasr”, their location within this structure seems unlikely today. It will therefore be necessary to undertake a complete investigation of the entire complex in order to confirm its function as a “qasr” and try to understand its relationship with the materials that have been found there.

Though it is not properly an architectural element, it is also interesting to note the documentation of an altar, located west of the “qasr” (Fig. 28). The altar ($110 \times 59 \times 30$ cm) has a protruding upper part with a height of 5 cm and shows a central cross (21×12.5 cm) between the inscriptions indicating Christos and Jesus. Both the cross and the inscriptions are also painted red.

B.3 The Southern Sector

Trial trenches south of the city wall: Tp1, Tp2, Tp3 (C. Cozzolino, I. Incordino, D. Pubblico)

During the previous campaigns/fieldworks, the archaeological evidence and the collection of several fragments of burnt ceramics and bricks mixed with ash suggested the idea of a production area at the southern sector of the site (Pirelli 2018; Pirelli 2019). In order to confirm or reject this hypothesis, a survey and cleaning activities in the so-called “dump area” (Fig. 29) began on 11th and ended on 20th February 2020. Three trench pits (Tp1, Tp2, and Tp3, Fig. 30) were opened at the eastern end of what, at first glance, looked like an enormous dump structure (kiln/s?), to better investigate its nature and function.

The first square trench pit (Tp1) of 4×4 m was opened in the top of this structure, revealing a complex stratigraphy made up of five different layers of deposits, often mixed by natural atmospheric agents. In order to identify the extension and nature of each layer, the trench pit was enlarged (5×10 m). Clearly visible also in the vertical section on the eastern side of the structure, these layers can be summed up as follows: the first was made up of soil mixed with a huge number of pottery sherds, some whole pots, charcoal, and a great quantity of burnt bricks; the second, thinner than the first, was made up of pottery sherds mixed with light ash-coloured sand; the third looked like the second one, except for the presence of yellow sand mixed with vegetable fibres, limestone and flints; the fourth was made up of yellow sand mixed with potsherds and vegetable fibres. The fifth layer showed more or less the same composition as the previous one but was darker in colour.

²⁴ Bragantini 2011; Brecoulaki 2015, 100-104. For her part, Thomas 2019 recalls “how strongly the earlier Roman tradition of ancestor portraits resonates with the later monastic portraits and encompassing portrait programs”.

These layers were probably the top coating of a multi-vaulted building (kiln? Fig. 31), therefore the work on Tp1 was stopped and a second trench pit (Tp2) of 5×5m was opened at the base of the structure.

Cleaning revealed the presence of 5 openings on the eastern façade of the dump. A mud-brick wall ran from the inside of the southernmost opening - where it serves as a base for a vaulted brick roof - to the outside of the structure (Fig. 32). With a total length of 8.42m, it consists of 5 rows of mud bricks whose sizes are approximately 29×14cm (Type 2, Pubblico in Pirelli 2018, 316).

On its eastern edge, the wall meets at right angles another mud-brick wall 2.54m long. This second wall runs from the façade of another structure similar to the former one and located just in front of it. A third trench pit (Tp3) was opened here. No openings have been found so far, but the stratigraphy - made up of unbroken and fragmentary mud bricks and baked bricks, complete amphorae, potsherds, mats, ashes and charcoal - revealed the same layers seen in the Tp2 structure. This suggests that the two buildings worked together as a single system (Fig. 33). This brief archaeological and topographical survey of the area suggests that the main structure should have a maximum size of 43.9×21.3m., with the possible addition of at least 4 or 5 smaller similar structures, maybe connected to one another by mud-brick walls.

From these trenches we collected about 545 pottery fragments, derived from the five different layers identified in the stratigraphy. Among the diagnostic sherds there were cooking pots, lids, jars and dishes, some Egyptian Red Slip Wares (local workshop), Aswan wares, and amphorae, mostly Late Roman 7, but also Late Roman 1 (Cilicia, Cyprus), Late Roman 5 (Palestinian and local) and Gaza Jars. The finding of some waste from production in the area around the trench pits definitely confirms the existence of a pottery production area at Manqabad (Fig. 34).

The analysis of this complex structure is currently continuing; therefore, any conclusion could only be preliminary and, hopefully, confirmed only by a complete excavation of the area to be conducted in the coming years. But several elements noticed during this fieldwork may suggest the hypothesis of an undisturbed multi-purpose area of production related to the monastery of Manqabad. In particular, the waste from production, the location of the complex to the South of the city wall, the roughly circular shape of the building with openings facing East (while the prevailing wind is from North), and the massive presence of burned bricks and pottery sherds all support the depiction of a

large complex for the production of pottery, which has no parallels in any other monastic site of Egypt so far.

B.4 Pottery Analysis (J. Faiers, I. Incordino)

During the three weeks (4th-20th February) spent on site at Manqabad, a collection of pottery was made from the cleaning of the HU (housing units) 12 and 13 and the surface survey from some excavation dumps next to the Northern and Central Sector of the site, in order to construct a type series. This resulted in a fairly comprehensive range of Coptic pottery, which can be compared to other sites for parallels and dating purposes. In the locally made category we found jars, bowls, dishes and cooking wares together with drainpipes, very large basins and storage vessels, flagons, lids, cups and ladles. From short-distance trade and probably from the region of Ashmunein and Antinopolis come the Egyptian Red Slipped bowls and the Late Roman 7 amphorae. From medium-distance trade come the Aswan vessels, bowls, dishes, cups and platters, lamps, lids and also compartmented dishes, which are large platters with numbers of small bowls/cups integrated into the vessel. Also from the region of Aswan or Qena come the very few flagons in white and cream ware.

Also documented were 7 African Red Slip Ware fragments from long-distance trade with North Africa. They can be dated to the early 5th to 6th century AD (Fig. 35). Other pottery in this category includes the Late Roman 1 amphorae from Cilicia or Cyprus (South-East of Turkey); Late Roman 5 Palestinian amphorae, which were also made in Egypt in a different workshop from the late 5th century onwards, and Gaza amphorae from that region. One rim of an African amphora was also noted. Altogether 101 drawings were completed to start a type series, and 82 diagnostic sherds were selected to be kept at the warehouse of the site. In addition, about 46 fragment of glass containers have been documented and stored (together with fragments of glass crucibles, evidence of glass production at Manqabad), in order to be analysed in the near future.

C. THE GEOLOGICAL SURVEY (D. De Luca)

A first survey of the surface area was carried out in order to describe the geology of the site and give information on the nature and compactness of the soils, where the structures were built and the basements were dug.

From previous geological studies, the region where the site lies had been defined as a transitional desert strip, between a piedmont area and a residual

terrace, which lies along the (West) Nile valley, near the city of Assiut (Aboul-Fetooh, 2012).

The area investigated is mainly sandy and it is currently exposed to hyper-arid conditions.

The geological survey of the surface area led to the identification of four different places at which it is possible to follow its stratigraphy to a depth ranging from 1.2 to 2.5m below the soil level: two walls in AU8/9S1/β (Fig. 36) and two walls in the Central Sector of the site, in the so-called "qasr" (Fig. 37).

