

The North-East living quarter of the medieval pilgrim centre in Banganarti. Archaeological research in 2015 and 2016

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Abstract: Two seasons of fieldwork in the northeastern part of Banganarti site brought significant data on its stratification, as well as the architecture of medieval dwellings. This paper presents a summary of the results. Special attention was focused on the layout of the buildings and on vault usage. Remarks concern the functionality of the explored space, based on an interpretation of the stratigraphy. Evidence of strong water erosion in the early stages of the settlement is also discussed.

Keywords: Banganarti, medieval architecture, vaults, archaeology of dwellings

The medieval settlement site of Banganarti is situated on the eastern bank of the Nile, between the Third and Fourth cataracts, about 8 km from Dongola, the capital of the medieval Kingdom of Makuria. Since 2001 (Żurawski 2002: 221–226), the site has been investigated by Prof. Bogdan Żurawski from the Institute of Mediterranean and Oriental Cultures of the Polish Academy of Sciences, working on behalf of the Polish Centre of Mediterranean Archaeology of the University of Warsaw and, since 2016,

in cooperation with the Institute of Archaeology of the University of Rzeszów.

Research had been focused previously on the church in the middle of the site and on the surrounding fortifications. Since 2014, attention has shifted to the living quarters which started to be excavated already in 2008. The excavations in the NECH sector, trench I, have continued since 2015 (Żurawski 2016: 357).¹ This paper presents a summary of the results of the fieldwork, carried out within the said trench in 2015 and 2016.

¹ A new site grid of square sectors (30 × 30 m) was generated in the 2016/2017 season and all the areas (distinguished rooms, streets etc.), layers and features have been numbered separately for each sector; for the new site marking, see *Fig. 1*. In the first of the seasons discussed in this paper, the trench in question was identified as I/2015. Turning out now to be located in two of the newly distinguished sectors, it has been documented as a whole within the NECH sector in order to maintain continuity in the numbering of areas and stratigraphic units.

SCOPE AND METHODOLOGY

Trench I was opened on the northeastern side of the church, near an area explored in part between 2010 and 2014 (Żurawski 2016: 354, 355, Fig. 2). It covered an area of about 350 m² [Figs 1, 2]. The tops of medieval walls from the last phase of the existence of the settlement were exposed under a layer of sand that was 0.10–0.50 m thick. Altogether 33 different areas were distinguished: potential rooms, streets and units of unknown purpose [Fig. 2 bottom]. This division became the basis for further exploration and documentation.

Exploration followed stratigraphic layers. Aeolian sand, backfill and some cultural layers were removed with shovels. Features and most of the cultural layers, including all floor levels, were explored with trowels, spatulas and brushes. Spatial measurements were made with TST in relation to the geodesic site grid. A level instrument was used as well. The whole trench was documented with 3D photogrammetric models of areas and orthophotographic records of walls. Documentation included also digital photos, photogrammetric and drawing documentation of plans and section cuts of distinguished layers and features.

Archaeological finds and samples were registered within area divisions and with

stratigraphic layer and feature data. Bulk pottery material was collected in full, photographed and provisionally examined by Aneta Cedro. A quantifying method, based on determining a minimum number of vessels for each assemblage, was applied. All diagnostic vessel fragments (rims, bases, characteristic vessel-body parts) were recorded. The second most numerous

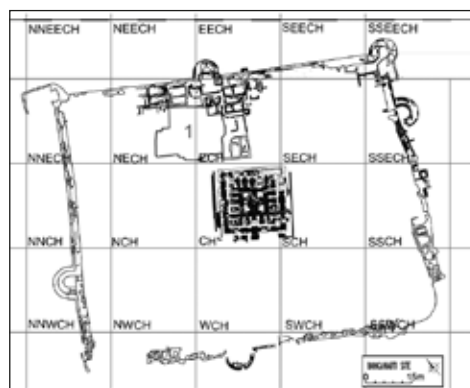


Fig. 1. New site grid of Banganarti with the sector markings and the location of trench I in the NECH sector, shown in relation to the Raphaelion, the surrounding wall and remains of the nearest excavated structures. 1 – trench I; NECH – sector designations (Plan based on drawing by R. Łopaciuk et al.)

