

CHAPTER 3: THE NEW KINGDOM TOWN – THE EXCAVATIONS AND ARCHITECTURE

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3.1 GENERAL REMARKS

The fortified Egyptian town which was the focus of the archaeological investigations by the Across-Borders project from 2013–2017 was built on the eastern bank of the large island of Sai in the New Kingdom (Figs. 1–2). This was probably the perfect place on the island from a strategic perspective, especially for controlling river traffic and to facilitate the landing and loading of ships (see below on sector SAV1 Northeast, Chapter 3.5). The eastern part of the town steeply drops off towards the Nile, in some areas with a height difference of about 8m. The sandstone cliff here was also used for quarrying purposes (see Chapters 2.2 and 2.6).

The Egyptian town of Sai has the shape of a fortified settlement with an orthogonal layout in a south-north direction, measuring 238m north-south and *c.* 118–120m east-west, with a total of 27.600m² (2.76ha).³³⁶ The main city gate was located on the western side, opening to a main east-west axis leading to the stone temple, Temple A. Prior to AcrossBorders' fieldwork, almost two thirds of the New Kingdom town were unexcavated and a detailed assessment of the entire town's evolution was not possible.³³⁷ Previous work had focused on the southern part of the town, which was overbuilt by the Ottoman fortress (Fig. 2), and a section of the northern part along the enclosure wall (see Chapter 1.2).³³⁸

With new fieldwork in various sectors, a detailed re-investigation of the southern area and a concise account of finds in all excavated parts (Fig. 3), the AcrossBorders project was able to highlight some of the significant aspects of this Egyptian temple town, which are also relevant on a comparative level for other sites. Before the newly excavated sectors will be presented, the areas documented prior to the AcrossBorders project shall be briefly described. These are the southern and northern sectors of the New Kingdom town.

3.1.1 Southern sector (SAV1)

The southern part with a temple and a residential quarter datable to the mid-18th Dynasty, labelled as SAV1, was investigated by a French Mission in the 1950s and 1970s.³³⁹ Except for Temple A, everything of this sector is located below the Ottoman fortress (Chapter 1.2). Only in some parts the state of preservation of the 18th Dynasty remains was good; very often the remains suffered from the later phases of use, re-use and destruction. As described by Jean Vercoutter: "Stratification is practically impossible to ascertain owing to the extensive removal of earth and the consecutive disturbance of the site, due to the work of the 'marog' diggers."³⁴⁰

³³⁶ Adenstedt 2016, 24, fig. 7; Budka 2017c, 71; see also Adenstedt 2018.

³³⁷ See Budka and Doyen 2013, 181–182.

³³⁸ Budka and Doyen 2013, 170–171.

³³⁹ Azim 1975; Adenstedt 2016.

³⁴⁰ Vercoutter 1958, 154.

