



Building unit N27 (Pl. 27) is composed of two parts and three spaces. The main part and larger rectangular space N27/1 (*c.* 3.45 × 4.70m) is a courtyard. The second part is composed of two small rooms, N27/2 and N27/3, which run the full length of the southern edge of the courtyard. Divided by Wall 34E, the two side rooms are of comparable size (*c.* 1.40 × 2.30m), and represent the southwestern and southeastern corners of the building unit. Three boundary walls encompass the southern side rooms: 31E to the west, 34S to the south and 36E to the east. Wall 34N is the northern boundary of room N27/2, while the northern face of room N27/3 is formed by Wall 36N.

The ground plan of building unit N27 corresponds to Type I of Bietak's Group B.<sup>295</sup> Covering a total area of 30.22m, the western side of N27 stretches to 5.70m, both its northern and southern sides are around 5.40m long, and its eastern side is 5.50m. Like the neighbouring building units, N27 is also oriented towards the northern Enclosure Wall N4.

## F.2 Description of N27's perimeter walls (Fig. 47)

### F.2.1 Wall 34S

East–west oriented, the intact basal course of the southern perimeter wall 34S is 4.53m long and outlines the rear wall of both Rooms N27/2 and N27/3. This wall is half-a-brick thick and is made of running staggered stretchers of various dimensions; the largest bricks featured in the masonry courses are 38 × 16 × 7/8cm in size. Wall 34S is preserved up to a height ranging from three to seven brick courses, with a maximum preserved height of 1.02m above the gravelled soil surface within the side rooms.<sup>296</sup> A peculiar feature of Wall 34S is a large stone piece<sup>297</sup> set against the basal course. In Room N27/3, to the east of Installation N27A, this stone protrudes 0.30m outward into the space, and may have once accommodated a quern implement.

At its west end, Wall 34S terminates without bonding to the adjacent L-shaped Wall 48W.<sup>298</sup>

The latter wall outlines the west side of Room N13 (see Fig. 3), which abuts the outer/southern face of Wall 34S. With no evidence of a brick connection between the western end of Wall 34S and the perpendicular Wall 31E, it is possible that there was an entranceway to Room N27/2 at the southwestern corner of building unit N27.

The north–south oriented Wall 34E runs 2.65m perpendicularly from Wall 34S's western end and divides Rooms N27/2 and N27/3 into two distinct spaces. Because a facing plaster conceals the faces of Walls 34S and 34E, potential bonding between these two walls is not visible internally. However, from the denuded outer face of Wall 34S it is possible to observe a coursing pattern featuring the short ends of header bricks, which may represent the bonded masonry from 34E.

On the eastern end of Wall 34S the brickwork is truncated over a distance of 0.35m, the length of one stretcher brick (Pl. 28), eliminating evidence of potential bonding with perpendicular Wall 36E. Because of the truncation in the brickwork, an underlying brick course is visible and though it may appear to be the footing course of Wall 34S, such is actually not the case. This course belongs to an anterior building phase that comprises Wall 54N bonded to Wall 54E, running east–west and north–south respectively. Built on the top of levelled Wall 54N,<sup>299</sup> Wall 34S runs east–west according to the alignment of the earlier brickwork.

The total length of the southern perimeter side of building unit N27 measures 5.37m on the outside and 4.88m from the inside, from the western end of Wall 34S to the southeastern corner of Room N27/3.

#### F.2.1.1 Facing plasters of Wall 34S

There is no surface addition on the outer/southern face of Wall 34S. However, within room N27/2, the inner/northern face of the wall is fully covered with a smooth greyish sandy-silt wash with rare medium-size pebbles. To the east, the segment of Wall 34S bordering Room N27/3 shows two layers of render (see Pls. 29 and 30). The first con-

<sup>295</sup> BIETAK 1996, 24, fig. 2.

<sup>296</sup> Wall 34S culminates at 161.53m (*i.e.* top of incomplete brick capping the seventh course). The top of the seventh course from the bottom is levelled at 160.48m.

<sup>297</sup> The top of the sandstone quern element is levelled at 160.71m. The stone is 0.25m in height and the triangular portion projecting out of Wall 34S is 0.45 × 0.30 × 0.50m in dimension.

<sup>298</sup> Wall 48W outlines the west side of Room N13. Though it abuts the outer/southern face of Wall 34S, N13 is not part of building unit N27.

<sup>299</sup> The top of Wall 54N is levelled at 160.46m. Walls 54N, 54E and 54S belong to the Level 4 phase (Fig. 48). Features of this phase were not completely exposed in this quadrant of Square 180/2260.

ceals only the corner area of the wall face and is similar to the facing plaster covering the western section of the wall. An additional render made of a thicker greyish sandy-silt plaster lies partly atop the first render, veiling the four upper courses of Wall 34S.<sup>300</sup>

#### F.2.1.2 Pilaster of Wall 34S

There is no evidence of any pilaster associated with Wall 34S.

#### F.2.2 Walls 35W and 36E

The eastern side of building unit N27 is composed of two north–south oriented wall segments that are one brick thick: 35W and 36E. To the north, wall segment 35W runs perpendicular to northern perimeter wall 33N, to which it bonds. This wall segment is 1.15m long and made of bricks  $35 \times 17 \times 8$ cm in size. From the three intact brick courses, it is possible to observe a construction bond pattern which uses layers of mud brick stretchers, header bricks and occasional bull headers.<sup>301</sup> At intervals, flat sandstone elements (with an average diameter of 0.30m) are part of the layers of mud bricks. The footing course of Wall 35W overlays a 13cm thick layer of deposit that separates the footing bricks from a mud-plaster surface, N27F11E,<sup>302</sup> identified along the outer side of the northeastern perimeter wall.

Similarly aligned with Wall 35W, Wall 36E runs along the eastern edge of Room N27/3 and is preserved up 1.30m in length. Both ends of Wall 36E are missing, making it impossible to substantiate any observations about the bonding pattern between this eastern Wall 36E and its two related adjacent walls, 34S and 36N. Wall 36E is composed mostly of stretcher bricks  $37 \times 18 \times 10$ cm in size and its brickwork features two adjoining sections of different thicknesses. The northern section is 0.80m long and half-a-brick thick, while the southern section of the wall is 0.50m long and double skinned, *i.e.* one brick thick.<sup>303</sup> With a maximum height of three courses, 36E has a high point of 160.74m. Though the alignment shifts slightly to the west, 36E follows a similar

orientation to an underlying earlier wall, 54E. The level of Wall 36E's basal bricks thus coincides with the top of Wall 54E, ranging from 160.46m to 160.35m.

Between the two segments, no brickwork joins the southern end of Wall 35W to the northern end of Wall 36E, with a gap of 2.75m. Lying to the east of N27, this large opening might have been designed as an entranceway to the building unit's courtyard. As this opening would have been quite large, it is possible that the later addition of Wall 38E may have been constructed to reduce the size of the passage to 0.54m wide (IIF.4).

Combining wall segments 33N and 35W with the gap, the total outer length of N27's eastern side measures 5.50m. From the interior corner of Walls 33N and 35W to the east side room N27/3's south-eastern corner, the distance is 4.96m long.