Team

Dates of work: 19 January–10 March 2015 and 23 January–16 February 2016

General Director: Assoc. Prof. Bogdan Żurawski (Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences)

NCAM representatives: Tamadur Ali Ebeid (2015), Abdel Raouf Jubara (2016)

Trench supervisor: Dr. Michał Dzik (Institute of Archaeology, University of Rzeszów)

Topographer: Roman Łopaciuk (Geomatic, 2015, 2016)

Pottery experts: Aneta Cedro (Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences; 2015, 2016); Katarzyna Mich, student-trainee (Adam Mickiewicz University, Poznań; 2015)

group of finds, that is, animal bones, was registered in full, except for material from the latest aeolian sand layers. Selected finds were documented photographically.

Detailed archaeological–architectural documentation was carried out for 13 areas so far: Nos 1, 2, 4, 5, 7, 8a, 11, 13, 17, 19, 21, 22, 25. Separate forms identifying specifically features in each of these areas cover the following data:

- basic information about each wall, its dimensions and MSL (mean sea level);
- descriptions, in tabular form, of

stratigraphic units distinguished on the wall faces, including walls, plasters, passage openings, recesses, stairs and other architectural elements;

- matrix of stratification of explored layers within the area borders, in relation to stratigraphic units specified on the grounds of the architectural analysis;
- photogrammetric documentation marking distinctive stratigraphic units on the wall faces and photos of selected architectural elements.

RESULTS OF EXCAVATION

Characteristic of the part of the site under exploration is its severe destruction by digging for building material (*muna*) and fertile soil (*maroq*), confirmed in 17 areas. This led to devastation of some of the architecture and disturbance of cultural layers. Areas 6, 7, 8, 10, 15, 18c were the most destroyed, the pits dug in these areas reaching 2–3 m below current ground level. Tracing the boundaries of units from the youngest phase was greatly hindered by this situation, especially in areas 8, 18 and to the northwest of area 5.

Exploration in 23 areas was stopped on the level of the youngest medieval cultural layers after removing the post-settlement destruction. Further exploration was conducted in ten areas: 1, 2, 4, 5, 9, 11, 13, 16, 17 and 20. Area 5 was explored to the level of undisturbed subsoil in its northern part (around 146.80 m a.s.l., which is 5.20 m below the top of the preserved walls).

During the two seasons, 52 features and 215 stratigraphic layers were documented. The archaeological material from these excavations included: almost 6600 frag-

ments of pottery (23% out of overall number of nearly 28,600 pieces collected from the site in general) and 23 complete vessels, over 1050 fragments of animal bones, 107 stone tools, some construction elements, including floor tiles, bricks and window crates, clay spindle whorls, part of a stone sepulchral cross, fragments of glass vessels, a few beads made of glass and ostrich eggshell, a fragment of a stone bracelet, an archer's ring and a stone pectoral (Żurawski 2016).

Most of the finds are from a domestic or craft context with the exception of a grave dug in the coping of the wall between areas 6 and 10 (No. 1), related to the last phase of use of this space [see *Fig. 2* bottom]. Only a small part of this burial, which lay directly on the wall, was preserved: a fragment of a hip bone, the vertebra and bones of the right forearm. The bones were found lying at an elevation of 151.73 m a.s.l., in a pit 0.50 m wide. The skeleton position was supine, oriented to the southeast, the right arm straight and the hand on the right hip.