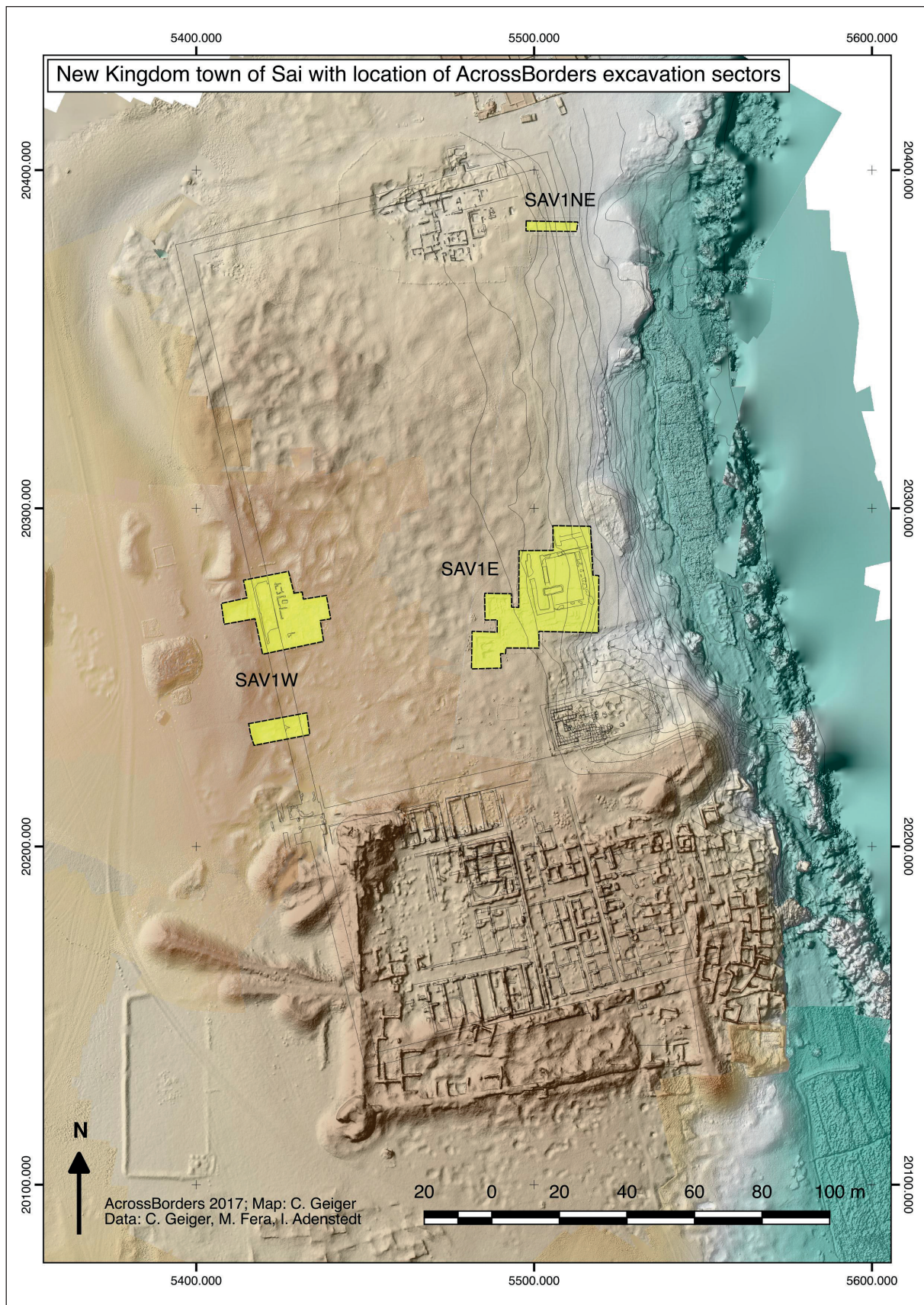


Fig. 3 Map of New Kingdom town of Sai with excavation sectors of the AcrossBorders project

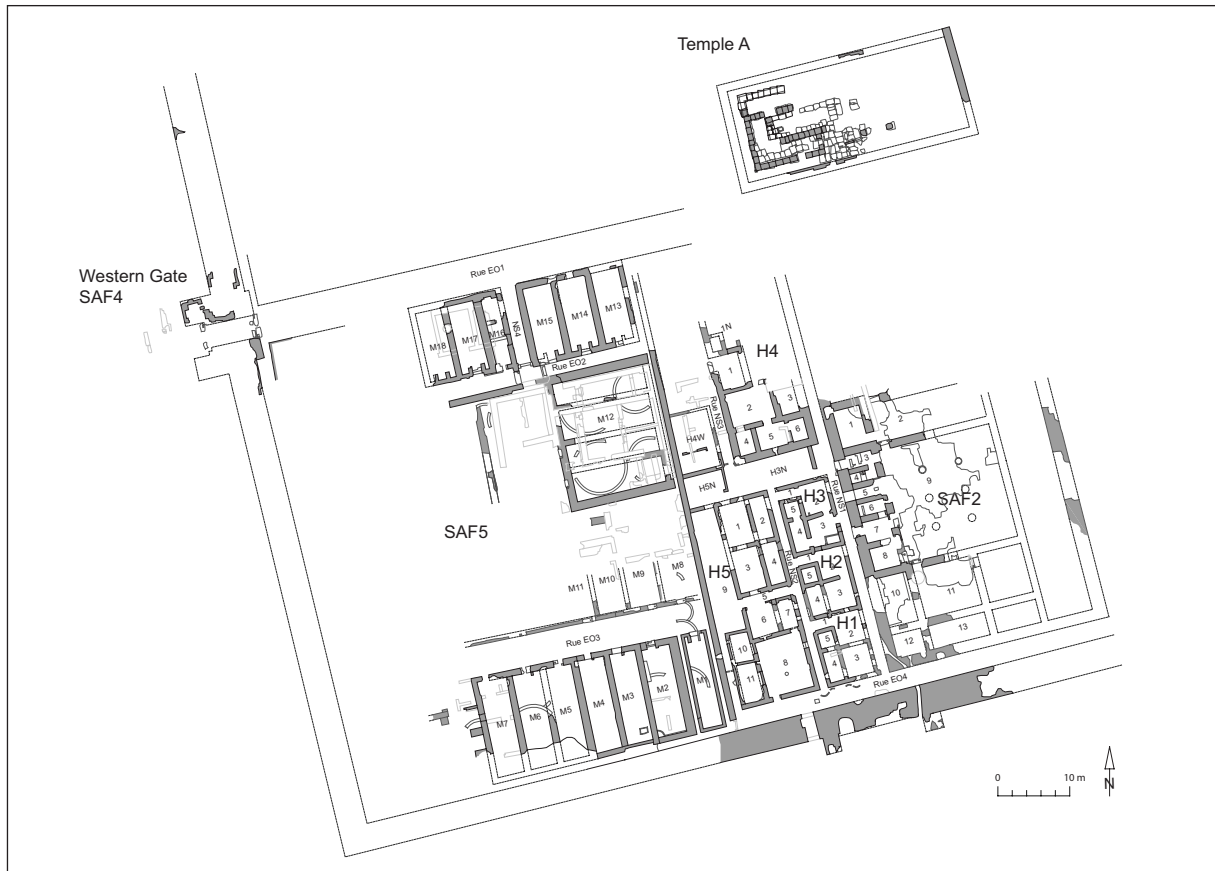


Fig. 4 Mid-18th Dynasty remains in SAV1, southern part of New Kingdom town

The following features were identified as being contemporaneous and from Thutmoseid times (Fig. 4): the so-called governor's residence (SAF2) with a large columned hall (15.3 × 16.2m) and mud brick paving in the east;³⁴¹ a central domestic quarter H comprising a cluster of five houses (H1–H5); and a western quarter (SAF5), consisting of several rectangular storage rooms and circular silos.³⁴² Parallels for such a layout can be found at other New Kingdom temple towns, especially at Buhen, Amara West and Sesebi.³⁴³ Domestic space seems to be limited at all of these sites, whereas much room is occupied by storage facilities and magazines. At Sai, about one half of the area, the western side of SAV1, is designated as storage area with several rows of magazines; the residential area is restricted to the eastern part with the smaller houses H1–H5 and the so-called governor's palace SAF2.³⁴⁴

Together with these buildings, also remains of the New Kingdom enclosure wall were uncovered in SAV1.³⁴⁵ The remains in the south could be traced on a length of 41.8m and up to a height of 2.4m. To the west, the Pharaonic enclosure wall was overbuilt by the Ottoman fort, while the eastern part of the southern city wall has completely disappeared. The width of the fortification wall in the south is 4.4m and it consisted of mud bricks of the format 40 × 19 × 9cm.³⁴⁶

³⁴¹ Budka 2018a; see also Azim 1975, 100–109; Adenstedt 2016, 57–63.