#### F.2.2.1 Facing plasters of the eastern perimeter walls

The eastern faces of Walls 35W and 36E bear no surface addition. In contrast to their denuded outer faces, the inner/western faces of the walls show some remaining patches of facing plaster, with evidence of a render on the inside of Wall 35W's lower area and Wall 36E's upper area. The latter also features some traces of whitewash, which makes the wall surface appear pale in colour. Furthermore, black burn marks on this same wall are evidence of possible fire activities within the southeastern side room, N27/3.

#### F.2.2.2 Pilaster of the eastern perimeter walls

There is no evidence of any pilaster associated with the faces of Walls 35W and 36E.

#### F.2.3 Wall 33N

At the north of building unit N27, Wall 33N runs east–west. This wall is preserved to its full extent, 5.42m long (14 stretchers of  $33 \times 16 \times 8$ cm) and one brick thick. The thickness of this wall is the result of a building technique using a double skin wall consisting mostly of layers of stretcher bricks

<sup>300</sup> This additional plaster extends down Wall 34S from 161.24m to 160.85m.

<sup>301</sup> The top of Wall 35W's third course from the bottom is levelled at 160.65m and base of the wall at 160.35m. When the wall was first exposed in 2010, the fourth course was partially preserved, culminating at 160.75m.

<sup>302</sup> The top level of this surface ranges from 160.22–160.18m (IIF.6.1.2).

<sup>303</sup> The header brick of the top course lies perpendicular to the stretcher bricks underneath.

occasionally bonded to a course of header bricks. At some places in the basal course, brick headers are laid diagonally on edge. The three basal courses of 33N are fairly intact all along the wall,<sup>304</sup> and two parts of Wall 33N are preserved up to a height of six courses – there, 33N culminates at 161.22m and rises 0.67m above the coated floor of the courtyard.<sup>305</sup>

Despite the poor condition of the brickwork at the northwestern corner of building unit N27, it is still possible to conclude that the western end of Wall 33N was bonded to the western perimeter wall 33W, which runs perpendicular to it. In addition to evidence of bonding between 33N and 35W, excavation of the northeastern corner area of building unit N27 yielded additional information about the foundation of Wall 33N. From the outer/northern face of Wall 33N's eastern end, it is possible to observe that the one brick thick footing course runs atop half-a-brick thick Wall 51S.<sup>306</sup> This underlying wall belongs to an earlier phase of building, identified as Level 4 (Fig. 48).<sup>307</sup> The eastern end of Wall 51S is bonded to north–south oriented Wall 51E, which also bonds with Wall 51N at its northern end. Together, these three walls belonging to Level 4 encompass storage Installation N23. It is worth noting that during the Level 3 building phase, the construction of the northern perimeter wall of building unit N27 was aligned with the east–west oriented wall running underneath.

The masonry of Wall 33N features the use of two unusual building techniques. The first is the inclusion of a 0.60m long palm tree log, which was inserted longitudinally between the third and fourth course above Floor N27F12N along the inner/southern face of the wall,<sup>308</sup> probably to prevent the wall from cracking.<sup>309</sup> Near the northeastern corner of N27 another type of wooden structural device was identified. Here, bricks are arranged to

shape a kind of support case,<sup>310</sup> enclosing a vertical palm tree log of which only the bark remains. This vertical timber was probably used to strengthen the corner area<sup>311</sup> between the mud brick Walls 33N and 35W.

#### F.2.3.1 Facing plasters of Wall 33N

Very small patches of wall coating have survived on each face of Wall 33N.

#### F.2.3.2 Pilaster of Wall 33N

There is no evidence of any pilaster associated with Wall 33N. Due to the thickness of the double skin wall, a strengthening feature of this nature may have been considered unnecessary.

#### F.2.4 Walls 33W and 31E

The western perimeter of N27 is made of two distinct walls that both run north–south, but are not structurally bonded. Both Wall 33W to the north and 31E to the south are half-a-brick thick and made of running staggered stretcher bricks. Their bricks are of the medium format, with slight variation: Wall 33W is made of bricks 35 × 17 × 10cm in size and Wall 31E is made of bricks 36 × 18 × 9cm in size. The northern end of Wall 33W is bonded to the northern perimeter wall, 33N (IIF.2.3). At 3.53m long, Wall 33W is the longer of the two western segments and has a basal course of *c.* nine stretchers, but is not preserved more than a maximum of three courses in height.

To the south, beyond a short truncation in the masonry of Wall 33W,<sup>312</sup> Wall 31E is five brick courses high and no more than three stretchers long (1.05m). Because of the truncation, there is no visible trace of bonding between Walls 31E and 33W. There was probably no access point to Room N27/2 from the courtyard N27/1 because Wall 34N abuts against Wall 31E. However, between the southern

<sup>304</sup> The top of the third course from the bottom is levelled at 160.84m.

<sup>305</sup> Patches of the coated floor N27F12bR1 are levelled at 160.55m (IIF.6.2.1). From the truncation through the western end of Wall 33N, the baseline of its footing course is levelled at 160.40m.

<sup>306</sup> The base of Wall 33N (the top of Wall 51S) is levelled at 160.46m.

<sup>307</sup> BUDKA and DOYEN 2013, 172–174, fig. 3.

<sup>308</sup> The top of the timber log is levelled at 160.82m. For the use of wood in brickwork, see KEMP 2000, 88–90, fig. 3.4c; SPENCER 1979, 131–132.

<sup>309</sup> A wooden log employed as tie beam, stringer beam or bonding timber would have been “used in the same manner as layers of reed-matting” SPENCER 1979, 132.

<sup>310</sup> The “casing” culminates at 161.04m and encloses a vertical log *c.* 0.60m high. At the foot of the vertical log, the gravelled soil is levelled at 160.26m.

<sup>311</sup> KEMP 2000, 91.

<sup>312</sup> The gap is 0.45m long, the length of one missing footing brick.

