

Szymon Maślak

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HERMITAGE 85 IN NAQLUN: MATERIALS AND CONSTRUCTION

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Hermitage 85 discovered during the 2006 season of excavations at Naqlun in Fayum Oasis has provided insight into the construction materials and techniques used in this kind of architecture in what appears to have been the earliest phase of the semi-anchorite community existing on the site. Certain issues, like light inside the hermitage and consequently the presence and position of windows, had to be

omitted in view of the state of preservation of the remains. The better preserved part of the complex on the east reached 1.00 m above the foundation level in Room 6 and c. 1.60 m above the floor in the oratory (Room 1); the walls on the western side have not been preserved to the same height (for a plan of the hermitage and some general views of the ruins, see above, *Figs 6-9* on pp. 200-201).

WALL CONSTRUCTION TECHNIQUES AND MATERIAL

The walls of the hermitage can be classified depending on the material used and structural importance. Some of the outer walls of room (facing the courtyards) were built of brick, as were also certain partition walls. The remaining walls were rock-cut, bricks being used only as a facing. The same is true of stone masonry walls: next to walls constructed of stone blocks there are also rock-cut walls faced with stone. Finally, there are mixed, brick and stone walls and facings, e.g. the wall in Room 2, sections of which were built in stone, while others were constructed of brick.

Most of the brick walls were preserved only in the lowermost parts. They were 23-29 cm thick, which corresponds to one brick length. The foundation layer is usually laid headers-on-edge, seldom headers or stretchers. The wall bond proper consists exclusively of alternating courses

of stretchers and headers. Thinner walls, that is, corresponding to the width of a brick (16-17 cm), laid as stretcher courses, were much less frequent.

Brick facing filled no structural role. Bricks were set directly against the rock-cut surface, preventing it from crumbling (the rock formation here is susceptible to erosion), while forming a smooth ground for the plastering. Most facings had the thickness of one brick width and they were laid as stretchers, in the foundation courses and the wall proper. Thicker facings, corresponding to one brick length with headers in the foundation course, were seldom encountered, as were thinner ones (9-10 cm), made of pieces of brick and stretchers-on-edge (possibly also small stones?).

Walls constructed of stone occur only in the outer rooms, especially those of

a domestic kind, like the kitchen in unit 10. Technically, they are poorly made of stone debris, the thickness varying from about 40 to 65 cm. The stone wall facings also varied in thickness, from about 20 to 55 cm. Since the stone walls and facings have not been preserved to any great height, it is not clear whether they were made entirely of stone. Indeed, there are indications in places that bricks were used for the upper parts.

The ground was relatively hard throughout the hermitage – geologically referred to as 'packed brown sand'¹ – and it is on it, either directly on the floor level or minimally below it, that the walls and facings were raised. The only walls to be given a kind of footing were the ones in the kitchen (no. 10) and in the oratory (no. 1). This rock-cut foundation was left sticking above the floor a dozen plus centimeters.

The sun-dried bricks used in the walls and facings of the hermitage were of a pale gray-to-beige color (with a yellowish and more seldom cream cast), produced from clay of desert origin. The matrix had a lot of chaff mixed in. In a few cases, finely crushed potsherds were also noted. Two brick sizes have been distinguished. The bigger bricks (25-27 x 12-14 x 7-8.5 cm) were used for the lower parts of walls and facings (fragmentarily preserved), while the smaller ones (20.5-23 x 10-12 x 6.5-8.5 cm) were found mostly in the debris and fill inside the chambers, indicating their original position in the upper parts of walls and facings.

The gray and dark gray mud bricks (25.5-26 x 12-12.5 x 6.5-8 cm) with sizable chaff content were found solely in

the fill of the chambers and in some of the smaller features, like thresholds etc., but never in existing parts of walls.

The third kind of brick, a grayish variety made of clay of desert origin (24 x 11.5-12 x 7-7.5 cm) with some chaff and crushed pottery, was also found mostly in the fill.

Baked brick is sporadic, most of the recorded examples (measuring 22 x 10.5 x 5 cm, 22.5 x 11 x 7.5 cm, 23-24 x 11-12 x 7-8 cm) being single bricks found in the fill inside the units. The only exception is the apse and southern pastophory in Room 6, where a sizable number of these bricks (including the size 23 x 10.5 x 8 cm), as well as brick fragments, was discovered in the layers on the floor. These bricks bore traces of fine gray plaster of clay of desert origin and very little plant temper. It is highly probable that this material is the only surviving evidence of a dismantled altar *mensa*.

The stone used in the hermitage was a local white- and cream-colored conglomerate. It took on the form of small and medium-sized, carelessly dressed chunks.