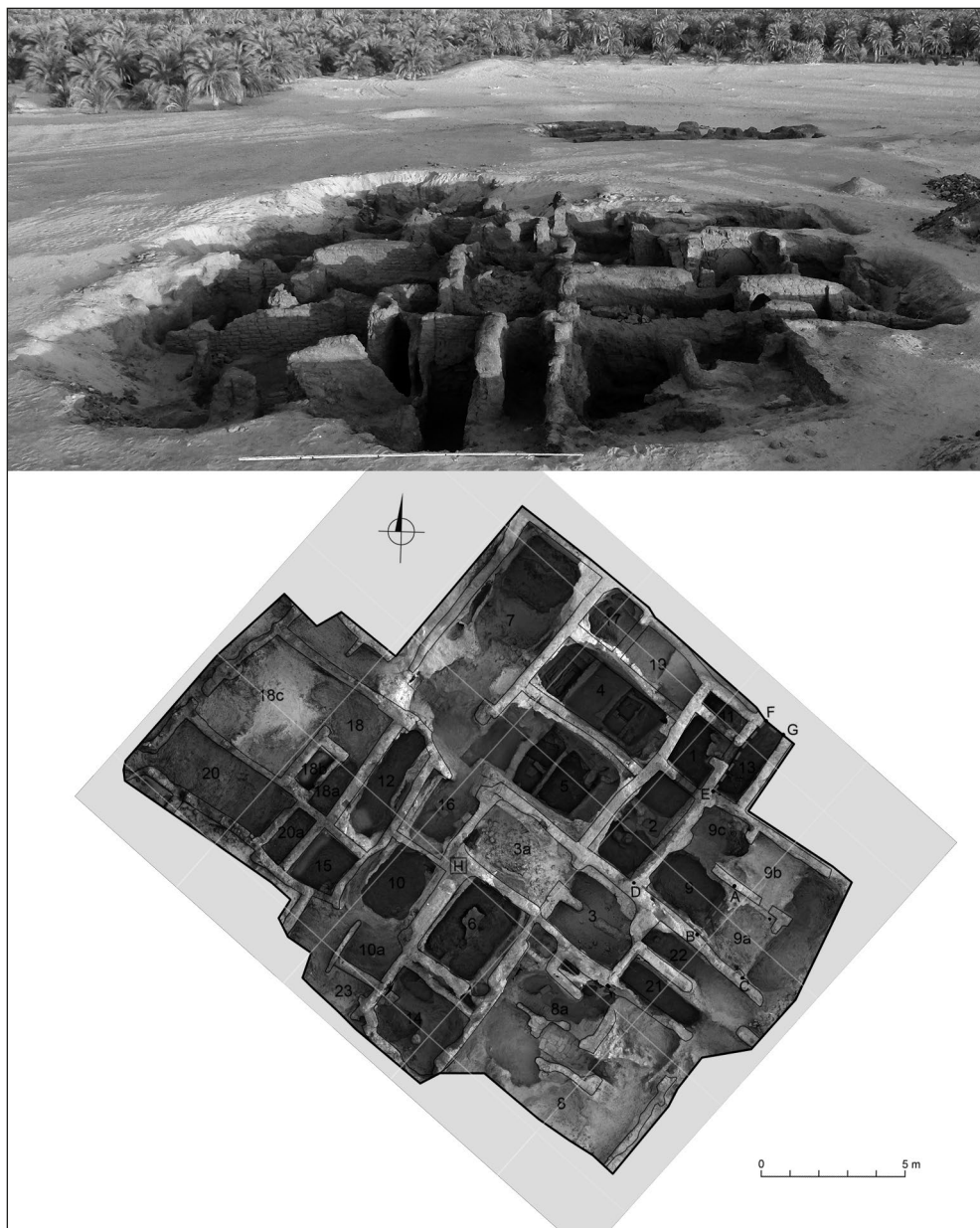


Fig. 2. Trench I in the NECH sector: top, view from the southeast; bottom, orthophoto generated from a digital elevation model based on photos taken in February 2016. A–G – section views in Figs 5, 8, 9; H – location of a burial; 1–23 – numbering of areas (Photos and measurements M. Dzik, R. Łopaciuk; processing M. Dzik)

ARCHITECTURE

The good state of architectural preservation despite modern disturbance has resulted in a large amount of data pertaining to issues of dwelling form, construction, changes in spatial division and use. The remarks presented in this paper will be limited to a general characteristic of the archaeological substance, leaving a more detailed examination of the more minutely explored eastern part of the trench, which includes House A, for a separate study.

The apparently chaotic building layout [see *Fig. 2 top*] is the result of a multi-phase development with rebuilding of

single units, evolution of house layout and changes in street setting. Buildings discovered in the upper part of trench I can be associated with eight or nine dwellings [*Fig. 3*]. They were in use during the late phase of the settlement, which however was not the final one, as part of the discovered architecture was overbuilt with younger walls, the preservation of which is vestigial. In some cases, these upper structures formed second floors of two storey houses, whose well-retained ground floors were documented. In other buildings, they were founded on the level of the preserved wall