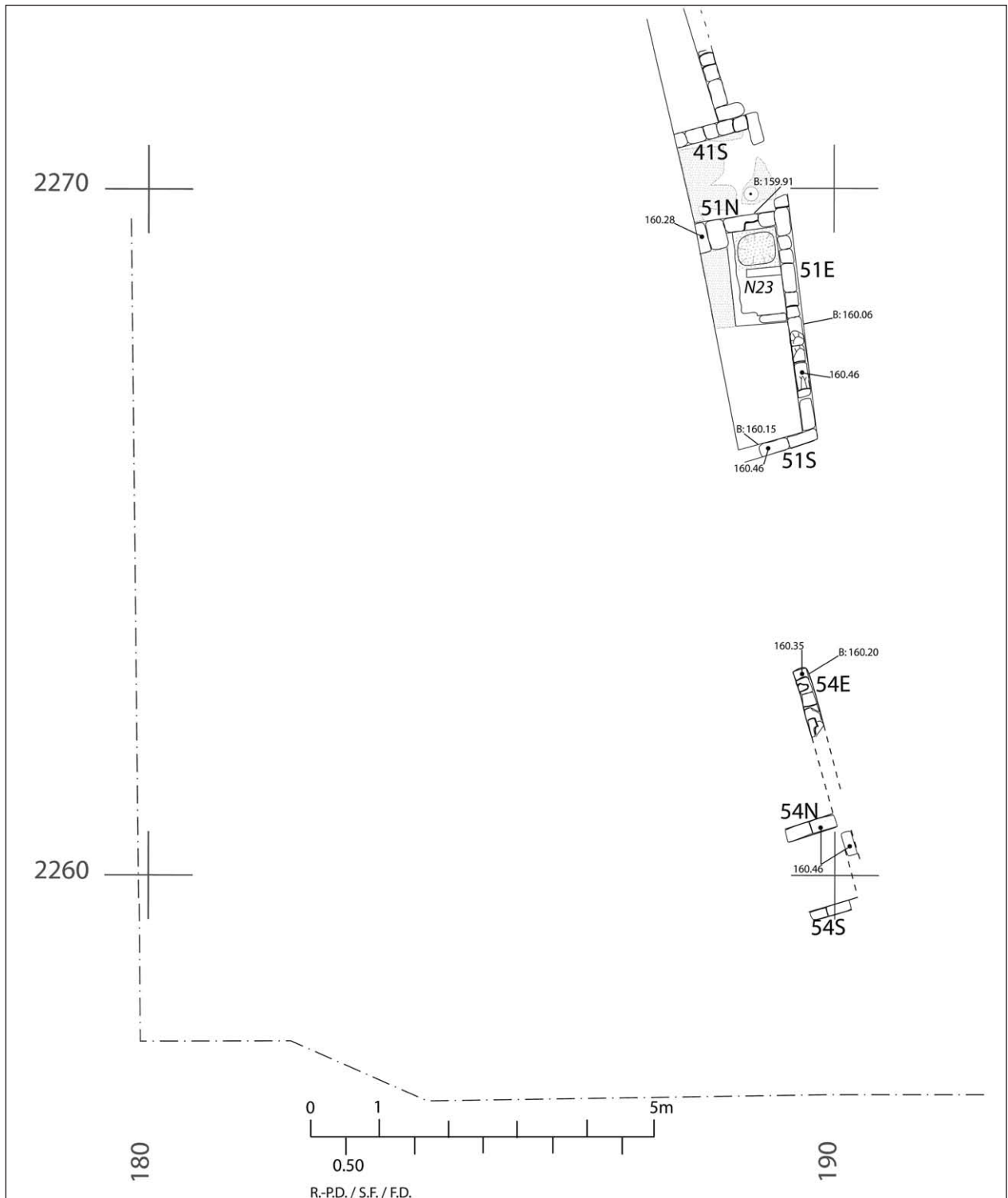


Fig. 48 Square 180/2260, plan of structures assigned to Level 4, including wall levels

end of Wall 31E and perimeter wall 34S is a space 0.65m long and the lack of brickwork between the two perpendicular walls might have corresponded to the entranceway to side room N27/2.

The total outer length of the western perimeter side of building unit N27, composed of both Walls 33W and 31E, measures 5.70m long. The total inner length, from the northwestern inner corner of



the main court N27/1 to the southwestern corner of Room N27/2, is 5.35m long.

#### F.2.4.1 Facing plasters of the western perimeter walls

A few patches of wall coating remain on the western/outer face of Wall 33W. However, there is no plaster addition on either face of Wall 31E.

#### F.2.4.2 Pilaster of the western perimeter walls

There is no evidence of any pilaster projecting from the faces of Walls 33W and 31E.

### F.3 Description of N27's internal walls

(Fig. 47)

#### F.3.1 Wall 38E

The north–south oriented Wall 38E is located immediately west of the eastern boundary of building unit N27. The substantially broad wall features four wythes and is 0.60m thick. Divided by a gap 0.50m long, the wall is therefore composed of northern and southern segments of brickwork, respectively 1.35m and 0.40m long. The northern wall segment of 38E is preserved up to a height of five courses and culminates at 160.82m, while its base is levelled at 160.33m. In comparison, the southern segment is slightly taller, with six intact courses whose top is levelled at 160.96m and base at 160.40m. Bricks of Wall 38E are  $36 \times 18 \times 9$ cm in size and the coursing pattern with header bricks crossing stretcher wythes is clearly evident (Pl. 29).

Both portions of Wall 38E lie above a layer of gravelled soil.<sup>313</sup> At either end of the wall, the brickwork abuts the adjacent walls: the southern segment abuts the north face of Wall 36N, while the outer lower courses of the north wall portion abuts the southern end of eastern boundary Wall 35W.

##### F.3.1.1 Facing plaster of Wall 38E

As far as one can examine the outer/eastern face of Wall 38E in its poor condition, there is no evidence of any surface addition. On the other hand, both western/inner faces of the wall segments bear a

facing plaster. The 2–3cm thick plaster of the southern wall segment also covers the area of the corner joining this wall to adjacent Wall 36N. On northern portion of 38E, the bonding material separating the second and third courses from the top is pointed and extruded.<sup>314</sup>

##### F.3.1.2 Pilaster of Wall 38E

As in the case of Wall 33N, there is no evidence of any pilaster associated with Wall 38E.

#### F.3.2 Wall 39W

Wall 39W runs north–south, parallel to and 0.60m west of eastern Wall 38E. This wall is 1.50m long, half-a-brick thick, and made of stretcher bricks that are  $36 \times 18 \times 9$ cm. Built in the eastern half of the courtyard, 39W lies 0.80m south of perimeter wall 33N, *c.* 3.40m from the inner face of perimeter wall 33W and 1.20m north of the outer face of internal/dividing wall 36N.

Wall 39E is preserved to a height ranging from two to three brick courses.<sup>315</sup> An occupational deposit, (N27De2d), hides the footing course of Wall 39W, which itself overlies the gravelled soil. This deposit layer is in turn concealed below a mud-coated surface.<sup>316</sup>

##### F.3.2.1 Facing plaster of Wall 39W

While there is no evidence of any surface addition on the western face of Wall 39W, there is occasional extruded bonding material between the brick joints. On the eastern side of this wall, however, a 2–3cm thick facing plaster covers almost the entire wall face. This plaster consists of a smooth greyish sandy-silt wash with rare medium-size pebbles and runs down to the floor's coated surface, with which it merges.<sup>317</sup>

##### F.3.2.2 Pilaster of Wall 39W: N27Pil1

A stretcher brick ( $36 \times 18 \times 9$ cm) runs along and abuts the western side of 39W's basal course, the top of which is levelled at 160.64m. Situated 0.30m and 0.80m from the northern and southern ends respectively, this brick may be identified as the re-

<sup>313</sup> The top of the gravelled soil layer underlying Wall 38E varies from 160.40m (below the southern wall segment of 38E) to 160.30m (below the northern wall segment of 38E).

<sup>314</sup> The top level of the extruded bonding material varies from 160.70–160.67m.

<sup>315</sup> The top of Wall 39W is levelled at 160.71m and the baseline of the second course from the top at 160.48m.