The principal mortar used in the hermitage was a pale gray-beige (yellowish) mortar of raw material of desert origin containing limited quantities of chaff. Stone and brick were both bonded with it. Horizontal joints in brickwork used to be 7-12 mm thick. The only case of the use of a different mortar (gray mud with chaff) were the baked bricks from the fill in the apse and southern pastophory in Room 6.

The different kinds of plaster from the hermitage testify to the attention given the internal decoration of the complex. The

1 This is a fairly hard, but easily eroded formation, overlying the much harder, typical Naqlun gebel rock of yellow color, which comes to the surface in a few of the chambers.



*Fig. 1. Prayer niche in the oratory of Hermitage 85
(Photo W. Godlewski)*



*Fig. 2. Remains of a mud floor and mud plaster on the walls of Room 5, view looking north
(Photo W. Godlewski)*



Fig. 3. Pit for storage jar and step down faced with brick in the southern pastophory (Room 6) (Photo W. Godlewski)

walls of the oratory were covered first with a thin coating (2-3 mm thick) of pale gray-beige plaster with chaff and then with an even thinner layer (1 mm or less) of almost cream plaster, produced from raw material of desert origin with chaff as well. The engaged columns and *mensa* in the niche between them had a coating of lime plaster (up to 2 mm thick) painted with a red ornament, laid on an underground of pale gray-beige and partly dark gray mud plaster.

The plaster on the walls of Room 6 was mainly the pale gray-beige variety with chaff and sand as temper. The interior of the apse initially had a finely smoothed cream-colored plaster with moderate chaff as temper. At one point, engaged columns with profiled offsets were added to the front of the apse from the nave. The columns were made of a hard lime-sand mortar in a pale-gray-beige color. Traces of red paint have



Fig. 4. The installations in Room 3, view looking north (Photo W. Godlewski)

been preserved in nooks on the engaged columns. At this time, the lower parts of the wall inside the apse, the bases of the engaged columns, the floor in the threshold of the apse and around the altar *mensa*, and some sections of the nave walls were coated with another cream-colored wash, produced from a fine clay with large quantities of chaff. Then there was the beige plaster which presumably covered the altar *mensa* described above, in the section concerning the kinds of brick used in Room 6.

In other units, more of a domestic or living character, the walls were plastered in a different way. Preserved fragments show that at least the lower parts were covered with a thin coating (2-6 mm) of dark gray mud plaster containing fine chaff, smoothly passing into a floor made of the same plaster. Plasters of this kind are laid usually on a relatively thick underground (up to 2 cm) of grayish or pale-gray-beige plaster, both produced from raw material of desert origin.

ROOFS

Despite a lack of evidence (the state of preservation of the hermitage and the finds from the fill provide no simple answers), it can be assumed that at least some of the outer units, like the kitchen, may have had

roofs of wooden beams covered with rushes or jarids. As for the remaining chambers, a common-sense solution is a natural vault cut in the rock (W. Godlewski, pers. comm.).

FLOORS

Technically the finest floor in the whole hermitage was found in the oratory. It was a pale gray-whitish lime floor, relatively thin (5-6 mm) and very brittle, laid directly upon bedrock. The other chambers had floors made of dark gray mud containing huge quantities of finely chopped chaff. They were usually composed of one to a few thin layers of mud (each 3-7 mm), forming a bed even 4.5 cm thick. The top was normally well smoothed and passed evenly into the wall plastering. Mud floors were laid on a bedding of sand, the latter occasionally containing rubbish and eroded rock debris.

The exception with regard to floors was the apse in Room 6. It was about 8-9 cm above the floor in the nave, and consisted of a thin outer layer (3 mm) of dark gray mud with chaff, laid on a slightly thicker layer of fine pale gray-beige clay with chaff, which was the ground covering a substructure of bricks laid flat in a bedding of sand on the original floor of the apse.

In the kitchen, the original surface was presumably the rock-cut floor. Later, it was covered with a mud floor containing large quantities of chaff, partly surviving in the corners of the unit.

DOORS

None of the doorways in the hermitage were well-preserved. In fact, in some of the rooms their position could be identified only theoretically based on certain set assumptions.

Thresholds fall into two categories: thresholds of bricks and thresholds using wood in their construction. In the former case, bricks could be laid header-on-edge, the outer corners rounded (e.g. threshold

between Rooms 11 and 7). In the narrower doorways, which most probably were fitted with doors to be closed, wooden thresholds were the rule. The entrance from Room 11 to Room 10, measuring 48 cm in width, had a palm-wood beam (28 cm wide at the

base) with the ends set into the jambs on either side, plastered with gray mud mortar containing chaff. In turn, the passage from the kitchen (no. 10) into the oratory (no. 1), 55 cm wide, had a flat wooden beam, 60 cm long and 2.5 cm thick, in the threshold.