In particular, the best stratigraphic sequence is detectable on the North wall of AU 8/9 S1/β (underground storeroom of complex AU8/9); the successive layers - here described - are shown in Figure 31:

1. a layer 10cm thick which corresponds to the plastered floor of the open area above the basement;
2. a layer 20 to 40cm thick, corresponding to the screed for the overlying floor. This layer consists in an upper grey screed that can be easily flaked (similar to ashy material) and which overlies building material such as fragments of raw bricks and shards; in the East wall, at about middle depth, there are two layers of white plaster, few millimetres thick;
3. a layer 100cm thick of a semi-compacted sandbank, whose central part is full of flint and nummulite fragments and clastic inclusions of up to 10cm in diameter;
4. a layer of weakly consolidated sandy gravel, with an average thickness of 20cm;
5. a layer of thin sand, very little consolidated, with an average thickness of 20cm;
6. a layer of compact fine sands, with an average thickness of 30cm;
7. a layer of weakly consolidated sandy gravel, with an average thickness of 10cm;
8. a layer of compact sands, for which thickness cannot be assessed.

Considering that the two sections observed during the survey (AU8/9S1 and "qasr") are located respectively in the Northern and in the Central Sector of the site (about 150m apart), and that these are perfectly comparable, the entire archaeological area of Manqabad appears as resting on a homogeneous stratigraphic sequence consisting mainly of sands that makes up layers from small - (above) to well -compacted (deep) soils. This condition certainly had an immediate impact on the construction techniques, and in particular on the preparation of the screed immediately underlying the floors, as can be observed in the cases reported above.

D. THE RESTORATION ACTIVITIES

D.1. The Pilot Project (P. Musella, R. Pirelli)

Since the beginning of the Italian Egyptian project in Manqabad, one of the main objectives of the mission has been to achieve a complete recover of the site, in terms of conservation, enhancement and usability both by devotees and by scholars and visitors.

The mission was immediately aware that both anthropogenic and meteorological agents have been seriously threatening the survival of the site since the beginning of the earlier excavations by our Egyptian colleagues (in 1976). Due to these critical environmental conditions, the fragile architectural structures (mainly in mud bricks), the refined polychrome decorations and the monochromatic plasters - (white or red) that cover both the floors and the walls - have been subjected to significant deterioration year after year, so that now they are in urgent need of adequate restoration and conservation, which have to be regularly discussed and agreed with the Egyptian authorities. For these reasons we decided to proceed in successive stages, intervening from time to time on the Areal Units that we were investigating.

Between 2014 and 2018, the following preliminary interventions were made:

- a) identifying and testing the most suitable restoration materials for the compatibility with the original building materials, in order to prevent the detachment of plaster both on the walls and on the floors;
- b) verifying the adequacy of the interventions;
- c) starting to consolidate the paintings and plasters in severe danger of decay.

The next step was to start fixing and consolidating the wall structures, to make them ready to accommodate the final covering that will protect them from both atmospheric and anthropogenic agents.

To do this, it was planned to create - above the ancient masonry ridges - a sacrifice layer of one or more courses of modern bricks, finally coated with a layer of resistant hydraulic mortar. Between 2018 and the first week of the 2020 campaign, various experiments were conducted to identify the most suitable composition for the mixture used in making the bricks, for the mortar to be positioned between the courses and for the hydraulic mortar with which to cover the sacrifice layers. The structural fragility of the mud bricks required priority in calibrating the operations and in using adequate restoration materials to reduce deterioration; this principle dictated the choice of using mud bricks also for the sacrifice layer.

During the second week of fieldwork, it was decided to start the Pilot Project, which was to lead to the restoration of an entire Areal Unit, involving not only the paintings and wall and floor coverings, but also the wall structures.

After the vandalism that took place in AU2 (see above § B.1.1.1.), we decided to start our Pilot Project here. For the occasion, we collaborated with local craftsmen, whose working methods ensured the correct implementation of modern mud bricks (made by a local company) with the use of artisanal techniques and bedding materials compatible with and similar to the original wall textures. Italian restorers of the mission and Egyptian restorers from the Supreme Council of Antiquities participated in the operations, supervising and correcting the consolidation operations gradually, after removing the deposits of incoherent material from the ridges of masonry and securing the masonry portions and architectural cladding which were going to be involved. As can be seen in Figure 38, the results have been quite satisfactory, both from the point of view of the safety of the structures and as regards respect for the archaeological evidence, which has not been distorted.

D.2. Consolidation of paintings and mud-brick walls (P. Musella, A. Ragionieri)

During the 2020 campaign, P. Musella and A. Ragionieri, supported by three Egyptian restoration workers: Ezzat Salib, Niazy Mostafa Mohamed and Khaled Ab del Maled, also continued to carry out restoration of the walls (Fig. 39) and paintings (Fig. 40) of the AUs under investigation. On the basis of preliminary studies of conservation and restoration of the walls - the materials of which they are made - and the appropriate methodology to be employed, made during the last campaign (Pirelli 2018), restoration works were focused first of all on AU2N. Here in particular, the plaster of S1 and of the external frame of the slanting window (located almost in the centre of the southern wall) was consolidated using the same method used in 2018 (Pirelli 2018), because it was badly damaged, maybe due to the action of atmospheric agents. In the niche AU2N/E7, which was found smashed by unknown persons, some fragments of decorated plaster were found. The decoration seems to represent Jesus Christ and the Biblical Virtues. These fragments were first secured in plastic boxes and then consolidated with nebulized Ethyl Silicate.

In AU12N there was a small dry brick counter between E3 and E4; this modern wall, located here to prevent the wall and the decorated plaster covering it from falling, was removed, and at the same time the plaster decorated with floral elements

was consolidated. In the southern area of this HU (AU12S1) other restoration activities were carried out. This important room, where the painting of the Virgin was found, was completely restored and consolidated, both in its vertical and horizontal architectural cladding. In particular some fragments of decorated plaster of the right pilaster of E1 (the niche of the Virgin), that were found near the niche itself, were placed in situ and consolidated using Acril 33.

Another modern dry brick counter was located in the N/W corner of AU13S1; it was removed and the painting behind it (representing a horse in the upper register, and two camels on the either side of a basin in the lower one) was brought to light and consolidated. In this HU the plaster of the southern wall was badly detached from the wall itself, so the restoration/consolidation work to prevent this was carried out in a rather different way: first imbibition of a lime solution and ethyl silicate was made to prevent the plaster layer from falling, then the usual curb of mortar was made to make the consolidation stronger.

E. SITE MANAGEMENT PROPOSAL (V. Cera, D. Iovane, S. Scandurra)

Plan of a protecting wall; plan for a reception, study and police area.

The design activity was divided into two phases: determination of the vertical partition type to delimit the area; identification and arrangement of buildings to accommodate the activities for the management of the archaeological area.

The project involves the construction of a wall of protection of the site in the N/E with the identification of the access next to the cemetery area (Fig. 40).

The protective wall was designed in masonry with raw earth bricks, in full respect of local construction techniques and materials characteristic of the place. The dimensions of the local bricks are: 28.0cm (L), 13.5cm (W) and 7.0cm (H). The chosen masonry texture, also in relation to its height, is of the four-headed type. Masonry will be plastered leaving the texture of the bricks visible according to the geometric matrices,

In order to make the site usable, four functional blocks were designed in which to allocate the activities necessary for the proper management and maintenance of the area.

The first building (8×5.40m) houses the ticket office and attached services; the second (17.6×5.40m) is dedicated to the guard and attached services; the third (6.35×5.40m) is intended for public services and the fourth (38.5×5.7m)

accommodates management-oriented environments, workshops, warehouses and attached services.

The buildings have been arranged in such a way as to restore and make available to the public the green area already present on the site. Similarly, the project recovered and made accessible the burial monument in the intervention area (Fig. 41).

CONCLUDING REMARKS

As in the previous campaign, the mission's activities during the 2020 fieldwork focused on different projects, conducted as parallel activities by archaeologists, restorers, topographers and architects.