<sup>316</sup> Between Walls 39W and 38E, the top of the mud-coated surface [N27F12cR1](#) is levelled at 160.44m (IIF.6.2.1).

<sup>317</sup> The point of connection between the coated floor and the plastered basal course of Wall 39W is levelled at 160.49m.

maining basal stretcher of Pilaster N27Pil1. At the basal level of this buttressing feature, the stretchers from both Wall 39W and N27Pil1 run parallel north–south and are not structurally bonded. A lump of facing plaster still adheres to the corner between the short northern face of N27Pil1 and the western face of Wall 39W, attesting to a connection between the wall and its pilaster.

### F.3.3 Wall 34N

Outlining the northern side of Room N27/2, Wall 34N is half-a-brick thick (0.18m) and 2.40m in length. This wall follows an east–west orientation, running parallel to the southern perimeter wall 34S. In the construction of Wall 34N, layers of mud brick stretchers  $38 \times 16 \times 7\text{--}8\text{cm}$  in size were used in the traditional running bond pattern. The preserved height of Wall 34N ranges from one to four brick courses, with the maximum elevation levelled at 160.99m, *c.* 0.32m above a coated surface overlaying an occupational deposit.<sup>318</sup>

The eastern end of Wall 34N is clearly bonded to the northern end of the adjacent perpendicular wall, 34E. At the opposite end of the wall, only the footing course of the western end remains intact. At this point, the half-stretcher brick that forms the end of Wall 34N abuts the eastern face of adjacent perpendicular Wall 31E, confirming that Walls 34N and 31E are not bonded.

#### F.3.3.1 Facing plaster of Wall 34N

The outer/northern face of Wall 34N has no coating. In contrast, 34N's inner/southern face is covered in a smooth greyish sandy-silt wash with rare medium-size pebbles. This wall coating covers the entire face of the wall, connecting the base of the wall to the floor surface in the side room, N27/2 (IIF.6.2.2). In the northeastern corner of N27/2, however, this facing plaster does not merge with the surface addition of the adjacent perpendicular Wall 34E. These two walls are thus structurally bonded (IIF.3.3), but their respective plasters were not applied at the same stage.

#### F.3.3.2 Pilaster of Wall 34N

There is no evidence of any pilaster associated with Wall 34N.

### F.3.4 Wall 34E

North–south oriented Wall 34E divides the southern part of building unit N27 into two side rooms, delineating the eastern side of Room N27/2 and the western side of Room N27/3. Like 34S and 34N, the walls to which it is bonded, 34E is also half-a-brick thick. Wall 34E is preserved to a height ranging from four to seven brick courses and culminates at 161.48m.<sup>319</sup> Made of *c.* five running stretcher bricks that are  $38 \times 16 \times 7\text{--}8\text{cm}$ , Wall 34E is 1.81m in length.

Though Wall 34E is centred to Wall 34S, located 2.30m from either end, it is not perpendicular to the southern perimeter wall. Rather, Wall 34E veers slightly to the west, with the northern end of the wall culminating 2.50m from Wall 36E and 2.22m from Wall 31E. Within the southwestern inner corner of Room N27/3, storage bin N27A was constructed parallel to the eastern face of dividing wall 34E (IIF.5.3).

#### F.3.4.1 Facing plaster of Wall 34E

Both the eastern and western faces of Wall 34E have surface treatment composed of a smooth greyish sandy-silt wash with rare medium-size pebbles. At the southeastern corner of Room N27/2, the facing plaster continuously covers both faces of Walls 34E and 34S. Similarly, in the southwestern corner of Room N27/3, the surface addition on the opposing face of Wall 34S completely covers both corner walls.

#### F.3.4.2 Pilaster of Wall 34E

There is no evidence of any pilaster associated with Wall 34E.

### F.3.5 Wall 36N (Pl. 29)

East–west oriented Wall 36N forms the northern side of Room N27/3 and is half-a-brick thick, made of bricks  $38 \times 16 \times 7/8\text{cm}$  in size. Wall 36N is 1.97m long, about five running mud brick stretchers. The preserved height of this wall ranges from three to six brick courses above the pebble fill.<sup>320</sup> A lower brick course is only visible through the eastern truncation of Wall 36N and might be the footing course.<sup>321</sup>

<sup>318</sup> The top of this surface coating patch is levelled between 160.70–160.66m along the north face's basal courses and at 160.68m along the south face of Wall 34N.

<sup>319</sup> The base of Wall 34E is levelled at 160.58m.

<sup>320</sup> The top of Wall 36N culminates at 160.99m. The baseline of its lowest course varies from 160.62m (west end of the wall) to 160.47m (east end of the wall).

<sup>321</sup> At this point, the baseline of the footing course is levelled at 160.35m.

Due to its poor state of preservation, the east end of Wall 36N unfortunately provides no evidence of bonding to the adjacent perpendicular wall, 36E. Also at the east end of Wall 36N, the connection between the southern wall segment of Wall 38E and the northern face of this wall is preserved. Though these walls abut there is no structural tie between them, but only a plaster joint between the west face of 38E and the north face of 36N. To the west, the wall is in a better state, probably thanks to the reinforcing Pilaster N27Pil2.

#### F.3.5.1 Facing plaster of Wall 36N

The facing plaster is only partially intact on either side of Wall 36N. At the corner joining 36N's eastern end with the abutting southern wall segment 38E, the thick plaster is similar to that identified also on the western face of adjacent Wall 38E. On the northern face of 36N, this plaster extends from the second course to the fifth course from the top, *i.e.* up to 0.40m in height.

To the west of the corner with 38E, the northern face of Wall 36N has no surface addition over the brick courses. On the opposite face, surface addition is confined to the area of the basal courses of both Wall 36N and Pilaster N27Pil2 (see IIF.3.5.2 and IIF.6.2.3).

#### F.3.5.2 Pilaster of Wall 36N: N27Pil2 (Pl. 29)

The western end of Wall 36N is reinforced on the southern side with a pilaster, N27Pil2. This pilaster stands to the east side of the entranceway to Room N27/3, 0.55m west of the northwestern corner of neighbouring Room N27/2.

Perpendicular to Wall 36N, narrow Pilaster 2 is half-a-brick thick (16 × 35cm) and has a preserved height of three courses of bricks (27cm). The top course of N27Pil2 is levelled at 160.98m and consists of a squarish brick piece. The pilaster's second course from the top is bonded to Wall 36N, as can clearly be seen from the western side of the feature where the brick protrudes perpendicularly from the southern face of the wall. The final course is also a brick piece, running against the stretcher brick of the wall's corresponding course. Unusually, this lowest brick overlies the occupational deposit of Room N27/3, (N27De2f). Therefore, N27Pil2 did not ex-

tend down to the footing of Wall 36N itself, with the two lowest courses concealed by the deposit and currently hidden by a thick, lipped out plaster feature.<sup>322</sup>

#### F.4 Layout and dimensions of N27 building unit (Figs. 47 and 50)

The freestanding building unit N27 is a quadrilateral roughly square – with a slightly longer western side and three other nearly equal sides. The northern wall of N27 runs parallel to and 10.50m away from the northern Enclosure Wall N4. Its eastern side runs parallel to the nearby N12 building unit, across a lane 0.90m wide. Like its neighbours, the location of N27 indicates that its layout falls into the pattern of SAV1's settlement grid.