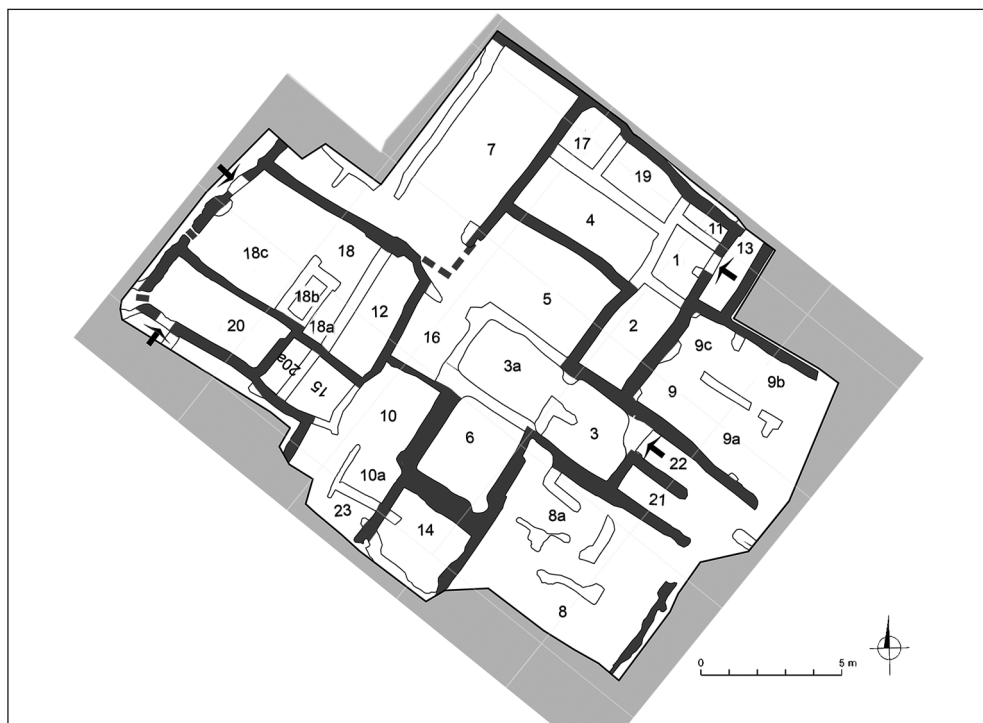


Fig. 3. Wall tops in trench I after removal of the upper layer of sand. Dark grey – boundaries of dwellings from a late phase; arrows mark the entrances to dwellings; 1–23 – numbering of areas (Drawing M. Dzik)

copings and maintained the older layout only by chance.

It needs to be stressed that the documented division of late dwellings, quite haphazard, does not fully reflect the shape of houses in the earlier phases. For example, House A, encompassing areas 1, 2, 4 and 11, came into existence after considerable rebuilding of an older, larger dwelling which included also areas 5 and 7. However, some continuity in the layout of parcels through the ages is clearly visible.

An example of such continuity is the south wall of House A, visible from area 13, that is, from the street [Fig. 4]. This wall was bricked up directly on top of older structure 13.D.1 and kept its course. One of the last investments to be seen on the wall face is its overbuilding with wall 13.D.4. At the same time, the level of

the entrance to the house was raised by 0.95 m and a new opening 13.D.12 with threshold 13.D.14 was built (this was undertaken from a ground level at the top of layer 55b, which is 0.60 m below the threshold). In this case, not only the line of an older wall was kept, but also the location of an entrance, which remained the same despite changing ground level and repeated rebuilding of the dwelling. A similar situation was observed in area 5. The east wall, built partly on top of cultural layers 0.40–0.50 m thick, keeps the line of a wall of a much older building, found 2.10 m underneath.

A characteristic feature of the Banganarti buildings is the ubiquitous use of arches. Conical and barrel vaults covering rooms and staircases, as well as arched door openings were also common in dwellings

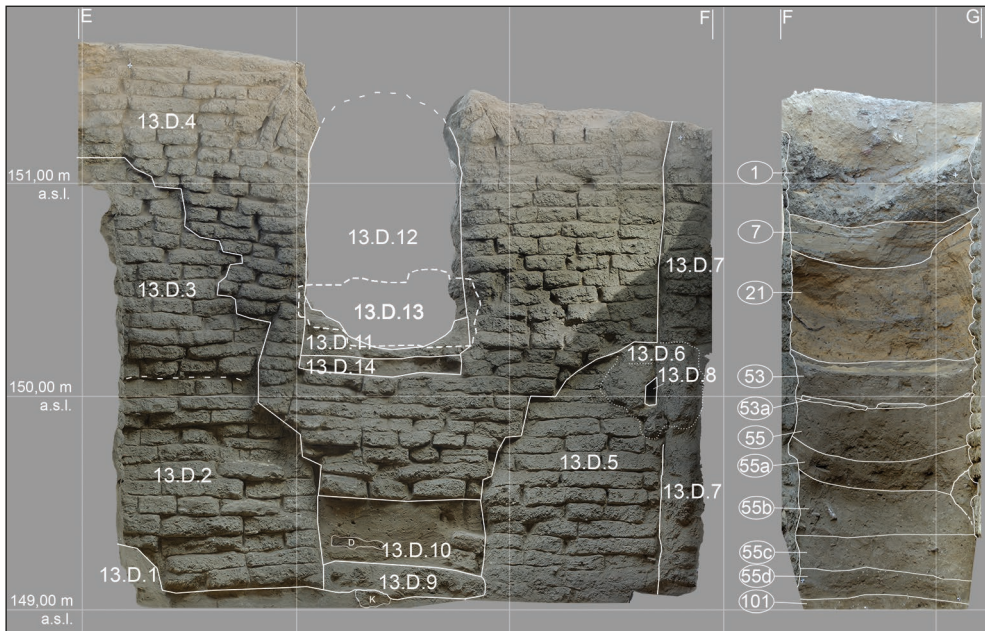


Fig. 4. Photogrammetric documentation of the north wall and east section cut (on right) of area 13 (Processing M. Dzik)