³⁴² Azim 1975, 98, pl. 4; for new details, see Adenstedt 2016, 35–44.

³⁴³ Kemp 1972, 651–653; Morris 2005, 195–197.

³⁴⁴ Adenstedt 2016; Budka 2017b, 49.

³⁴⁵ Azim 1975, 120–122.

³⁴⁶ See Adenstedt 2018.

An opening in the southern side of the enclosure wall can be regarded as one of the city gates. It is 1.68m wide and was closed off by secondary walls at a later date.³⁴⁷ Compared to the western gate, which can be addressed as the main city gate (see above), this opening was rather simple in its design and Michel Azim addressed it as a so-called water gate.³⁴⁸ Although this is a likely interpretation and finds parallels in Middle Kingdom fortresses, no direct walkway to the Nile has so far been discovered (see Chapter 2.5).³⁴⁹

Other notable features on the southern enclosure wall are the protrusions on its outer side. In Azim's plan, four of these projections are depicted.³⁵⁰ However, during the recent re-examination by Ingrid Adenstedt, only two of them could be verified, measuring $2.2 \times 2.3\text{m}$ and $2.5 \times 2.3\text{m}$ respectively.³⁵¹

The small sandstone temple of Sai, Temple A, with a width of *c.* 10m, was situated north of the Ottoman fortress on the eastern side of the New Kingdom town. It finds close parallels at other Egyptian sites of the 18th Dynasty in Nubia (in particular Kumma).³⁵² Several building phases under the reign of Thutmose III are attested by foundation deposits³⁵³ and a building inscription (S. 1) by viceroy Nehy (see Chapter 6.4.1.2).³⁵⁴ Some additions were undertaken by viceroy Usersatet during the reign of Amenhotep II (see Chapter 6.4.1.3).³⁵⁵ Amenhotep III was responsible for the final construction and decoration phase of Temple A³⁵⁶ which was primarily dedicated to Amun-Ra, but also to 'Horus the Bull, Lord of Ta-Seti'. The identity of 'Horus the Bull, Lord of Ta-Seti' has been a matter of divergent discussion among scholars. Florence Thill argued that this deity is not a local Horus deity as commonly believed, but rather a manifestation of Thutmose III himself.³⁵⁷ Following this identification, Temple A illustrates a close connection of the temple cult on Sai to kingship and the living ruler.³⁵⁸ The general invocation of divine royalty and the cult of royal ancestors are evident at Sai from the very beginning of the New Kingdom since two heb-sed statues of Ahmose Nebpehtyra (Khartoum SNM 3828 & 63/4/4) and Amenhotep I (Khartoum 63/4/5) were found on the island (see above, Chapters 1.1 and 1.2).³⁵⁹ The architectural context in which these royal statues were originally set up is still debated, but a small mud brick chapel, probably a *ḥw.t-k3* in the general temple area, seems as the most likely.³⁶⁰

Thanks to a new architectural study by Adenstedt within the framework of AcrossBorders and based on a 3D laser scanning campaign conducted in 2014, the southern sector of the Egyptian town of Sai was recently published as representative Pharaonic architecture in Nubia (Fig. 4).³⁶¹ Adenstedt's reassessment of SAV1 is in some aspects relevant for a better understanding of the town layout. Especially significant are the following new observations:³⁶² a) the area labelled as SAF3 by Azim is not part of the original Pharaonic architecture but of later date (which is significant for the reconstruction of the position of the eastern town enclosure); b) the plan of the storage area SAF5 was clarified including some newly reconstructed magazines; c) a 3D reconstruction of the houses H1–H5 and the governor's residence SAF2 was proposed. Furthermore, the new 3D reconstruction of the bastioned enclosure wall

³⁴⁷ Adenstedt 2016, 25. See also Adenstedt 2018.

³⁴⁸ Azim 1975, 120.

³⁴⁹ See also Budka 2018a, 264.

³⁵⁰ Azim 1975, 98, pl. IV.

³⁵¹ Adenstedt 2018.

³⁵² See Azim and Carlotti 2012; this temple and especially its decoration programme is currently being prepared for publication by a team of French colleagues, mainly by Jean-François Carlotti and Luc Gabolde.

³⁵³ Azim and Carlotti 2012, 39, 45.

³⁵⁴ Davies 2014a, 7–8 with references.

³⁵⁵ Azim and Carlotti 2012, 46–47; Gabolde 2012, 137; Davies 2017a, 145.

³⁵⁶ Azim and Carlotti 2012, 47, pl. XVI-b.

³⁵⁷ Thill 2016, 263–304.

³⁵⁸ Budka 2017d, 34.

³⁵⁹ See Gabolde 2012, 118–126; Budka and Doyen 2013, 170, with further references.