The external surface area<sup>323</sup> of N27 is 30.22m (5.37 × 5.50 × 5.42 × 5.70m) while the internal surface area is 24.55m (4.88 × 4.96 × 4.63 × 5.35m) (see Fig. 14).

Possibly accessed through its eastern side (IIF.2.2), the layout of building unit N27 consists of one large courtyard (N27/1) with two adjacent small side rooms located at the rear. The division of the building is as follows:

- The larger northern section N27/1 is an irregular quadrilateral that measures 4.15 × 3.33 × 4.63 × 3.60m, *c.* 15.42m in internal surface area. In the eastern part of this court, the internal wall 39W possibly subdivided this open air area.
- N27/2, the southwestern side room, measures 2.25 × 1.44m or 3.24m and is equipped with sandstone grinding device.
- N27/3, the southeastern side room, measures 2.40 × 1.40m or 3.36m and includes the storage bin Installation N27A and a possible sandstone quern implement.

Within the construction of the eleven walls of building unit N27, six different brick formats have been identified. At the eastern perimeter wall, the bricks of Wall 36E (37 × 18 × 10cm) fall into the large format category while the bricks of Wall 35W are 35 × 17 × 8cm in size, and thus belong to the medium format category. Only bricks from the northern perimeter wall 33N (33 × 16 × 8cm) are ascribed to the small format category, while the bricks of both western perimeter wall segments – 33W (35 × 17 × 10cm) and 31E (36 × 18 × 9cm)

<sup>322</sup> The top of the lipping out plaster feature is levelled at 160.67m and its base at 160.55m.

<sup>323</sup> The external surface area encompasses the thickness of the perimeter walls.



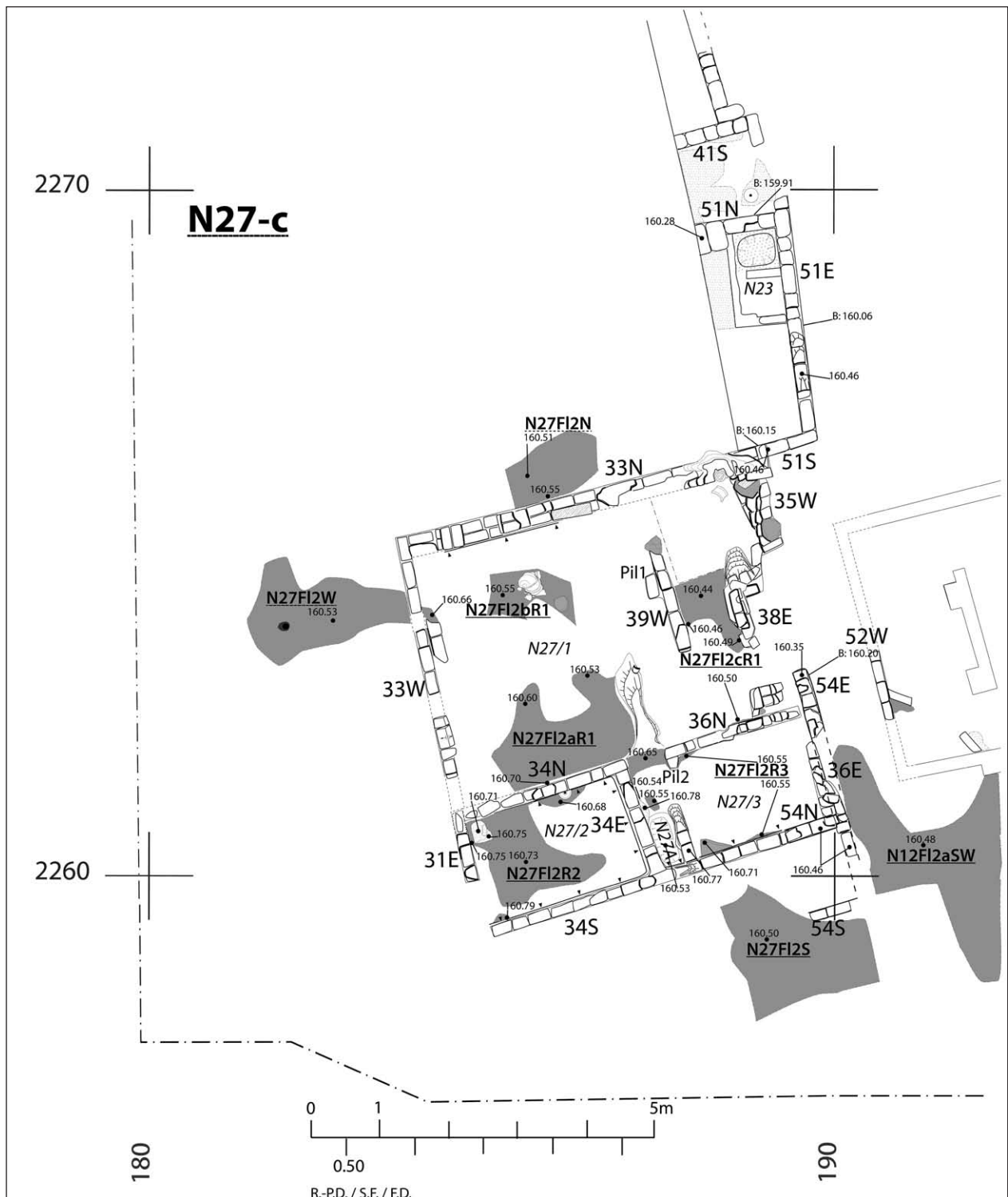


Fig. 49 Plan of Phase N27-c: levels of installations and floors 2

– also fall into the medium format category. Bricks of the same size ( $36 \times 18 \times 9\text{cm}$ ) were used for internal walls 38E and 39W, also in the medium format category. Finally, the southern perimeter wall (34S) and the three internal walls delineat-

ing the side rooms (34N, 34E and 36N) were built with bricks of a similar size in the medium format category, *i.e.*  $38 \times 16 \times 7/8\text{cm}$ . The latter case demonstrates that the same type of bricks were used indifferently, without particular consideration for

the type of wall, either perimeter or internal. It is worth noting that some bricks from Wall 36N display longitudinal digit prints, the only representation in N27 of finger marks printed in the brick or grooved in the horizontal bedding mortar.<sup>324</sup>

## F.5 Description of N27 installations

(Fig. 49)

### F.5.1 Courtyard N27/1

No specific installation was documented within the courtyard N27/1. However, it should be mentioned that, subsequent to the five campaigns 2008–2012, some east–west oriented mud brick footing courses have been revealed in the middle of the courtyard as the result of wind erosion.

### F.5.2 Side room N27/2

Strictly speaking, there is no properly built installation within the southwestern side room of building unit N27. Nevertheless, the presence of a stone associated with a small flat pestle in the northwestern corner of N27/2 attests to milling activities. The flat stationary half broken saddle stone is ovoid-shaped, 30cm in diameter and *c.* 5cm thick. This sandstone grinding device features a red ochre top surface. The schist pounder found on the top measures 17 × 6 × 3cm.