Of primary importance was the beginning of the analysis of the Manqabad paintings, which provided a considerable amount of information. The results of the study move in the same direction as that already expressed in relation to the analyses carried out so far on other artefacts from the site - especially ceramics (Incordino 2018) and architectural elements in stone (Salsano 2015) - and on the inscriptions pictae on the walls of the housing units (Pirelli *et alii* 2017): all of them bearing witness to a lively and high-level cultural milieu (Pirelli 2018). In this regard, significant information was provided on those who commissioned the paintings and on the skills of the specialized craftsmen/artists active in the monastery.

Recurring themes and patterns, and comparable qualities and style of the works in the areas investigated (the AUs of the Northern Sector and the rooms of Area "d" of the Central Sector) made it possible to identify corresponding phases in both of them and to suggest a preliminary chronology, which also confirms hypotheses both about the general pattern of settlement of the monastery, outlined since the first missions (Pirelli 2014), and a higher chronology of the site suggested in previous papers (Pirelli 2019). It is even more remarkable that the sequence of the building phases, suggested for the rooms in the Central Sector (Bragantini B.2.1 above), seems to fit well with what we have already observed in some buildings of the Northern Sector. Even in some of the earliest buildings of the complex (i.e. the HUs of the south row), we can infer at least one phase previous to those paintings that I. Bragantini tentatively attributed to the late 4th-early 5th century.

I am thinking, for instance, of the particular situation that emerged in AU2N, where two apsidal niches (E5 and E7²⁵) are present on the northern half of the east wall, both of which encompass refined

decorations, albeit incomplete today (see above B.1.1.1. and note 6). This particular situation needs some data to be summarized: a) we have not yet found any other HU with two apsidal decorated niches in this sector of the site, although its conditions do not allow us to exclude this with certainty; b) the style and motifs of the decorations are different in the two niches; c) niche E7 is smaller than E5 and, as far as we could observe to date, it does not have any parallel in the HUs of the Northern Sector; e) E5 evidently pertains - both in its architecture and its decoration - to a model recurrent in numerous HUs of the same complex²⁶; f) many of the other oratories of this same sector have a quadrangular plan²⁷.

How we should interpret this is not easy to say in the current state of our knowledge, but I would be tempted to propose that niche E7 represents a decorative system that could go back to a very early stage in the construction of the monastery and soon fell into disuse. Given the general conditions of the paintings and the freshness of their colours, I would suggest that this happened not long after they were painted; and because of the remarkable difference in style and decorative motifs between E7 and the other apsidal niches of the Northern Sector, I also suggest that something not of secondary importance might have occurred to cause this change. We cannot go much further in our hypotheses, but in the next campaign, it will be useful to return to the analysis of the decorations and architectural system of the eastern walls of the HUs, bearing in mind these considerations.

A second project carried out in 2020 was the continuation of the archaeological survey of the housing units and of their materials, which also included the first excavation work.

As to the archaeological survey of the AUs (AU12 and 13) of the Northern Sector, they allowed us to confirm the results of the previous investigations in 2014 and 2018, as well as to collect completely new data on the possible roofing and height of the ground floor rooms and on their system of windows. For the first time the mission investigated a Type 4 HU (AU12N): this proved to be a major cell with an extended decorative program not limited to the oratory niche, but also involving the west wall of room α (see above B.2.), its repertory of decorative pattern doubling those of Room 3 in the Central Sector of the site, one of the so-called "refectories". Unexpectedly, the poor condition of the floor of the common court

²⁵ On the excavation and the materials discovered in this niche, see above B.1.1.1.

²⁶ See for instance AU3N; AU11N; AU12N; AU18N.

²⁷ AU4N; AU15N, AU17N; AU20N, AU21N, AU25N, AU33N, to cite only those whose plan is today still detectable.

(AU12/12S) provided much information about the development phases of the complex, since at least 5 layers of white plaster could be identified in the exposed section of the floor. The same sequence was found in another exposed section in AU12S2/α, which shows a 5-phase stratified filling of the ground against the monumental door. The long period of development and use of the complex, testified by the archaeological observations, is further confirmed by the paintings discovered in the southernmost sector of AU12/13, respectively the Virgin - coming from AU12S1 and now kept in the storehouse of el-Ashmunein (Pirelli 2019) - and the two paintings still *in situ* on the North and West walls of AU13S1: although they have not yet been the object of a specific study, they clearly pertain to a much later pictorial phase.

The first limited excavation work, carried out for urgent reasons of conservation, allowed the mission to collect much new information about the productive activities and daily life of the monastery, and will be the point of departure for new investigations and research.

In particular, in the niche/storeroom AU2S/W1, several organic items were collected and will give significant information about the diet of the monks, the tools and fabrics used in the monastery, and the specific function of certain types of niches. The results of the analyses of these materials will be usefully compared with those collected in the large fireplace of AU12S1β, and with those collected in 2018 in the kitchen of AU8/9S. However, interesting answers are expected also from the study of fine glass containers often decorated, of leather sandals, different fabrics, ropes and baskets, collected in various AUs in this and the past fieldwork.

The investigation of the production area South of the city walls, already identified in the past seasons, produced extraordinary results, since a very broad and articulated complex of kilns for pottery (?) emerged from the preliminary cleaning of one of the "dumps": several vaulted tunnels are built next to each other around the slopes of the mound, and open into a vast area partially closed by mud-brick walls.

The complexity and peculiarities of the structure (see B.3.1 above) will be the object of an in-depth archaeological investigation in the coming years, with plans to dedicate a longer period and a greater number of archaeologists and workers to it; to do this it will also be necessary to ask the Egyptian authorities to extend our permit and approve a complete excavation of the area. However, even now, on the basis of current data, it is possible to affirm that, given the size of the structure - where it is highly probable that the

ceramic was fired - the production seems to have been far superior to local needs only; in this way it is also reasonable to assume that the surplus was used in the context of exchanges and distributed to other monastic institutions in Egypt and beyond. As a result of observations made already during the 2018 mission, the types of ceramics identified allow us to frame the site in a dense network of exchanges - direct or indirect - not only with Gaza and proconsular Africa, but also with the ports of Cilicia and the rest of the eastern Mediterranean (Pirelli 2018 and above B.4).

This year the geological survey was also started, firstly with the aim of providing immediate information on the geological nature of the site, in order to understand the building necessities and strategies. In the near future it will also be used to better understand the concentration of water in the aquifers below the site surface and the exploitation and use of water resources, with particular reference to the large thermal structure of the Central Sector, which will be one of the focuses of the next campaign.

As in the last season (2018), an important part of the activities was dedicated by the mission to restoration and conservation questions. The analyses of the materials and techniques experimented with in the past years permitted us to plan in advance our work on the paintings and on the wall and floor coverings, and to buy more adequate restoration materials before arriving on the site, partly in Italy and partly in Cairo, so that the activities could start immediately and proceeded rapidly in collaboration with the Egyptian restorers. Thus, it was also possible to concentrate our attention on the different solution for the "Pilot Project" which will be the base for the future restoration in all the AUs investigated. The results of the intervention into Areal Unit 2 (Figs 14, 38) were rather satisfactory: the Areal Unit appears clean, with solid walls and consolidated paintings, and the architectural and functional structures are clearly recognizable, even though no reconstruction has been carried out. In the next season, we will verify the stability of the work and, in case of positive results, will proceed progressively with the other AUs of the Northern Sector. While the study for covering the structures is ongoing, the consolidated paintings will be protected with fabrics.

The last focus of 2020 campaign was to present the Ministry of Antiquities with the first proposals of site management.