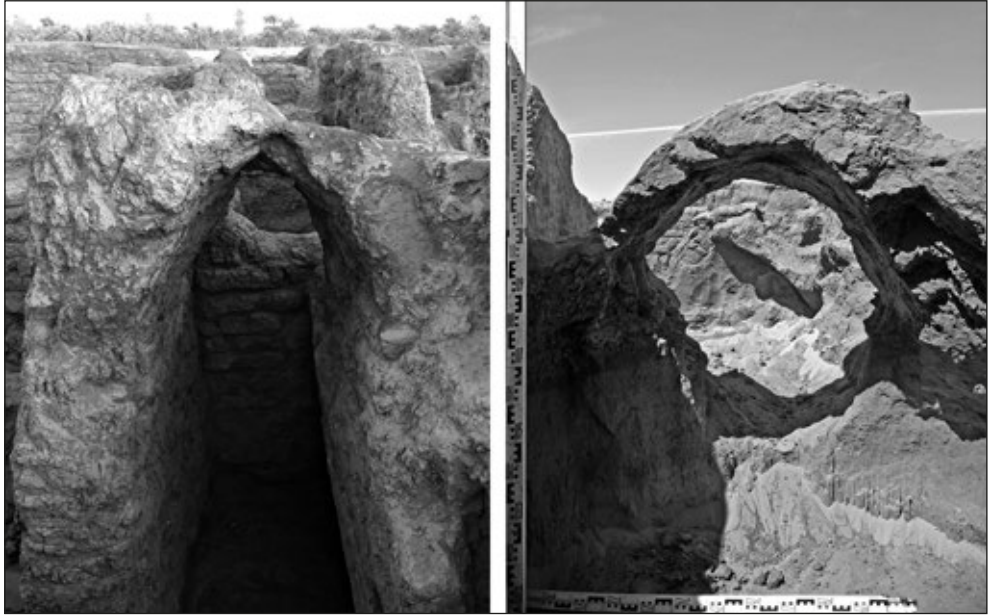


Fig. 5. Examples of arched architecture in trench I (2015): left, staircase in area 8a and right, vault in area 4 (Photos M. Dzik)

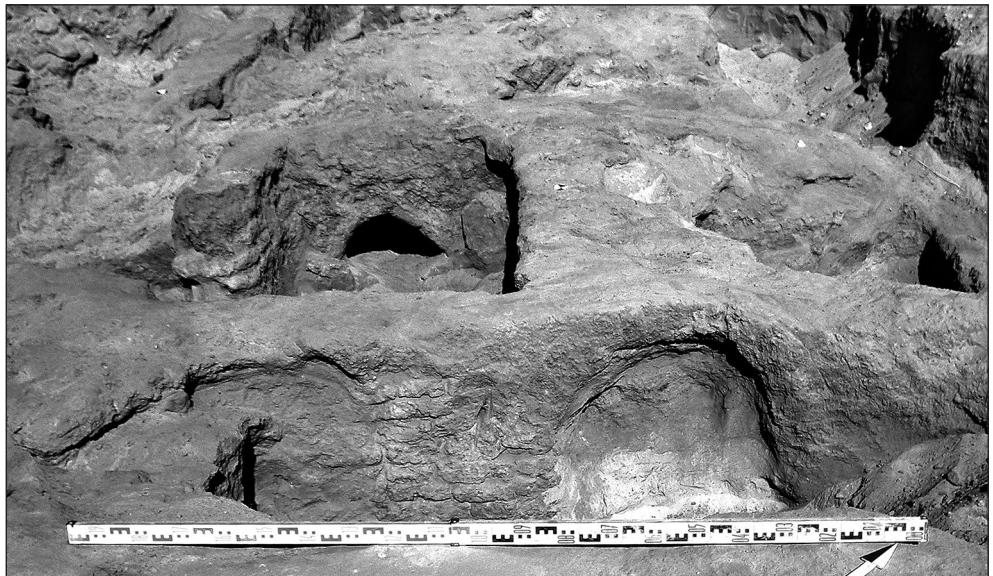


Fig. 6. Examples of arched door openings in trench I (2015), areas 13 (foreground) and 1 (background) (Photo M. Dzik)