The bottom of the grindstone is levelled at 160.71m and the surrounding edges at 160.75m. This milling device was found stuck in an intact patch of mud-coated floor surface N27FI2R2, also levelled at 160.75m. The rounded northern edge lies near the western end of Wall 34N, while the straight western edge runs 5–9cm from the foot of Wall 31E.

### F.5.3 Side room N27/3: N27A

(Pl. 30)

The north-facing Installation N27A is located in the southwestern corner of Room N27/3. Built against the eastern face of dividing wall 34E, this installation is a sub-rectangular mud-coated bin, with inner dimensions of 0.68 × 0.25m and a depth of 0.24m.<sup>325</sup> The north–south oriented eastern boundary of storage bin N27A runs parallel to and 0.30m from Wall 34E. The length of this low retaining wall is two to

three stretcher bricks (0.85m), with only two brick courses (0.24m) intact, at its southern end. At the northern end, only a bedding joint mortar attests to the former presence of the lower brick course.

The eastern brick boundary of N27A is plastered on both faces. Where it abuts the inner face of building unit N27's southern perimeter wall (34S), an upper render lips out from the wall (IIF.2.1.1). The construction of the boundary wall thus belongs to a stage that predates the addition of the facing plaster partly covering the four upper courses of Wall 34S.

The floor of Installation N27A is covered with a mud plaster surface, levelled at 160.53m. This floor plaster coating was the first layer to be spread within the feature, with both the facing plaster of the boundary wall's inner/western side and the coating<sup>326</sup> at the northern edge applied at a later stage. In the corner joining Walls 34S and 34E, the basal courses bear an unusual type of render made of a coarse, friable and orange sandy-silt material.<sup>327</sup> This coating rims the south and west sides of the bin and lips out from the walls over N27A's plastered floor. Compared to the other facing plasters coating the walls of SAV1 North, the plastering material of N27A's sides is quite remarkable. This rough reddish material also shows the presence of charcoal and chalky particles, which may be related to either the type of storage within N27A or to heating activity inside the bin.

East of Installation N27, another feature, a possible quern implement, might be related to the activity inside N27/3. A triangular portion of a sandstone quern inserted in the brickwork of wall 34S projects out of the wall (II.F.2.1); it might have been used for the preparation of products before their conditioning within the nearby bin.

## F.6 Coated surfaces associated with N27

(Figs. 47, 49 and 51)

### F.6.1 Outside N27

#### F.6.1.1 To the south of N27

The partial excavation to the southwest of N27 did not expose 3.70m of the base of 34S, making discussion of potential flooring impossible. Where the

<sup>324</sup> This finger mark falls into the Type L category (IIA.3).

<sup>325</sup> See similar installations within building unit N12 (IID.5.2.1 and IID.5.3.2).

<sup>326</sup> The top of this coating at the northern entrance of N27A is levelled at 160.58m.

<sup>327</sup> The top of the orange rim coating is levelled at 160.78m and the base at 160.54m.

Building Unit N27		Length (cm)	Width (cm)	Thickness (cm)	Total l + w + t	Format
<b>Perimeter walls</b>	34S	38	16	7/8	61.5cm	medium
	35W	35	17	8	60cm	medium
	36E	37	18	10	65cm	large
	33N	33	16	8	57cm	small
	33W	35	17	10	62cm	medium
	31E	36	18	9	63cm	medium
<b>Internal walls</b>	38E	36	18	9	63cm	medium
	39W	36	18	9	63cm	medium
	<b>N27Pil1</b>	36	18	9	63cm	medium
	34N	38	16	7/8	61.5cm	medium
	34E	38	16	7/8	61.5cm	medium
	36N finger mark Type L	38	16	7/8	61.5cm	medium
	<b>N27Pil2</b>	35	16	7/8	58.5cm	small

Fig. 50 Walls and pilasters of N27: brick sizes

base of the eastern end was exposed, it appears that 34S was probably built on a brick course identified as Wall 54N and belonging to a former construction (IIF.2.1). South of the eastern end of Wall 34S, small patches of mud floor coating material adhere to the gravelled surface over the 1m area bounded by walls from an earlier phase: 54N, 54E, and 54S (Pl. 29). Below these floor patches, the gravelled surface is levelled at 160.46m. In contrast to the heavily truncated floor surface in this area, a fairly intact plaster Floor N27F12S lies further south of Wall 54S, levelled at *c.* 160.50m; this floor may have once formed a continuous surface covering the entire outer area.

#### F.6.1.2 To the east of N27

To the southeast, near the southern end of Wall 36E, is a *c.* 1.5–2m span of the mud-plaster Floor N12F12aSW. This floor, levelled at 160.48m, partly covers the lanes both south and west of building unit N12<sup>328</sup> and abuts the top of Pilaster N12Pil4's footing brick. Because of truncation, there is no evidence of a connection between this mud-plaster floor and the outer/eastern side of Wall 36E. How-

ever, within the broken areas it is possible to identify a *c.* 12cm thick gravel deposit, (N27De2a). This gravel layer may correspond to Deposit (N12De2a) underlying the coated surface N12F12aSW, found at the southwestern corner of building unit N12 (IID.6.1.1 and Fig. 39).

To the northeast, along the eastern face of Wall 35W is lower coated floor surface, whose top level ranges from 160.22m to 160.18m. This 2–3cm thick surface N27F11E covers a gravelled soil and underlies the layer of occupational deposit (N27De1a) on which perimeter wall 35W was later built.<sup>329</sup> This same occupational deposit was also identified below both segments of Wall 38E.<sup>330</sup> Moreover, Floor N27F11E and its overlying Deposit (N27De1a) could have the same phasing pattern as Floor N12F11aW identified eastward outside N12, and Deposit (N12De1c), below front Wall 52W (see Fig. 51).

#### F.6.1.3 To the north of N27

To the east of the later Wall 37, a segment of coated surface N27F12N runs north of the outer/northern face of Wall 33N. This floor is measured at an aver-

<sup>328</sup> A north–south oriented lane separates the eastern side of N27 from the western side of N12.

<sup>329</sup> The top of Deposit (N27De1a) is levelled at 160.35m below Wall 35W.

<sup>330</sup> The top of Deposit (N27De1a) is levelled at 160.33m below the north segment of Wall 38E and at 160.40m below its south segment (Pl. 29).