The team of architects of the Università degli Studi di Napoli Federico II (DiArc) prepared a preliminary project to provide the site of a protective wall which will close the East side of the

archaeological area. The structure will be built between the wall of the modern Islamic cemetery (North) and the walls of the houses of the modern village South of the ancient site. Inside the walled area, and before the archaeological remains, two buildings will be located, North and South of the entrance, respectively with the police station, and the buildings dedicated to the inspectorate, with warehouses and work and meeting rooms.

All the activities carried out on the site have benefited greatly from the constant and regular technical support of the topographical work, which is fundamental both for the completion of the general geo-referenced map of the site, and for providing all the graphic and photographic data of the areas investigated, which will be employed for the study and dissemination of the results.

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Point name	Y	X	Z
CNT001	1134.814	1012.065	13.210
CNT002	1087.540	1031.521	9.770
CNT003	1040.540	1051.312	19.941
CNT004	994.446	1052.511	15.504

Tab. 1 - Coordinates of the control points acquired with total station on the façades of the modern houses

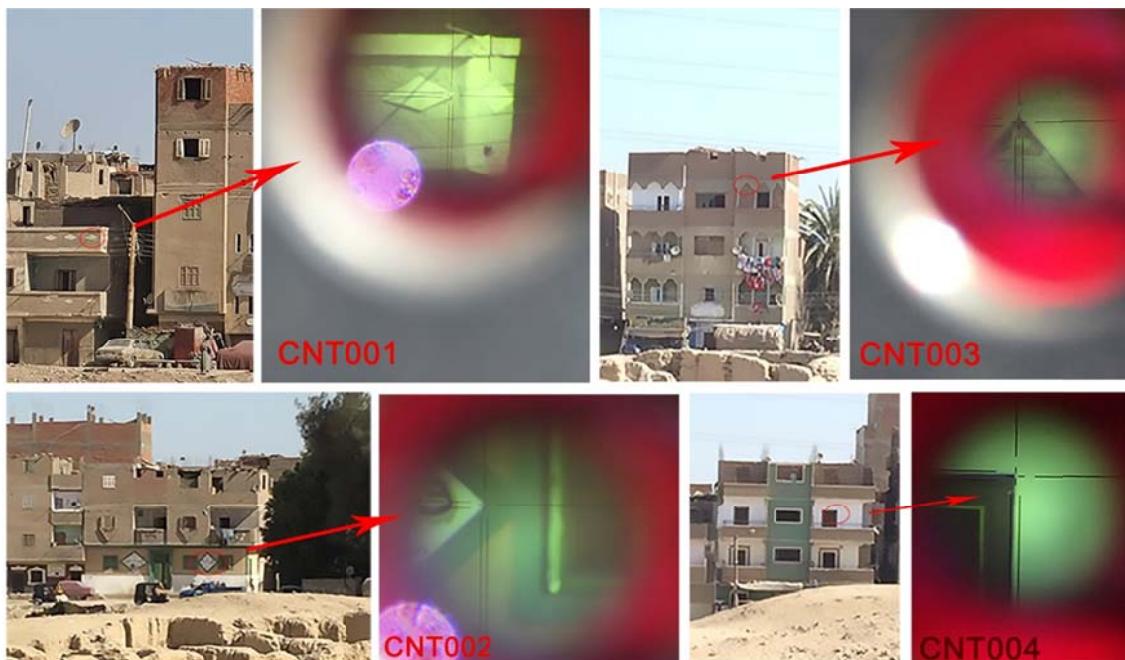


Fig. 1 - Images of the control points on the façades of the modern houses of Manqabad