³⁶⁰ Budka 2015b, 76–80; 2017c.

³⁶¹ See Adenstedt 2016.

³⁶² Adenstedt 2016, 69–70.

allows fresh thoughts on Sai as a fortified town. This 3D reconstruction is, however, mainly based on comparative studies and still raises some questions.³⁶³

3.1.2 Northern sector (SAV1 North)

From 2008–2012, fieldwork was conducted by the Sai Island Archaeological Mission (SIAM) of Lille 3 along the northern enclosure wall, at a site named SAV1 North.³⁶⁴ Several building phases from the early 18th Dynasty to Ramesside times and post-New Kingdom eras were documented.³⁶⁵ The earliest strata at SAV1 North (Levels 5 and 4), which would be essential for identifying the founder of the town, are only scarce architectural remains and some occupational deposits. The initial sequence of Egyptian occupation on Sai is, therefore, hard to reconstruct in this area and mostly relies on the ceramic evidence which attests to an Egyptian presence already during the reigns of Ahmose Nebpehtyra and Amenhotep I.³⁶⁶ Most important at SAV1 North was the discovery of remains of the enclosure wall at a length of 39.32m, being 4.26m thick and attributed to Level 3. No gate was discovered in this part of the town wall. Similar to what was documented by Azim at the southern part of the town wall, a protrusion was situated on the outer side of the northern wall, measuring 2.6 × 2.2m. It is a tower-like structure of the same type and proportion as the ones on the south side.³⁶⁷ Thanks to stratigraphic evidence and the pottery, the northern enclosure at SAV1 North could be dated to the second half of the long reign of Thutmose III.³⁶⁸

Interestingly, the architectural remains in sector SAV1 North adjacent to the town wall do not correspond to the general town planning visible in the southern sector.³⁶⁹ The structures are markedly different, but find close parallels in the new excavation area SAV1 West (see below). The building units at SAV1 North include typical Egyptian tripartite houses, considerably smaller than the houses in SAV1, but similar to houses in Middle Kingdom Nubian fortresses (e.g. at Uronarti and Buhen).³⁷⁰ Other building units at SAV1 North do not find close parallels within Egyptian orthogonal settlements, distinct in both size and ground plan from the houses in SAV1. Thus, SAV1 North nicely illustrates that within the town of Sai there are several different sectors that contrast regarding their layout and presumably also concerning their function (see also below).³⁷¹

3.1.3 Excavation and documentation techniques

In the frame of the fieldwork of the AcrossBorders project on Sai Island, a new form of documentation system was established and developed.³⁷² It is based on a geodetical survey by a total station and image-based 3D modelling via the “Structure from Motion” (SfM) principle.³⁷³ Thereby, the stratigraphical excavations of various areas in the Pharaonic settlement as well as their environment were recorded in 3D.

Fieldwork of AcrossBorders on Sai with relevant 3D field documentation was conducted from 2014–2017 during the winter months January to March by an international team of archaeologists with the help of local workmen (see Chapter 3.8).³⁷⁴ The applied documentation system is a GIS-based system for the documentation of stratigraphical excavations which has been developed at the University of Vi-

³⁶³ See Adenstedt 2018.

³⁶⁴ See, most recently, Budka 2017e.

³⁶⁵ Doyen 2009, 17–20; Budka and Doyen 2013, 168–171; Doyen 2014, 367–375; Budka 2017d.

³⁶⁶ Budka 2016a.

³⁶⁷ Budka and Doyen 2013, 178; Doyen 2017, 29–31; see also Adenstedt 2018.

³⁶⁸ Budka and Doyen 2013, 168–171; see also Adenstedt 2018.

³⁶⁹ Budka 2017f, 171–175.

³⁷⁰ Budka 2017a, 22.

³⁷¹ Budka 2017f, 176–177.

³⁷² Fera and Budka 2016; Fera and Geiger 2018. Note that this documentation technique was not applied in the first season of AcrossBorders in 2013 (see below, Chapter 3.2.1).

³⁷³ Cf. Dell’Unto 2014.

³⁷⁴ In 2013, no SfM application was applied during the fieldwork on Sai, but traditional mapping and drawing; see also Plans 1–3.

enna since 2000.³⁷⁵ The stratigraphical unit (SU) is the fundamental entity of this conceptual model: SUs were constantly differentiated and documented during the excavation.³⁷⁶ The big advantage of removing SUs in the reversed order of their deposition is that the three-dimensional volume of the complete data set of the excavation site is recorded. The uncovered surfaces and contours of each individual SU are documented in this single surface excavation approach.³⁷⁷

The stratigraphical excavations at SAV1 East and SAV1 West were conducted starting at the daily surface through a sequence of digital surface models and orthophotographs. The single stratigraphical units (SU) were documented by their uncovered top surface (TS) as well as their bottom surface (BS) by a bundle of *c.* 70–100 photos. After removing a stratigraphical unit, the whole area of the current excavation was photographed to catch the surfaces of the following SUs in their context.³⁷⁸

This work flow opened the possibility to search for the sometimes hardly definable outlines of the next SU by actively looking for transient areas, helping a lot for clarifying complex stratigraphical relations. The geometry of the SU was drawn analogously on the prepared topical paper plan in a 1:50 scale.³⁷⁹ By doing this, the extent and volume of the deposit could be adapted during removal of the material. In many cases, structures were clearly visible so that it was not necessary to survey them by total station. By digitising the hand drawings and projecting them onto the surface models, a sufficiently accurate 3D documentation was received. In special cases, such as SUs with a very low thickness or surfaces with special functions (feature interfaces), the total station was, however, still used.