Outside, south of N27	Outside, east of N27 (south)	Outside, east of N27 (north)	Outside, west of N12	Outside, north of N27	Outside, west of N27	Inside, across N27/1	Inside, across N27/2	Inside, across N27/3	Building phases of N27
								Surface Level 1 Brick rubble	
								Level 2 Sandy deposit	
								<u>N27F13R3</u>	
								(N27De3a)	
<u>N27F12S</u>	<u>N12 F12aSW</u> (N27De2a)		<u>N27F12N</u>	<u>N27F12R1</u>	<u>N27F12W</u>	<u>N27F12R1</u>	<u>N27F12R2</u>	<u>N27F12R3</u>	
(N27De2a)			(N27De2b)	(N27De2d)	(N27De2c)	(N27De2d)	(N27De2e)	(N27De2f)	
<b>34S (west)</b>	<b>36E</b>	<b>35W</b> (N27 De1a)  <u>N27 F11E</u>	<b>52W</b> (N12 De1c)  <u>N12 F11aW</u>	<u>N27 F11N</u>  <b>33N (west)</b>	<b>33W</b> <b>31E</b>	<b>38W</b> <b>39E</b>	<b>34N</b> <b>34E</b>	<b>36N</b>	<b>N27-c</b> <b>Building phase</b>
<b>51N (Level 4)</b>	<b>54E (Level 4)</b>			<b>51S (Level 4)</b>					<b>Level 4</b>
Gravel backfill									

Fig. 51 Floors, fills and building phases of N27

age level of 160.51m and abuts the basal course of N27's northern perimeter wall. Although N27F12N is partly truncated – less than 1m remains – an intact portion of this surface does lip out and connect to the wall's northern face at 160.55m. This surface covers the occupational deposit (N27De2b) that hides the footing course of Wall 33N.

To the west of Wall 37, there is also evidence of a few lipping mud features curving out from northern face of Wall 33N, the top levelled at 160.45m. These probably indicate the former presence of mud-coated surface N27F11N overlying the gravelled soil.

Where the footing course has been exposed at the eastern end of Wall 33N, there is clear evidence of the earlier underlying Wall 51S (IIF.2.3). At the western end of Wall 33N, the footing course runs upon gravel, levelled at *c.* 160.40m.

#### F.6.1.4 To the west of N27

A distinct patch of coated surface N27F12W, *c.* 2m in surface area, lies outside the western side of building unit N27. This surface is truncated along Wall 33W, but a mud feature lipping out from the base of the outer face of the wall probably corresponds to the floor. Against the basal stretcher of Wall 33W, the upper part of the mud feature is levelled at 160.67m and its base at 160.60m while the top of Floor N27F12W ranges from 160.53m to 160.49m. The floored surface N27F12W overlies the occupational deposit (N27De2c) that conceals the footing bricks of Wall 33W.

### F.6.2 Inside N27

#### F.6.2.1 Courtyard N27/1 (Pl. 28)

A mud-plaster floor extending across the full width of courtyard N27/1 is preserved in patches that each range from 1–3m in surface area. Of these subunits, the three most extensive were identified as follows:

- N27F12aR1 lies in the southwestern quadrant of N27/1, in front of dividing wall 34N. Its top level varies from 160.53m in the centre of the court to 160.70m at the juncture point with the base of Wall 34N's outer/northern face.

- In the northwestern quadrant of the court N27/1, the top of the floored surface N27F12bR1 is levelled at 160.55m. To the west of this surface, truncation precludes identification of any connection between the floor and the base of Wall 33W's inner face. Nevertheless, a small piece of flooring material adheres to this wall's inner face at 160.66m and may be a remaining piece of Floor N27F12bR1.
- In the east of N27/1 is mud-coated floor surface N27F12cR1, lying between Walls 38E and 39W. The top of this floor is levelled at 160.44m, while its points of juncture with the facing plaster of either wall varies from 160.49m to 160.46m. On the northern face of Wall 36N, 1.20m south of Wall 39W, the facing plaster extends to the base of the fifth brick course from the top of this wall,<sup>331</sup> where it curves out at its lowest point. This feature, levelled at 160.50m, may correspond to the juncture between the facing plaster on the wall and the coated floor surface N27F12cR1, now lost alongside Wall 36N.

In the places where Floor N27F12R1 is truncated, it is possible to identify (N27De2d), which conceals the footing course of the walls encompassing the court.

#### F.6.2.2 Side room N27/2

In the southwestern corner of building unit N27, a large piece of mud-coated surface was found intact on the gravelled ground, extending across side room N27/2. This surface N27F12R2 covers an area of over 1m, *i.e.* roughly half the ground area within Room N27/2. Unlike the other floor material inside and outside of different building units of SAV1 North, surface N27F12R2 is not truncated along the wall faces. One can thus see clear evidence of this coated floor in close connection to the facing plaster running down the walls, which is especially visible in the southwestern and northwestern corners of N27/2<sup>332</sup> and along the inner face of the internal wall 34N (IIF.3.3.1).<sup>333</sup>

The phases of flooring for Room N27/2 are most likely the same as the courtyard N27/1.<sup>334</sup> Floor N27F12R2 overlies gravelled deposit accumulated within the boundary of N27/2. On the northern face,

<sup>331</sup> This point, at the base of the fifth course from the top, is levelled at 160.50m.

<sup>332</sup> At the interior southwestern corner of N27/2, surface N27F12R2 is levelled at 160.79m. At the interior northwestern corner of N27/2, this surface is levelled at 160.75m.

<sup>333</sup> Along the southern face of Wall 34N, surface N27F12R2 is levelled at 160.68m. This floored surface stretches below a tall footed offering dish (N/C 605, III.5.4).

<sup>334</sup> Cf. coated surface N27F12aR1 (IIF.6.2.1).



the footing course of Wall 34N is visible where the courtyard's coated Floor N27F12aR1 is truncated, at the northeastern outer corner of the room. When applying this evidence to the interior of N27/2, it may be determined that the gravelled deposit (N27De2e), found below Floor N27F12R2, is *c.* 10cm thick and masks the footing course of the walls.

As with courtyard N27/1, Room N27/2 was not excavated beyond the gravelled level of (N27De2e), so the character of the deposits underlying the footing courses of the walls is unknown.

### F.6.2.3 Side room N27/3

In Room N27/3, the uppermost fill consisted of layers of brick rubble (*i.e.* "Level 1")<sup>335</sup> and sandy deposit (*i.e.* "Level 2")<sup>336</sup>. Within this sandy deposit, the decorated squat jar N/C 494<sup>337</sup> was discovered intact, except for a half-broken rim (Fig. 81). The base of the jar was found on a thin mud surface levelled at 160.81m. Surface N27F13R3 is poorly preserved in the area of the inner southwestern corner of N27/3 and otherwise lost in the rest of the room. Considering Floor N27F13R3 with an altitude that slightly corresponds to the altitude of the second render over the adjacent wall 34S's lower end (IIF.2.1.1),<sup>338</sup> a possible phasing relation might be suggested; when the second render was applied over the southern face of Wall 34S, this render extended down to the level of Floor N27F13R3. The latter also separates the sandy deposit from an earlier accumulated layer of debris with stone pieces, (N27De3a).