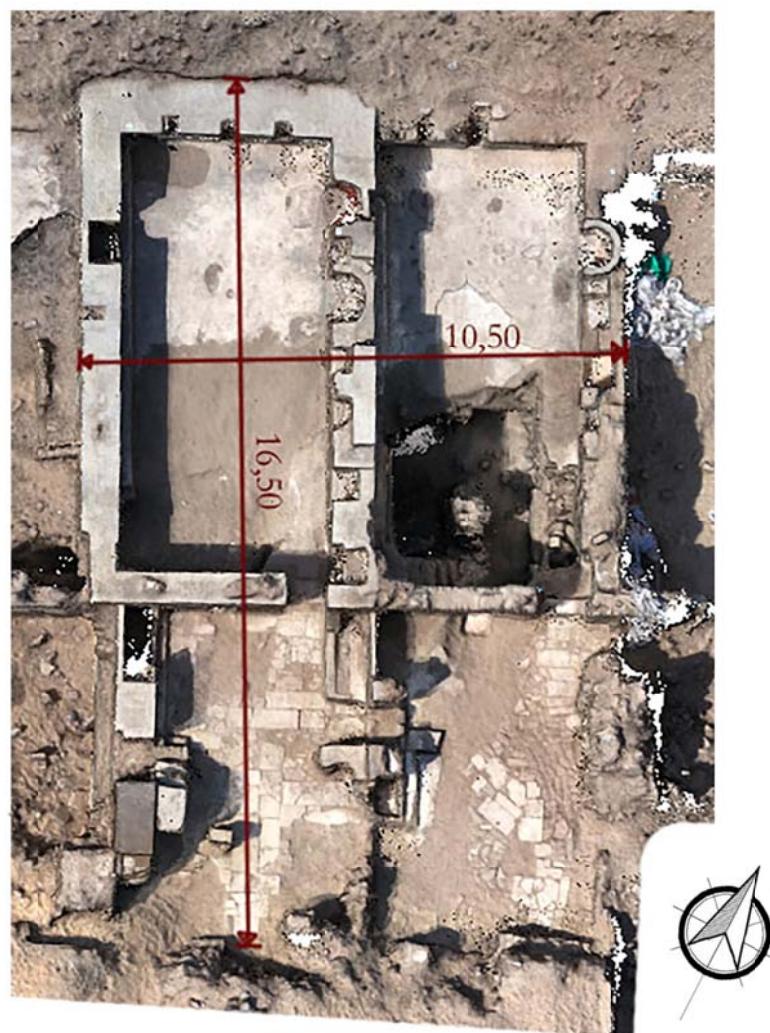


Fig. 2 - Plan of AU2-AU3. GoPro model

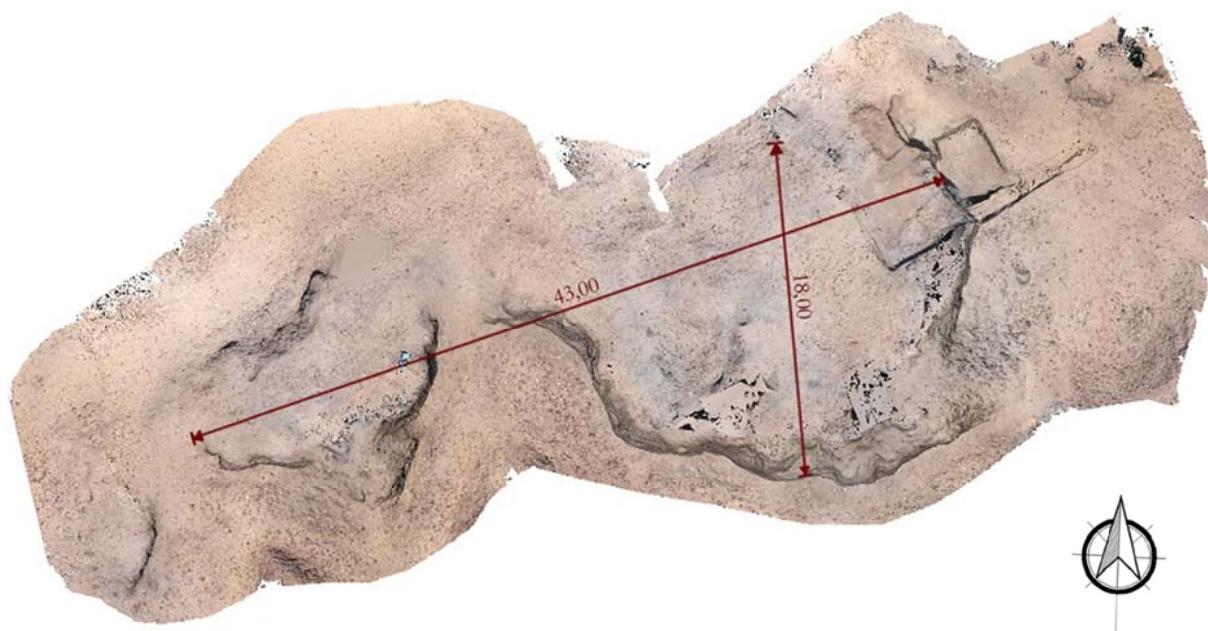


Fig. 3 - Plan of the so-called dump. GoPro model

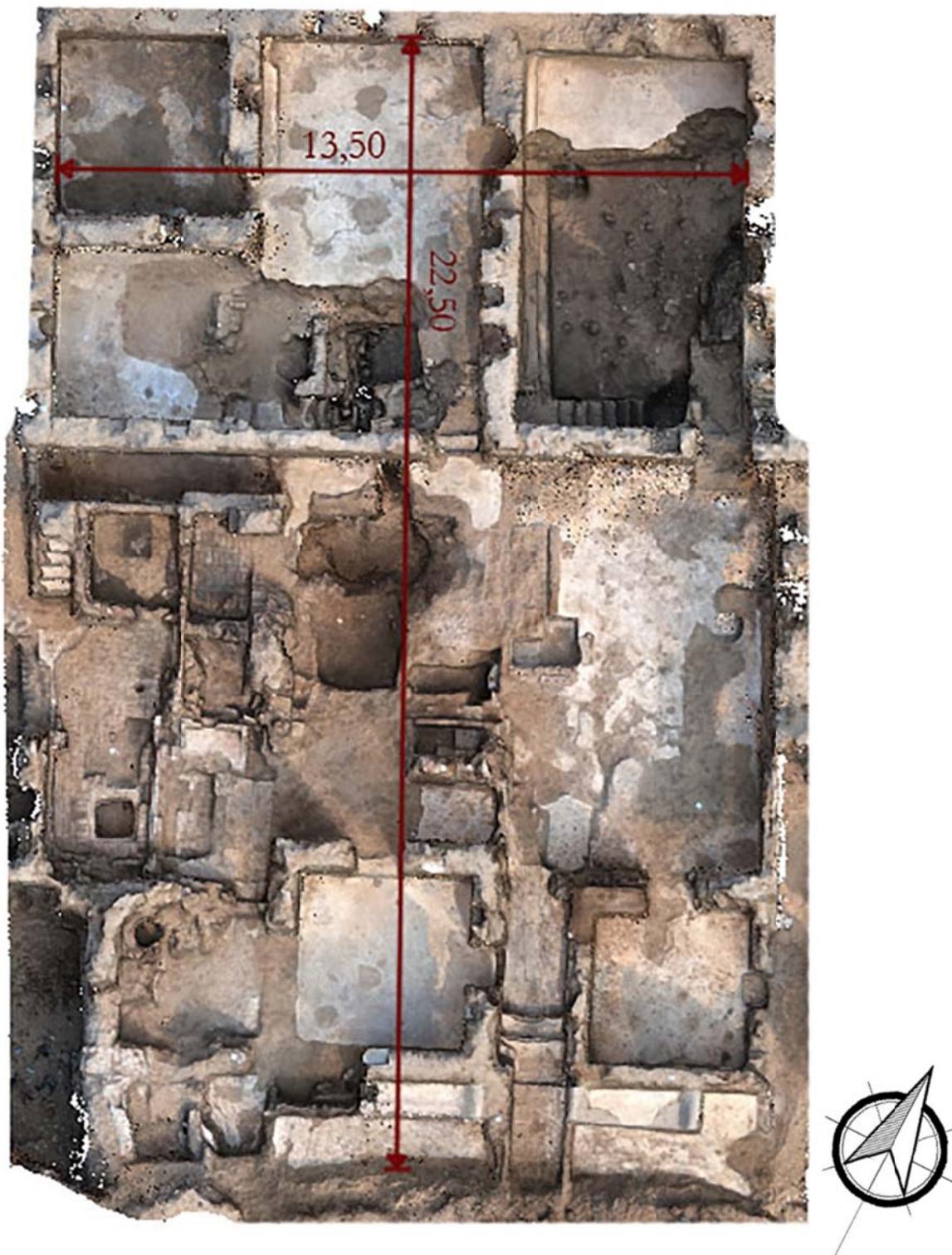


Fig. 4 - Plan of the AU12-AU13. GoPro model

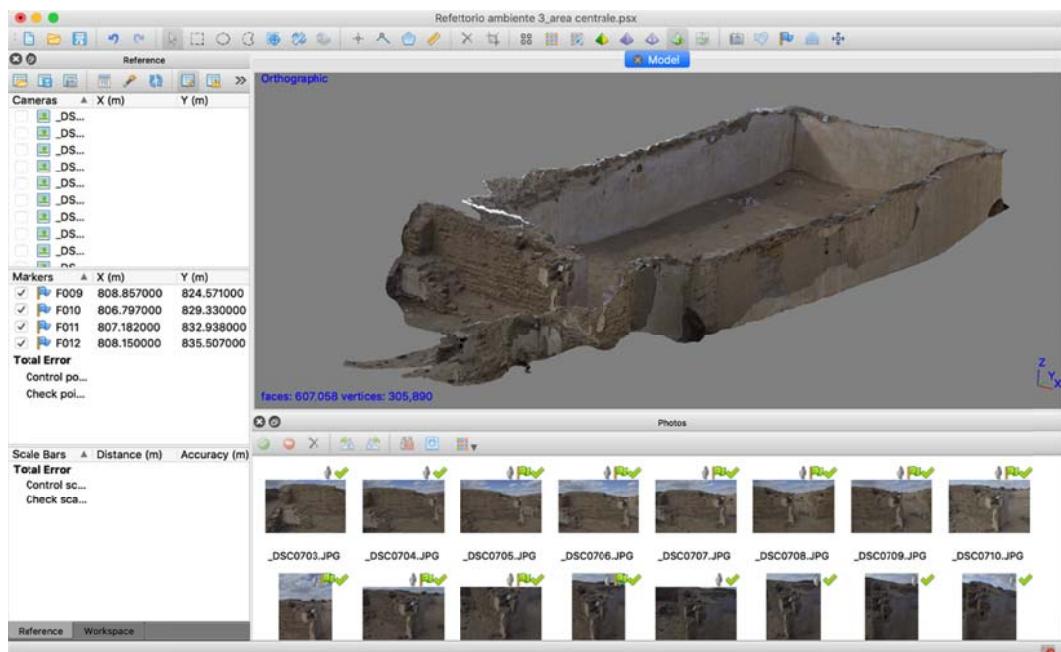


Fig. 5 - A view of the model of the room 3 in software Agisoft Photoscan