For geo-referencing the models, control points were set up on stable structures (walls, floor horizons, etc.) in the trenches. They were installed permanently and used during the whole period of excavation, as far as possible. To guarantee their stability, they were checked by regular control measurement surveys.

In addition to the digital documentation, all architectural remains were also drawn by hand in the field (see Figs. 13–14, 17–18, 21, 23, 32–33, 37). Therefore, the whole excavation area at both sites was recorded and a basic plan was created based on elevation models, slope shade models and orthophotographs in a 1:50 or, for details, 1:20 scale. This basic plan with already correctly located and oriented features in the wanted scale allowed to significantly reduce the measuring-technical expenditure and to focus on the interpretative mapping and illustration of the findings (see, e.g., Fig. 37 compared to Fig. 36).

Within the single surface excavation approach by AcrossBorders, one must once more stress the effects of the destruction by *marog* diggers mentioned by Vercoutter³⁸⁰ which were present both at SAV1 East and SAV1 West and resulted in a partly ‘reversed stratigraphy’ because of deep robbers’ pits.

Within the framework of the AcrossBorders’ excavation on Sai, a group of related contexts was labelled with the term “Feature”. Following Tassie and Owens, “a feature can be the product of a number of actions that have occurred over a short or long period of time.”³⁸¹ The most common multiple contexts on Sai were pits, walls, floors and installations (see Chapters 3.2.4 and 3.3.4).³⁸² Features were numbered consecutively at SAV1 East (1–91) and started from 100 at SAV1 West (100–103, 110–126, 130–162).

3.2 SECTOR SAV1 EAST

Aiming to achieve a more complete understanding of the layout of the 18th Dynasty occupation at Sai, a new excavation area was opened in 2013 at a sector labelled as SAV1 East, being located 30–50m north of Temple A at the eastern edge of the town (Fig. 3). The squares are located where the outline of an

³⁷⁵ Fera and Budka 2016; Fera and Geiger 2018 with references.

³⁷⁶ SUs represent deposits and all sorts of sedimentary accumulations; see Tassie and Owens 2010, 4.

³⁷⁷ See Tassie and Owens 2010, 5–9; Tassie 2015.

³⁷⁸ See Fera and Budka 2016; Fera and Geiger 2018 with references.

³⁷⁹ See Fera and Geiger 2018, 129, fig. 1.

³⁸⁰ Vercoutter 1958, 154.

³⁸¹ Tassie and Owens 2010, 6.

³⁸² See Budka 2017c; Budka 2018b.

orthogonal building was visible on the geophysical survey map from 2011.³⁸³ This structure seemed to be aligned with Temple A and the main north-south street, following the orientation of the buildings in the southern part of the town (SAV1) and thus suggesting a 18th Dynasty date.³⁸⁴ Fieldwork in SAV1 East was conducted from 2013 to 2017, opening four different squares with various extensions (Fig. 5). The area provided essential new information on the city map of Sai and in particular regarding the evolution of the New Kingdom town.

3.2.1 Progress of excavation

In the following, an overview of excavations at SAV1 East in AcrossBorders seasons 2013, 2014, 2015, 2016 and 2017 is provided in chronological order.

Season 2013

Based on the results from the geophysical survey conducted in 2011, a new excavation area at the eastern edge of the New Kingdom town was opened. The main aim was to investigate the orthogonal structure visible on the magnetometric survey map by means of excavation. The second objective of fieldwork at SAV1 East was testing whether any conclusions can be drawn from adjoining features to the zone excavated around Temple A. This was of particular interest for the AcrossBorders project because between Temple A and the new site early occupation remains with simple, workshop-like structures and storage facilities had been excavated in the 1970s.³⁸⁵ Azim was able to show that these occupation remains are pre-Thutmose III in date. It was, however, prior to the investigation at SAV1 East unclear how early the remains really are and whether they actually represent Kerma remains as proposed by Azim.³⁸⁶

Preceding the excavation, the surface was covered with pottery sherds, pebbles, stone tools and some slag (Pl. 38). The ground was uneven and in general sloping towards the east. Two squares of 10 × 10m were completely excavated in the 2013 season (Squares 1 and 2) as well as a northern extension (2 × 10m, Square 1A), an eastern extension (2.5 × 6m, Square 2A) and a southern extension (2 × 10m, Square 2B). The excavation work will be presented from north to south, starting with the findings in the northern sector. In Square 1A, Square 1, Square 2 and Square 2A mud brick remains were uncovered which all belong to one structure and confirm the image derived from the magnetometric survey results. This major building at SAV1 East was labelled as “Building A” (see Chapter 3.2.2).³⁸⁷

Very soon below the surface in the mentioned squares of SAV1 East, linear outlines filled with sand were found – it quickly became clear that these are the negative outlines of the building visible on the geophysical survey map. The original brickwork was largely completely destroyed and taken out; the material covering these remains was predominantly a sandy mix of debris containing ceramics from the 18th Dynasty, the medieval period and also some Ottoman sherds. The alignment of the former walls was confirmed by the remains of foundation trenches which were documented in some places. The foundation trenches of the walls of Building A were filled with loose gravel material and scattered mud bricks which were thrown into the trench and not laid properly.³⁸⁸

The best-preserved parts of Building A are located in the northeastern corner of SAV1 East. The northern wall (Features 13 and 21) runs roughly from east to west and extends beyond the eastern wall (Feature 3) towards the Nile (Feature 30). Unfortunately, the corner between the walls Features 3 and 30 is heavily disturbed by a later pit, probably dug in medieval or Ottoman times. Despite this disturbance, three layers of brick have remained in place (Fig. 6; Plan 1). The bricks all belong to the foundation of the wall and included an undisturbed foundation trench. A painted rim sherd of a pottery vessel found

³⁸³ See Crabb and Hay 2011.