Deposit (N27De3a) is *c.* 25cm thick. It overlies an additional mud-coated floor surface N27F12R3, which in turn overlies a gravelled deposit. The lower Floor N27F12R3 is heavily truncated all across Room N27/3, with only a few patches visible north of storage bin N27A, in the area of the entranceway to N27/3 (Pl. 30).<sup>339</sup>

In addition, within side room N27/3 the northern/inner face of Wall 34S shows the typical plastering method, with the lower part of the facing plaster lipping out from the wall. Levelled at 160.55m, this curved-out feature may indicate the former presence

of Floor N27F12R3, which was connected to the base of Wall 34S. A similar feature concealing the basal courses of Wall 36N on its southern face (IIF.3.5.2) is also levelled at 160.55m.<sup>340</sup> Furthermore, the courtyard's Floor N27F12cR1 also once joined the northern base of Wall 36N at 160.50m (IIF.6.2.1). Given the analogous levels of the curved-out wall plasters, it can be supposed that Floors N27F12R3 (inside N27/3) and N27F12cR1 (outside N27/3 and within the courtyard N27/1) may have been completed at the same time. Coated Floor N27F12R3 was laid upon Deposit (N27De2f), which hides the footing course of walls bounding Room N27/3. Inside N27/3, the sequence of Floor N27F12R3 on the top of Deposit (N27De2f) may also correspond to the sequence identified outside the southeastern corner of the building, *i.e.* N12F12aSW over (N12De2a).

### F.6.3 Building phases of N27 (Fig. 51)

The walls of building unit N27 were only exposed to the footing courses on the eastern side of the building, thereby providing direct evidence of the material underlying the eastern end of Wall 34S, as well as Walls 36E, 38E, 35W and the eastern end of Wall 33N. From this it is seen that the perimeter walls 34S, 36E and 33N were clearly built on the top of existing brickwork (*i.e.* Walls 54N, 54E and 51S respectively), which belong to the earlier Level 4 building/occupation phase.<sup>341</sup> On the other hand, both Walls 35W and 38E were constructed on Deposit (N27De1a), which overlies the muddy trampled surface N27F11E. It should be noted that such an arrangement is also seen east of N27, below the footing course of N12's perimeter wall, 52W.

By extrapolation, it may be thus tentatively concluded that all the perimeter and internal walls of N27 date to Phase N27-c. Subsequently, the development of occupation layers (N27De2a-f) concealed the footing courses of Walls 34S, 36E, 33N, 33W/31E, 39, 34N, 34E and 36N, as seen in many places both outside and inside N27. There are also several remnants of flooring material N27F12, which

<sup>335</sup> This pile of brick rubble is over 0.50m thick, from *c.* 161.50m to 160.98m.

<sup>336</sup> The top of the sandy deposit is levelled at 160.98m.

<sup>337</sup> The top of N/C 494 is levelled at 160.98m and base at 160.81m. For this jar see MIELLÉ 2011–2012, fig. 5.2 and in the present volume, III.5.4.

<sup>338</sup> This additional/second plaster extends down to Wall 34S, from 161.24–160.85m.

<sup>339</sup> Here, the top of the mud-coated surface N27F12R3 varies from 160.65m (entranceway) to 160.55m (north of N27A's northern rim).

<sup>340</sup> The curved-out feature on Wall 34S (inside N27/3) is levelled at 160.55m and a similar feature on Wall 36N (outside N27/3) is levelled at 160.50m.

<sup>341</sup> BUDKA and DOYEN 2013, 174, fig. 3.

were laid over the earlier occupation deposit (Fig. 49). This flooring phase may also coincide with the wall-plastering phase, as indicated by intact points of connection between floor and facing plaster at the top of the footing bricks of the walls.

Within Room N27/3 it is possible to identify an additional layer of Deposit 3. This layer, a demolition stage that developed over Floor N27F12R3 (at present truncated) was later concealed by Floor N27F13R3. There is no clear evidence of relation between this upper floor and a second building phase of N27, but this sequence of flooring may be concomitant with the refreshment of the facing plaster on the room's interior southwestern corner.

### G CONCLUDING REMARKS ON THE ARCHITECTURE AT SAV1 NORTH

On the basis of the architectural analysis of the five building units assigned to Level 3 at SAV1 North, it can be stated that N24, N25, N12, N26 and N27 pertain to a rectilinear type of architecture with a planned housing system. Even though none of the exposed building units is of the same size or plan, all are arranged according to a loose and detached pattern of spatial distribution. This pattern reveals a clear alignment oriented along the town's northern enclosure wall (N4) and thus in compliance with the general pattern of the settlement grid in SAV1, corresponding with the southern sector of the Pharaonic town.

The building units of SAV1 North from Level 3 have been assessed here with regards to the different aspects of building techniques. Firstly, conclusions are drawn with respect to the size and disposition of the bricks. The building units were constructed with mostly narrow, half-a-brick thick walls. However, the size of the bricks themselves seems not been related to a particular purpose, wall, pilaster or installation. In other words, the distribution in SAV1 North does not imply that a particular size of brick – small, medium or large – was necessary to build a particular type of wall, be it perimeter or internal.

Secondly, from the study of the relationships of the walls and pilasters, both in the bonding and in successive wall plastering and floor coating, information can be gleaned as to the different phases of building and occupation. The gravel backfill substratum is evidence of human activity prior to

the construction phases N24-b, N25-b, N12-c and N26-c, while N27-c partly sits on walls belonging to an earlier building phase, Level 4.<sup>342</sup> The earliest construction stage for the Level 3 units could start with the perimeter and internal walls (N24-b, N12-c, N27-c), with one of the perimeter walls (N25-b) or with perimeter walls and two of the inner walls (N26-c). It is also possible to ascribe the construction of Enclosure Wall N4 and its external interlocked small Brick Tower N3 to the earliest building phase of Level 3. The floors designated as "1" for each unit belong to this first building phase. The second building phase attests to various changes and additional installations. Within N24, phase N24-a shows the construction of two extra segments of walls: one extends the span of the northern perimeter wall and the other links the two parts of the western perimeter masonry. Modification of the access pattern may potentially result from these brickwork additions. For building unit N25, phase N25-a features the construction of the northern and eastern perimeter walls. Within N12, three installations – a storage bin, a storage pit, and a quern emplacement – belong to the second building phase N12-b, while in N26 the second stage of construction (N26-b) is represented by the building of additional internal walls to delineate the western side rooms. The secondary building phases N24-a, N25-a, N12-b, and N26-b are all connected by a new sequence of flooring, designated in each unit as Floor 2. By contrast, from the case study of N27, it seems that this Floor 2 may rather correspond to a refreshment of the floor, without evidence of a new building stage. A distinct *third* building phase is identified in only two of the five building units, where there is also evidence of a Floor 3, and has been designated there as N12-a and N26-a. Building phase N12-a shows both the restoration and extension of the southern perimeter wall, as well as the erection of two additional pilasters. In building unit N26, the short western and eastern perimeter walls were reinforced by the adjunction of extra wythes. In N27, the possible remains of a Floor 3 identified in Room N27/3 are not related to a distinct building phase, but rather to the refreshment of the facing plaster in the room's interior southwestern corner.

Finally, the identifiable access points into each building unit indicate that no constant orientation

<sup>342</sup> BUDKA and DOYEN 2013, 175. For the short sections of walls attributed to Level 4, see BUDKA and DOYEN 2013, 172. Budka further specifies the date of these earliest archi-

tectural remains "to the time span of Ahmose Nebpehtyra up to Thutmose I", see BUDKA 2014, 62, note 72.