Fig. 6 - Elevation of the niche in AU2. Reflex model

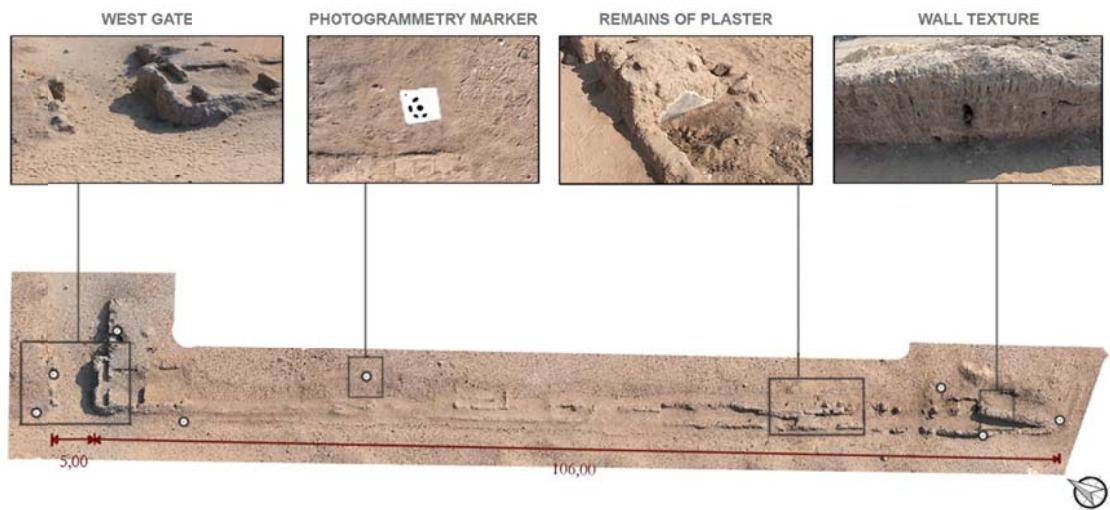


Fig. 7 - Plan of the West wall. GoPro model

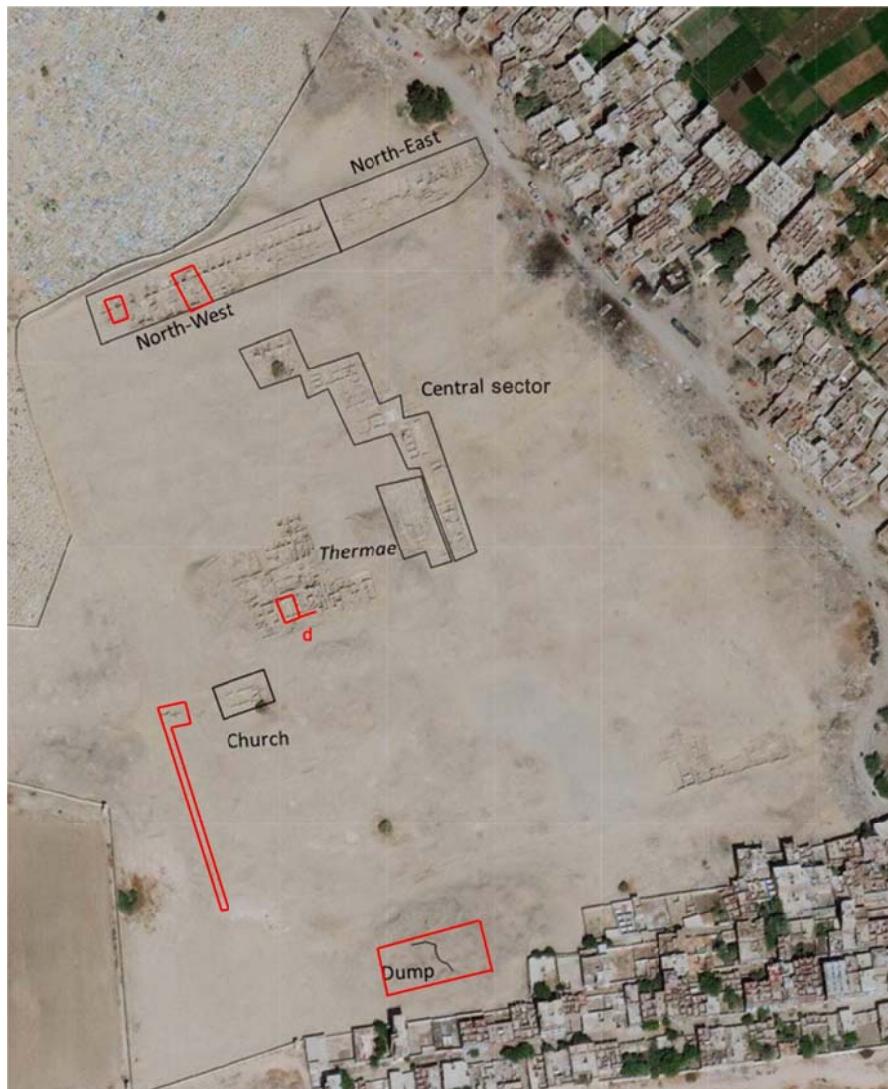


Fig. 8 - General plan of the site with the areas investigated acquired by photogrammetry: 2018 fieldwork (in black); 2020 fieldwork (in red)