³⁸⁴ Budka 2013a, 80–81.

³⁸⁵ Azim and Carlotti 2012.

³⁸⁶ Azim and Carlotti 2012, 34–36.

³⁸⁷ See Budka 2013a; Budka 2015a; Budka 2015d, 62–63; Budka 2017b.

³⁸⁸ Budka 2015d, 62.

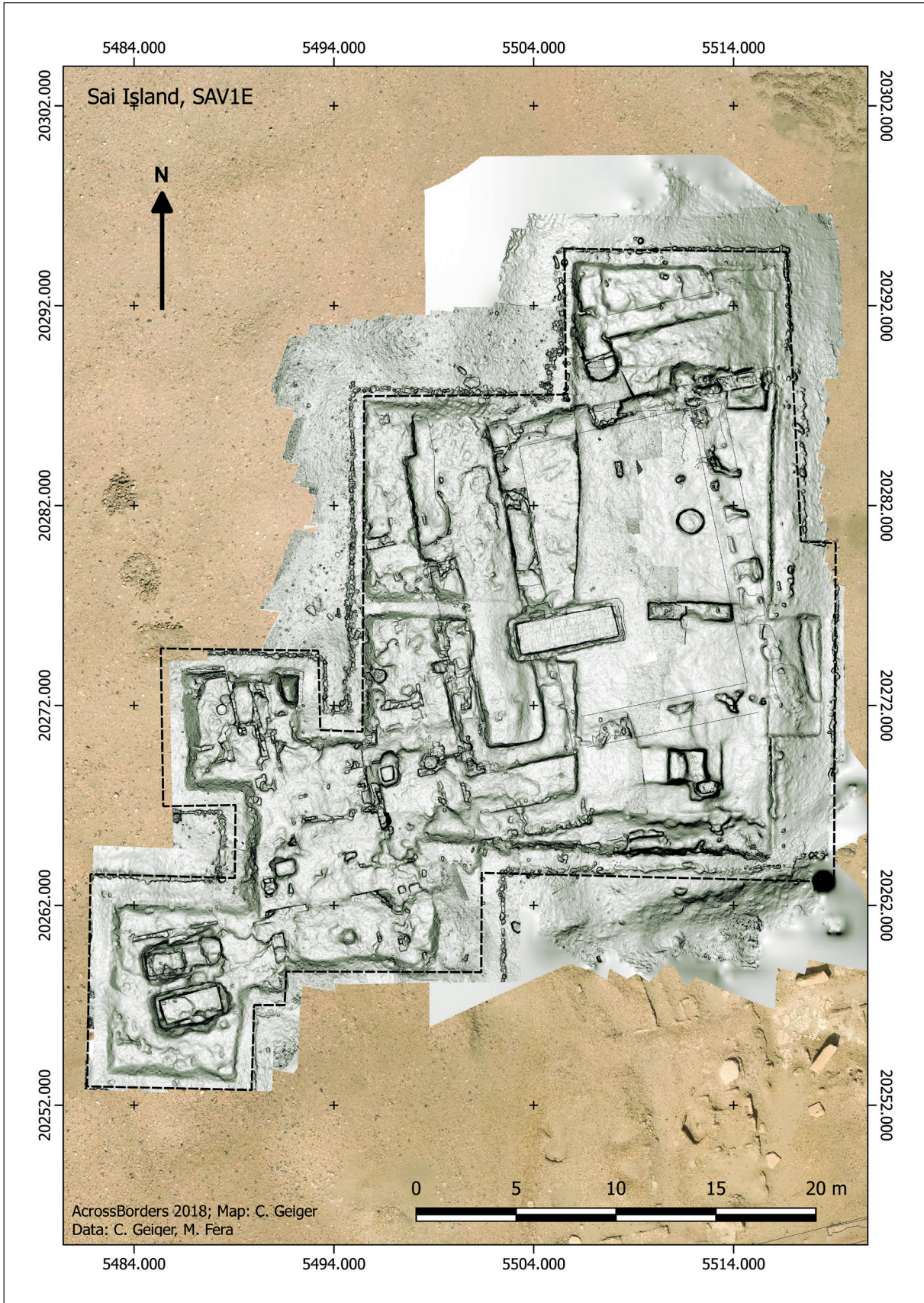


Fig. 5 Excavation squares at sector SAV1 East, all seasons



Fig. 6 Sector SAV1 East, excavated sectors and features, Season 2013

in this foundation trench of Feature 30 (Pl. 39) provided an important dating indication for the building: mid-18th Dynasty, not earlier than Thutmose III (see below).³⁸⁹

The northern wall of the main area exposed of Building A in 2013 is only 75cm wide (Features 13 and 21), whereas the eastern wall (Feature 3) is more solid with a thickness of 106cm, thus fitting nicely to a measurement of two Egyptian cubits. The southern wall (Feature 16) is very badly damaged and has almost disappeared – its foundation trench was exposed in some parts, adjacent to the negative outline of the wall (Fig. 6). Close to the southeastern corner, a layer of bricks was still in place and confirmed the same width as the northern wall – 75cm, representing a two bricks thick wall (built with two stretchers or with two headers and one stretcher in between respectively).