in the NECH sector [Figs 5, 6]. The form of arches over openings varies considerably, from semicircular to segmental and even pointed. Arches were made of mud bricks, complemented sometimes with larger sherds or red bricks. Within trench I, baked bricks were found only in arches above the entrances from the street, as in areas 1 and 18, or from the inner yard (area 7 in an earlier phase). It seems that red bricks were used mainly for decorative purposes. Nevertheless, an apotropaic function cannot be excluded, being probable because of the red colour, the durability of the material and perhaps even a sacred provenance (the only building in Banganarti with red brick walls was the church).

Vaults, made of mud bricks exclusively, were unearthed in 14 areas. In comparison, unequivocal proof of flat roofing resting on wooden beams was found in just one room (area 20). The span and rise of the vaults varied. The inner width of rooms covered with arched ceilings ranged from 1.10 m (area 12) to 2.50 m (areas 5 and 7), and their maximum heights from 0.90 m (area 17) to 2.10 m (area 5). The skewbacks of vaults from the discussed trench were placed 0.30–0.70 m up from the first floor of the room (for the skewback of vault 9.C.5 on top of wall 9.C.4, see Fig. 7 top). It resulted in a significant reduction of space along the bearing walls, which is unarguably a disadvantage of vaults compared to flat roofs. The advantage, however, was surely the resistance to the vertical load of such construction. Using bricked vaults in dwellings is closely connected with issues of the external shape of their roofing and the presence of two-storey houses. One issue to be considered is whether vaults were used in Banganarti

as roofing only in cases of an upper storey being planned.

In six areas, the state of preservation of the archaeological substance was sufficiently good to determine the presence of an upper level constructed above the vaults. In each case, evidence of the usage of the upper space was found (e.g., hard mud floors, fireplaces). However, a mere layer of hard mud does not allow one to conclude unequivocally whether it was a roof covering (it could also be an occupational level inside a house) or the floor of another room. Evidence of the latter was documented in four areas: 2, 4, 9 and 9c. The first two were rooms of the first floor in a two-storey building (so-called House A). The latter two were vaults functioning as ceilings in basements. House A will not be discussed here and as for area 9, a vaulted basement (approximately 7 m²) and the room above it (9.40 m²) were built in one go. The walls were based in shallow foundation pits approximately 0.15 m deep. These pits were dug in the older cultural layers from the top of layer 62 [Fig. 7 bottom]. The floor of the upper room was made of mud bricks [see Fig. 7 bottom, context 9.C.2]. It lay directly on the crown of the vault and the backfill of the haunch areas of the arch, which was composed of fairly compact brown soil with numerous lumps of mud brick and Nile silt, potsherds and fragments of animal bones. The height of the upper room is unknown, the walls being preserved here to a height of no more than a meter. No evidence of the vaulted ceiling over this room was observed. Instead, directly by its north wall, there was a fragment of hewn wooden beam (22 cm by 27 cm, preserved length 40 cm). Its size and archaeological context suggest