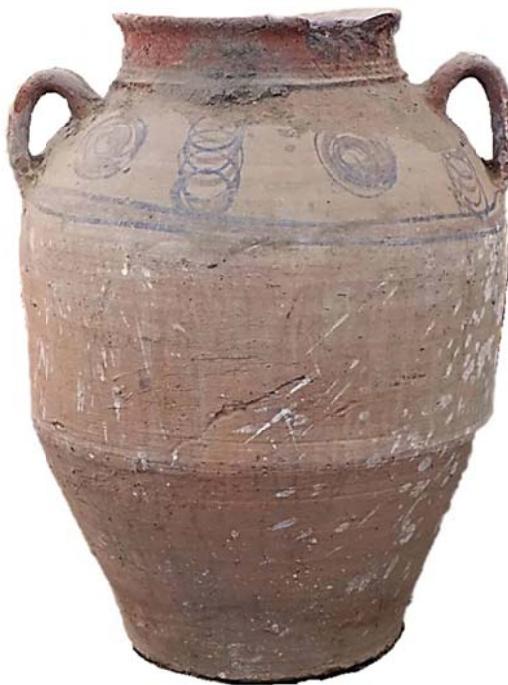


Fig. 9 - Large jar from Niche AU2N/E7



Fig. 10 - Niche AU2N/E7 after the vandalism



Fig. 11- Niche AU2N/E7 in 2018



Fig. 12 - Fragments of the red and black decoration from niche AU2N/E7



Fig. 13 - Fragments of the wall decorations with haloed faces from niche AU2N/E7



Fig. 14 - Niche AU2N/E7 after digging and restoration



Fig. 15 - Niche/storeroom AU2S/W1 after digging and restoration



Fig. 16 - The thick ropes from niche/storeroom AU2S/W1, during extraction

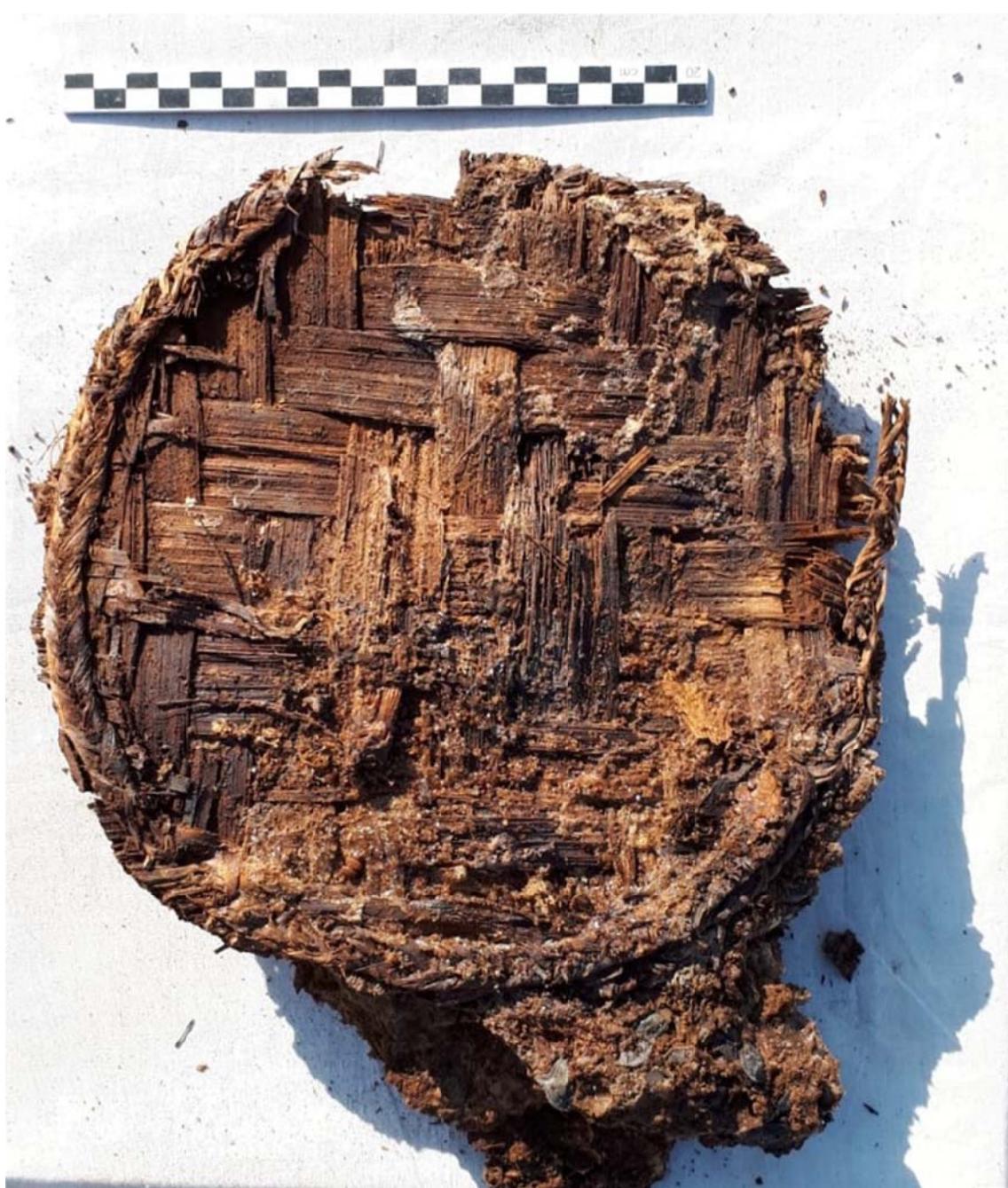


Fig. 17 - The bottom of a basket from the niche/storeroom AU2S/W1



Fig. 18 - The accommodation for the door pin in AU12Sβ



Fig. 19 - The window in AU12N/S underground

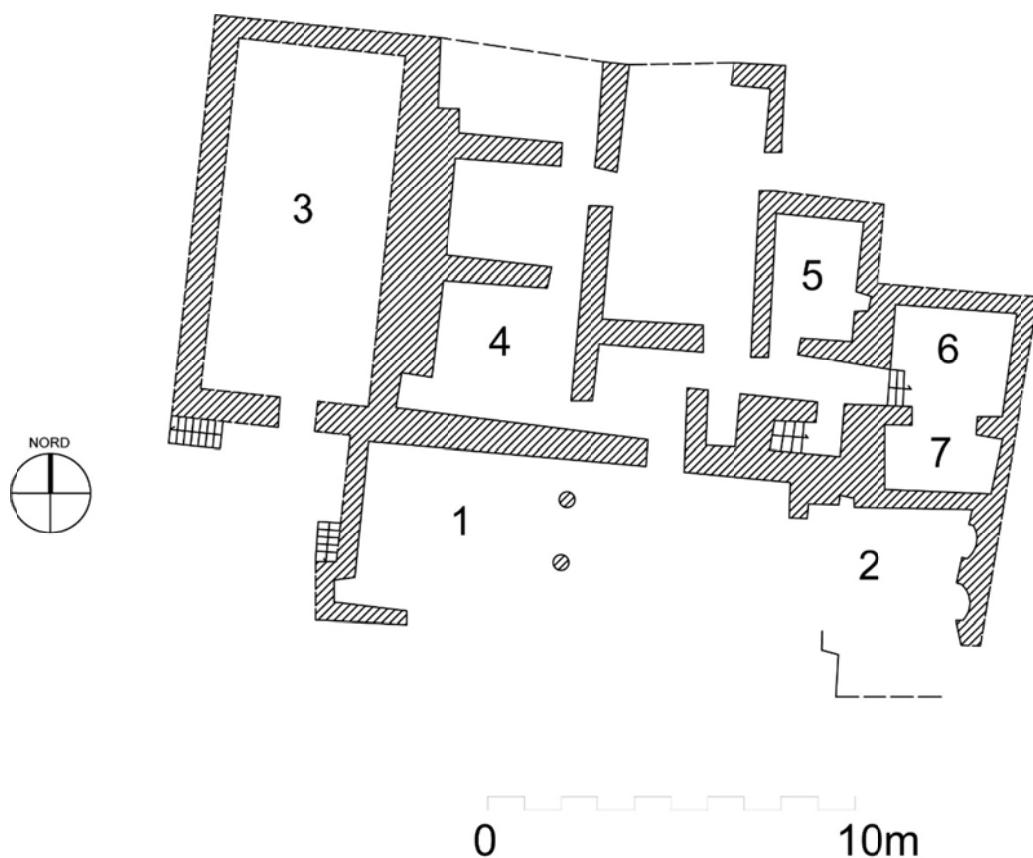


Fig. 20 - Schematic planimetry of Area "d" of the Central Sector



Fig. 21 - Room 1, North wall



Fig. 22 - Oratory niche AU2N, empty throne (?) and archangel



Fig. 23 - Room 5, West wall



Fig. 24 - Room 3, West wall



Fig. 25 - Stone block housing the bolt of the door of Room 3



Fig. 26 - Room 3, West wall, detail



Fig. 27 - Room AU12N α , West wall, detail



Fig. 28 - The altar in the Central Sector, close to the "Qasr"