North of the northern wall of Building A, Features 13 and 21, the remains of a coated floor surface were discovered immediately underneath the modern surface in Square 1A (Feature 22). This floor clearly belongs to Building A, attesting a roofed area towards the north of Wall Feature 13 and of the presumed courtyard encompassed by Wall Features 13/30, 3 and 16. Unfortunately, Feature 22 is partly cut by a later pit (Feature 29) and is destroyed in most areas. Feature 29 disappeared into the northern baulk/end of Square 1A and was not fully excavated in 2013 (see below, 2014).

Circular features within the proposed court formed by the outer walls of Building A (Features 13/30, 3 and 16) were visible on the geophysical map. They also showed up in reality: three circular pits were discovered along Wall Feature 3, filled with sandy material and with differing measurements (Features 5, 6 and 17, Pl. 40). They are more or less in line with each other but have irregular intervals between them and are of diverse sizes. The largest one is the storage pit Feature 6 (1.25 × 1.35m, with a depth of 0.45m cut into the gravel). It was found filled with mixed material, including Thutmoside ceramics, but also Ottoman pottery and possibly even more recent material, suggesting a sub-recent disturbance. Feature 17 was discovered within the baulk between Square 1 and Square 2. The baulk was consequently removed, exposing a roughly circular feature (1.45 × 1.25m) cut into the surrounding pebble layer (Feature 4, see Chapter 3.2.4). This pit is thus very similar to Feature 6. Slightly different was Feature 5, located a bit to the north of Feature 6 in Square 1. This feature appeared as an egg-shaped form in Planum 1, measuring 1.10 × 0.85m. It was filled with material from the surface layer Feature 1 and some broken mud bricks were visible on the surface in its southern edge. These bricks of fragmented preservation included burnt mud brick pieces. Like the other pits, Feature 5 was cut into the gravel deposit, but this depression disappeared in Planum 2, leaving only the pile of mud bricks as evidence (see Plan 1).

Opposite of Feature 17, and thus on the other side of the courtyard of Building A, a peculiar structure turned up in the northwestern corner of Square 2, extending into the baulk of the square (Fig. 6). It was recorded as rectangular, only partially exposed Feature 15 which exhibited red bricks as building material. Because of the debris material covering the structure, its cutting into the gravel and especially the presumed red bricks, Feature 15 was thought to be of Post-New Kingdom origin (see below, 2014).

In Square 2, the area south of Feature 16, the southern wall encompassing the courtyard of Building A, was dominated by a large gravel deposit. It was decided to cut through this deposit in order to verify its natural or anthropogenic origin (see Plan 1). Making a trench through the presumed natural gravel deposit in the southeastern corner of Square 2, a small plaster coated installation set directly against the gravel was discovered (Feature 14; Fig. 7 and Pl. 41). Feature 14 still held two complete pottery vessels in situ (Fig. 8), allowing a dating to the early 18th Dynasty rather than the Second Intermediate Period.³⁹⁰ This storage installation is comparable to the silos and installations excavated by Azim around Temple A. Thus, it was already confirmed in the first season of AcrossBorders that the southernmost part of SAV1 East can be interpreted as the continuation of the early 18th Dynasty occupation around Temple A. Within Feature 14 and its surroundings several fragments of Kerma vessels in the local Nubian tradition were found, but the associated Egyptian material allows a close dating of these Kerma sherds to the early 18th Dynasty up to Thutmose III. Consequently, it must be stressed that there is no evidence for a pre-18th Dynasty occupation at SAV1 East: there is no Kerma level predating the Egyptian occupation

³⁸⁹ See Budka 2017g, 434, fig. 7.

³⁹⁰ Budka 2013a, 82; Budka 2017g, 433, figs. 4–5.