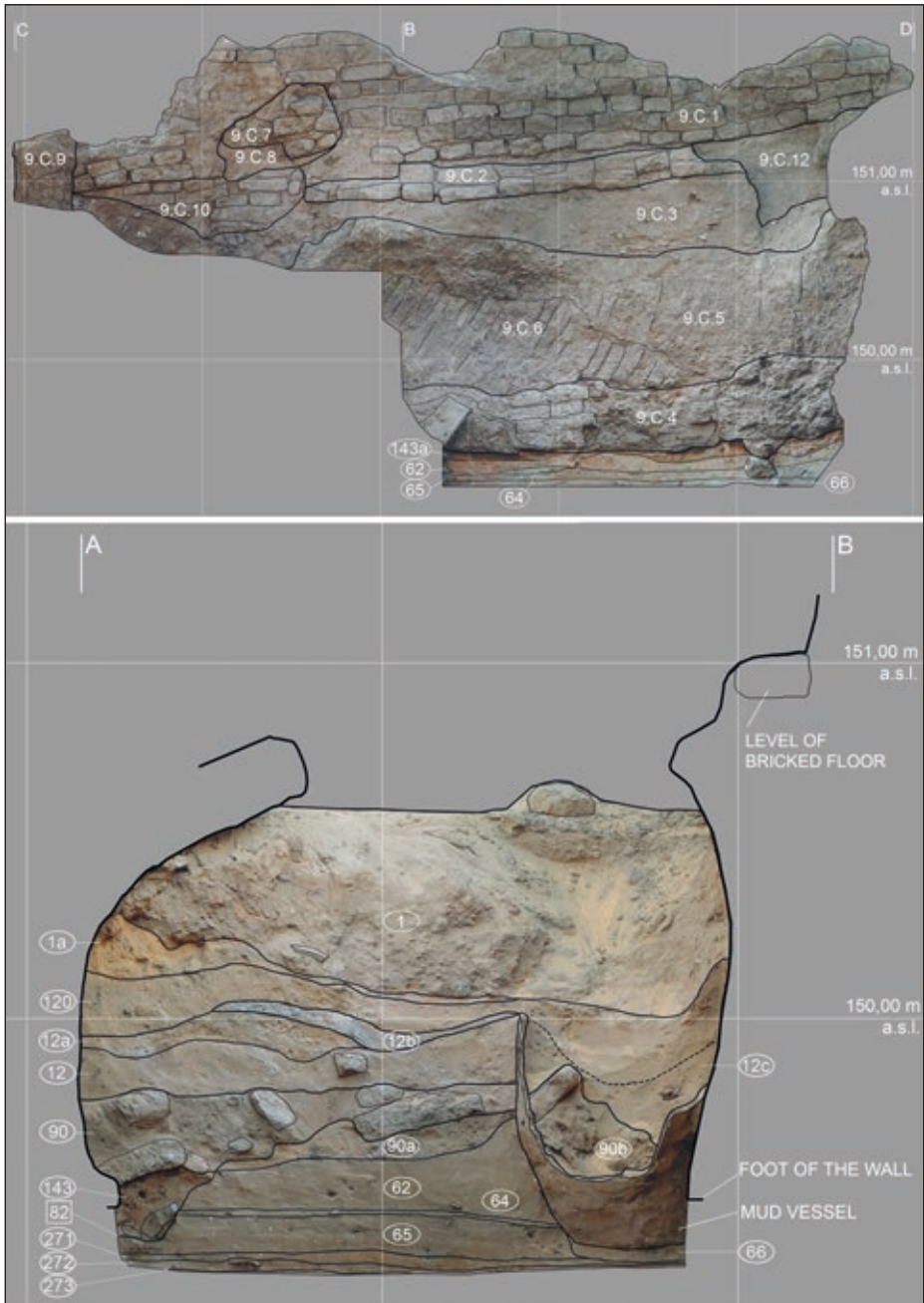


Fig. 7. Photogrammetric documentation in areas 9 and 9b: top, west wall; bottom, east-west profile cut (Processing M. Dzik)

that it may have been part of the wooden ceiling frame.

The poor state of preservation of the floor of this upper room and disturbance of the accumulated cultural layers make a determination of its function difficult. The bricked floor, which is quite rare on the site, suggests residential rather than utilitarian use. More can be said about the basement of this building.

The northern part of this unit reached a maximum height of 1.00–1.20 m above ground level. There was no hardened mud floor. The lowermost archaeological contexts, Nos 90, 90a, which included a great deal of mud-brick debris, assuredly accumulated during the construction of the building. It is worth noting that the west wall was raised on a large, storage mud vessel related to an older context (No. 65) [see *Fig. 7* bottom]. The fact that it was just cut and not destroyed completely suggests that its further usage had been planned.

The first evidence of basement exploitation is layer 12 (0.10–0.15 m thick), in which the following were found: over a hundred potsherds, mostly of cooking and storage wares, a clay spindle whorl, part of a stone quern and a pestle. The physical properties of this layer (slightly compressed, light brown, mixed with yellow sand) is not suggestive of intensive exploitation. The storage mud vessel may have been in use in this phase (it was preserved right to the top of the said layer).

At a time when the maximum height of the basement was 0.90 m or less, its previous (storage?) function had ceased. A common feature of the younger contexts (12a, 12b, 120) is a noticeably larger content of yellow sand (compared to layer No. 12), as well as a great deal of goat coprolites. It seems that at this time the space was used mostly as an animal pen. At the end of its use, the maximum height of the basement was less than 0.70 m.