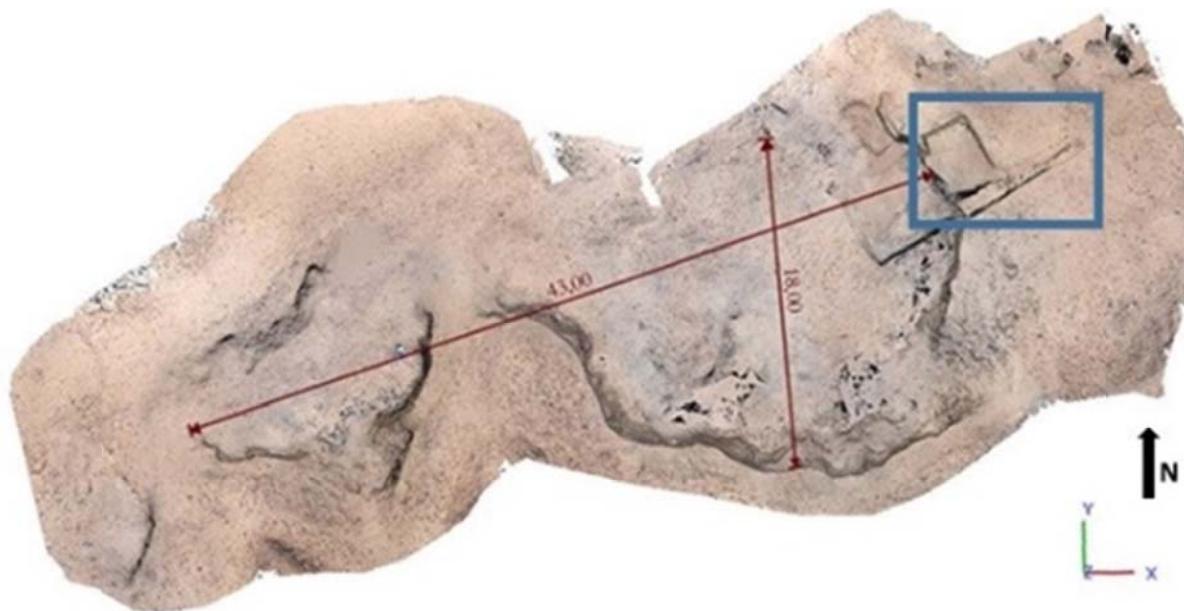


Fig. 29 - 3D model of the dump area (the blue area indicates the Trench Pits sector)



Fig. 30 - Overview of the Trench Pits



Fig. 31 - Trench Pit 1



Fig. 32 - Trench Pit 2



Fig. 33 - The brick wall connecting the main structure with a secondary one (Tp3)



Fig. 34 - Waste of pottery production from the 'dump' area



Fig. 35 - Fragments of African Red Slip Ware (ARS) from North Africa (early 5th-6th cent. AD)



Fig. 36 - Geological stratigraphy in AU8/9S1/β



Fig. 37 - Geological stratigraphy in the “Qasr”



Fig. 38 - AU2 after complete restoration compared with the contiguous AU3



Fig. 39 - Restorations of the walls of AU12S1/a



Fig. 40 - Consolidations of the paintings from niche E7 in AU2N

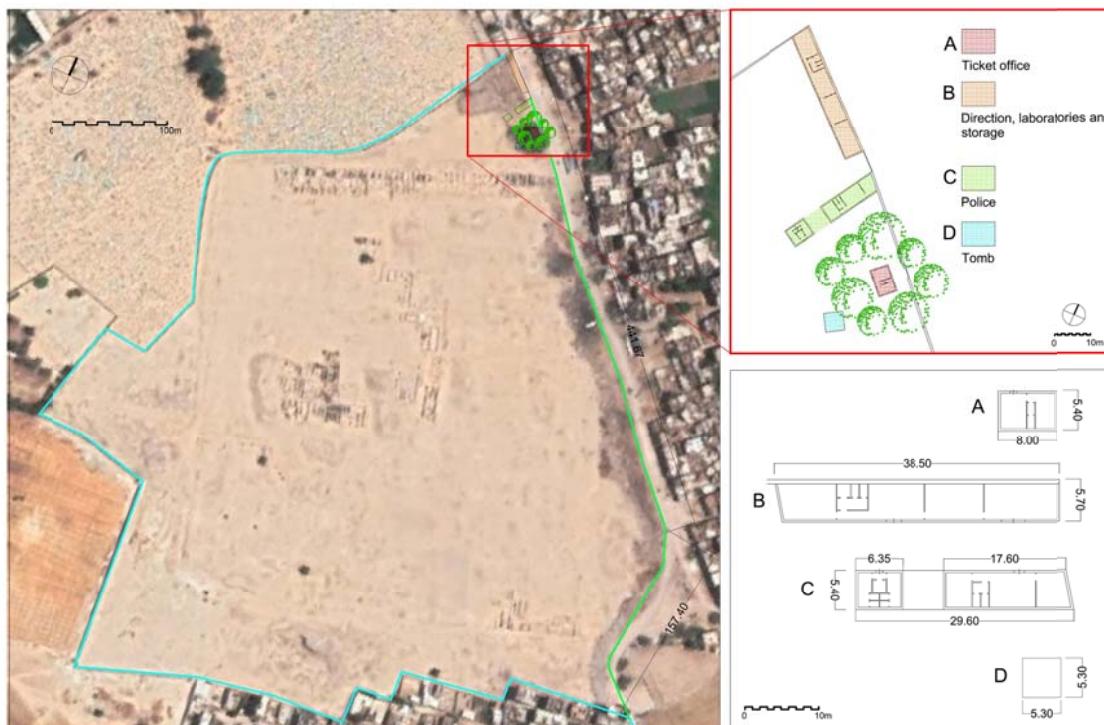


Fig. 41 - Territorial framework and floor plans

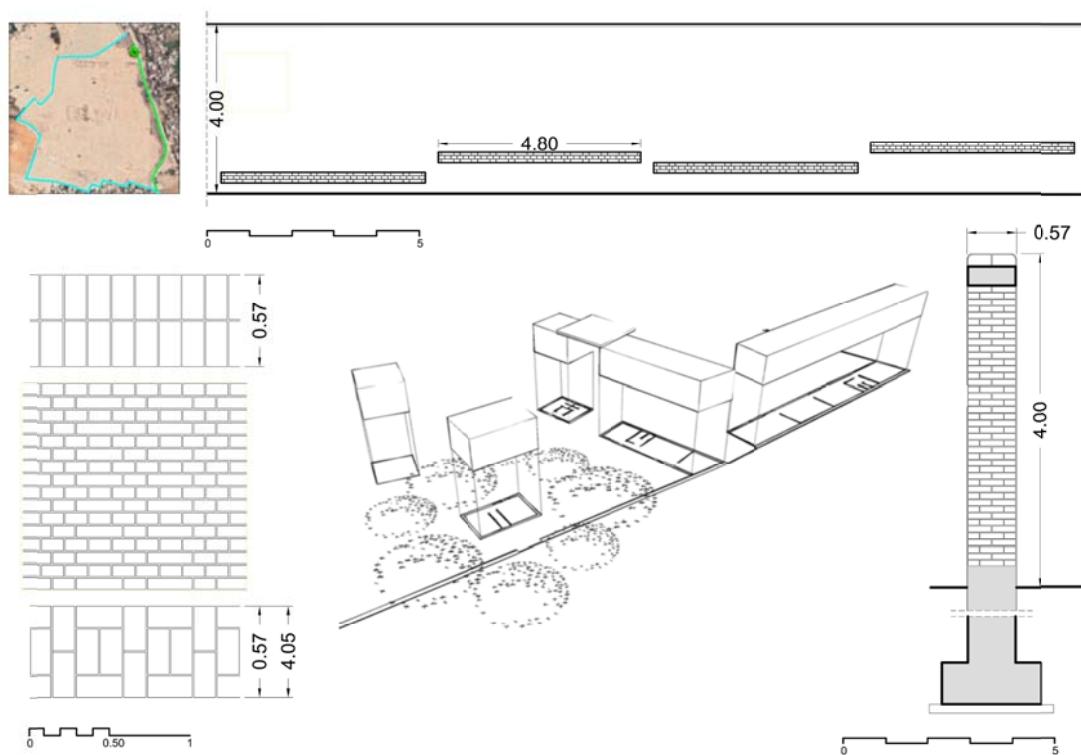


Fig. 42 - Perspective view and details