STRATIFICATION

The upper part of the backfill of the described basement, namely contexts 1 and 1a, consisted of aeolian sand with debris from the collapsed parts of a vault and with mixed archaeological material [see *Fig. 7* bottom]. Similar fill was found in nearly all the areas destroyed by modern digging. These post-settlement layers include more or less numerous potsherds and animal bones, sometimes droppings of domestic animals (mainly goat, less often donkey). They are evidence that the rooms, once abandoned, were used as animal pens and rubbish dumps. The latter is suggested also by the extensive fragmentation of the ceramic material typical of such deposits.

The vast majority of the documented contexts can be interpreted as evidence of intensive exploitation of space linked with household functioning. One of the rare exceptions are some contexts from area 5, approximately 1 m accumulated thickness, representing layers of earth strongly suffused with ash and densely compacted; these were connected with the long usage of several ovens (see below).

In all the areas, cultural layers were found under the topmost aeolian sand, all exhibiting attributes of: colour, thickness, degree of humification and compression, frequent content of charcoal and ash, as well as coprolites and other biofacts

and artifacts, the material evidencing differentiated but usually long and intensive usage. This remark applies to streets (areas 13 and 22) as well as rooms.

In some of the areas (e.g., 1, 4, 5, 16), there was evidence of two and three hard mud floors, laid during the functioning of a given room. These actions were separated by longer episodes of occupation as witnessed by accumulative cultural layers between them.

The stratigraphic relation between earthen layers and some small or large building investments (like walling up an opening or making a new one, building a vault etc.), documented in several areas, allows the chronology of formal and functional changes of individual rooms and dwellings to be established based on the archaeological material. Determining the ground level at any given time of a given structure and the alterations it underwent can be difficult despite appearances. The two areas described above, 9 and 13, are a case in point.

Attention should be focused also on contexts related to the oldest buildings discovered in area 5 (founded on a layer of yellow-greyish, quite compressed sand, approximately 0.60 m thick). The architectural remnants, including a bearing wall rising 0.80 m and a partition wall (height 1.10 m) are strongly leached in their lower parts. At the same elevation, 147.65–147.95 m a.s.l., cultural accumulative layers, 164a and 164b, were revealed, separated by a brown, sandy layer of 1–3 cm thickness). They differed distinctly from almost all the layers above. These were grey-brown, compacted, suffused with grey loam fraction. Their cumulative thickness was approximately 0.25–0.30 m. Similar features were displayed by only one other

context, 157, documented just 0.10 m above the described one. The properties of these layers, as well as the erosion of the walls, are strong premises for the hypothesis of intensive water effect. It could be the result of very heavy rainfalls or, more likely, seasonal Nile flooding. It should be stressed that layers with such physical properties, as well as evidence of strong water erosion of the walls, were found in trench I only on the said level, which is just 1.00–1.50 m above the ground level in the old Nile river-bed (Żurawski 2010: Fig. 1).

Regarding the 52 features distinguished during the excavation, the most numerous (16 features) were pits for ceramic kitchen pots. Some of these vessels, often covered with a large potsherd, were probably used for storage. Others may have served in censuring treatment, known today as *dukhan* (the only evidence of use in a few pots was a thin layer of charcoal on the bottom and ash on the inner surfaces).

Other distinguished features included partitions made of mud brick, stock pits, dump pits, postholes and also fireplaces and ovens. Amid the latter, three ovens were made in walled up areas made just for them, 1.50–2.00 m long, 0.60–0.80 m wide, 0.94–1.60 m² in area (Nos 18a, 18b, 20a; see Fig. 2 bottom). The ovens were domed with mud bricks and finished with hard mud. The height of the chambers was 0.40–0.50 m. These were probably cooking ovens. Layers of ash and charcoal were found at their bottom, along with a few dozen potsherds apiece, mostly cooking wares, also a few fragments of animal bones, including a burnt one (area 18a), and single pestles (areas 18a, 18b). Another oven of different construction, rather poorly preserved, stood on the same level in the east corner of area 18.

The presence of so many utilities of one kind in a very small area is unusual. Similar assemblages of ovens were documented in area 5, approximately 4–5 m away, but at an elevation of 2.50 m to 3.50 m below

the described features. The apparent interpretation is long-lasting human occupation somehow associated with food processing. This needs to be confirmed in further research.

CONCLUSIONS

The excavations in the NECH sector brought extensive archaeological data for a discussion of dwellings and households in Banganarti between the 7th and 13th centuries pending a full recognition of the stratigraphy with regard to the architecture, which is in progress. Complementary specialist studies on the material are

needed, including geomorphological, archaeozoological, archaeobotanical and others. Chronological determinations will be enhanced with a planned series of radiocarbon and thermoluminescence datings. The outcome will be a new assessment of the cultural changes occurring in the Banganarti settlement over time.

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