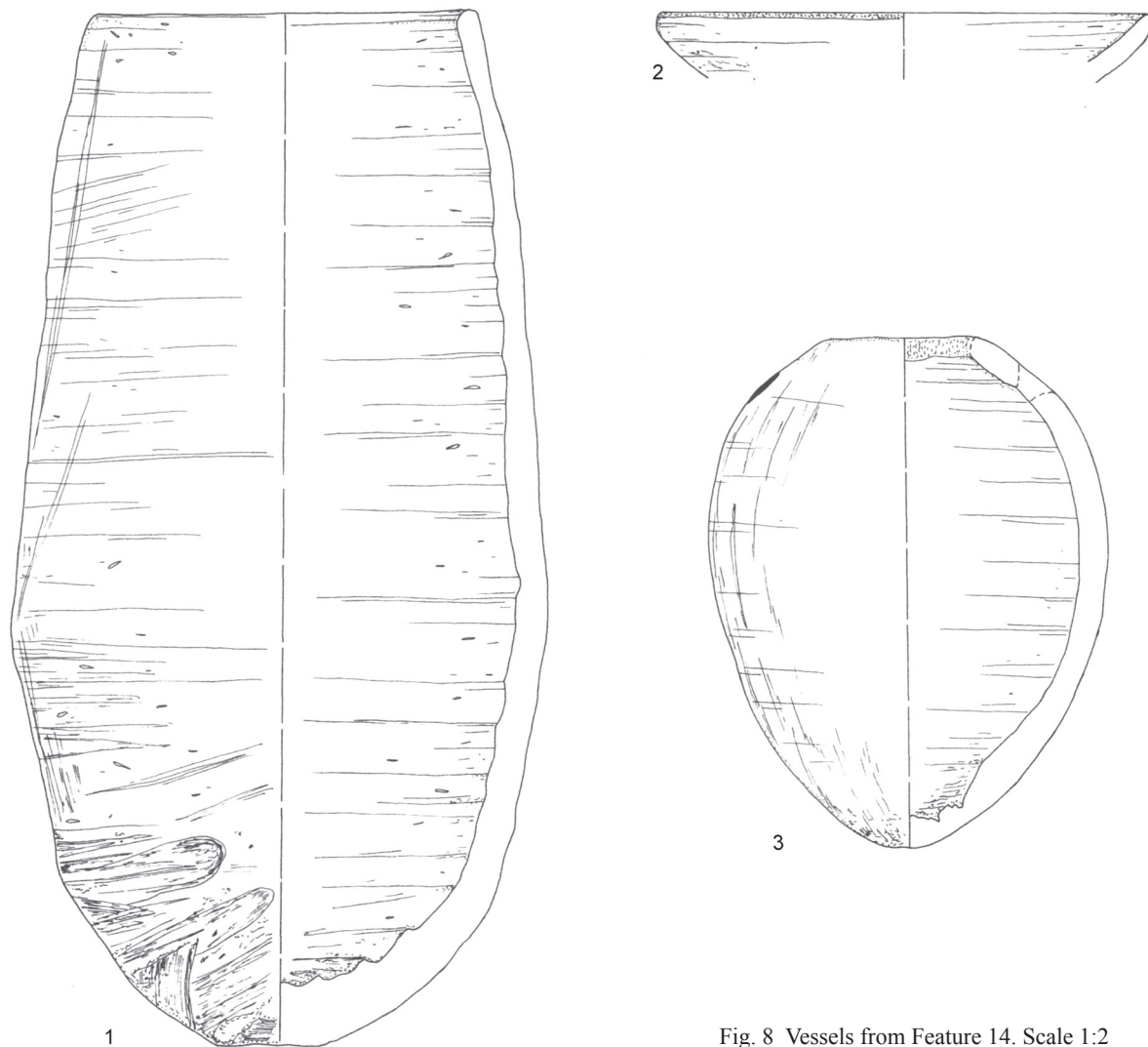


Fig. 8 Vessels from Feature 14. Scale 1:2

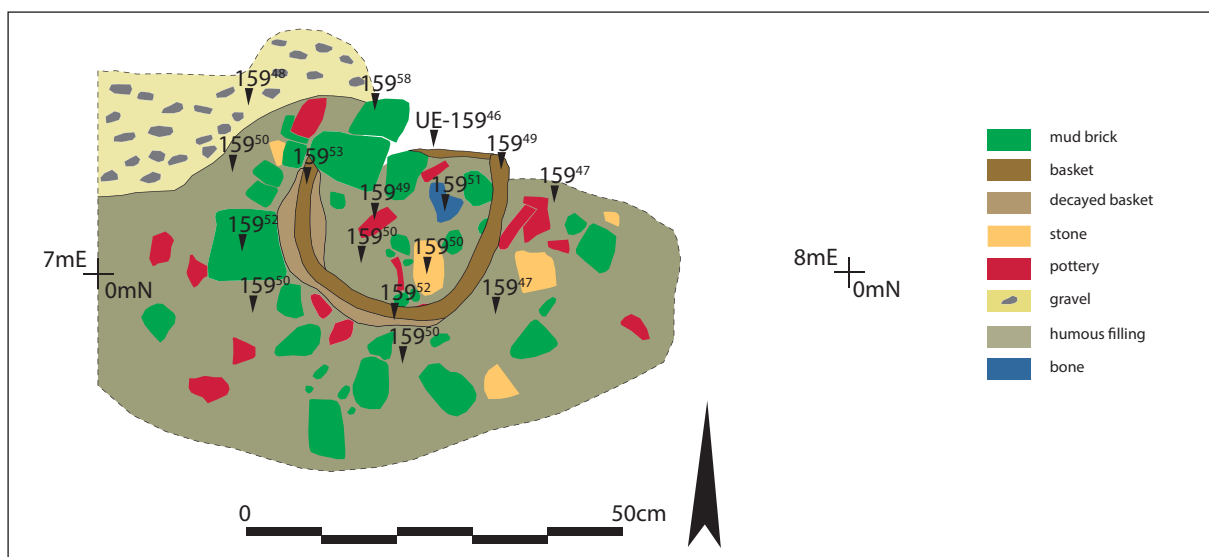


Fig. 9 Basket in Feature 27

of Temple A and thus suggestive of a 18th Dynasty date.³⁹⁴ In 2013, only the upper part of Feature 15 was exposed and thought to be of Post-New Kingdom date (see below). The most important discovery in 2013 was the tracing of Building A, attested generally as negative walls and only partially exposed, specifying clear priorities for excavations in the next season.

Season 2014

Based on the results from the 2013 season, a northern extension (5 × 10m = Square 1B) and two 10 × 10m (Squares 3 and 4) plus one 2 × 10m (Square 4A) western extensions were added to the first two squares at SAV1 East, aiming at understanding Building A better by exposing more of this 18th Dynasty building and its fragmented walls. The documentation technique was modified compared to 2013 and as at SAV1 West the Structure from Motion documentation was introduced (Figs. 10–11).

Similar to Squares 1 and 2, prior to excavation, the surface of the new excavation units was covered with pottery sherds, pebbles, stone tools and some slag. Because of the sloping ground towards the east, the western squares are situated on a higher level than the eastern area excavated in 2013. Immediately

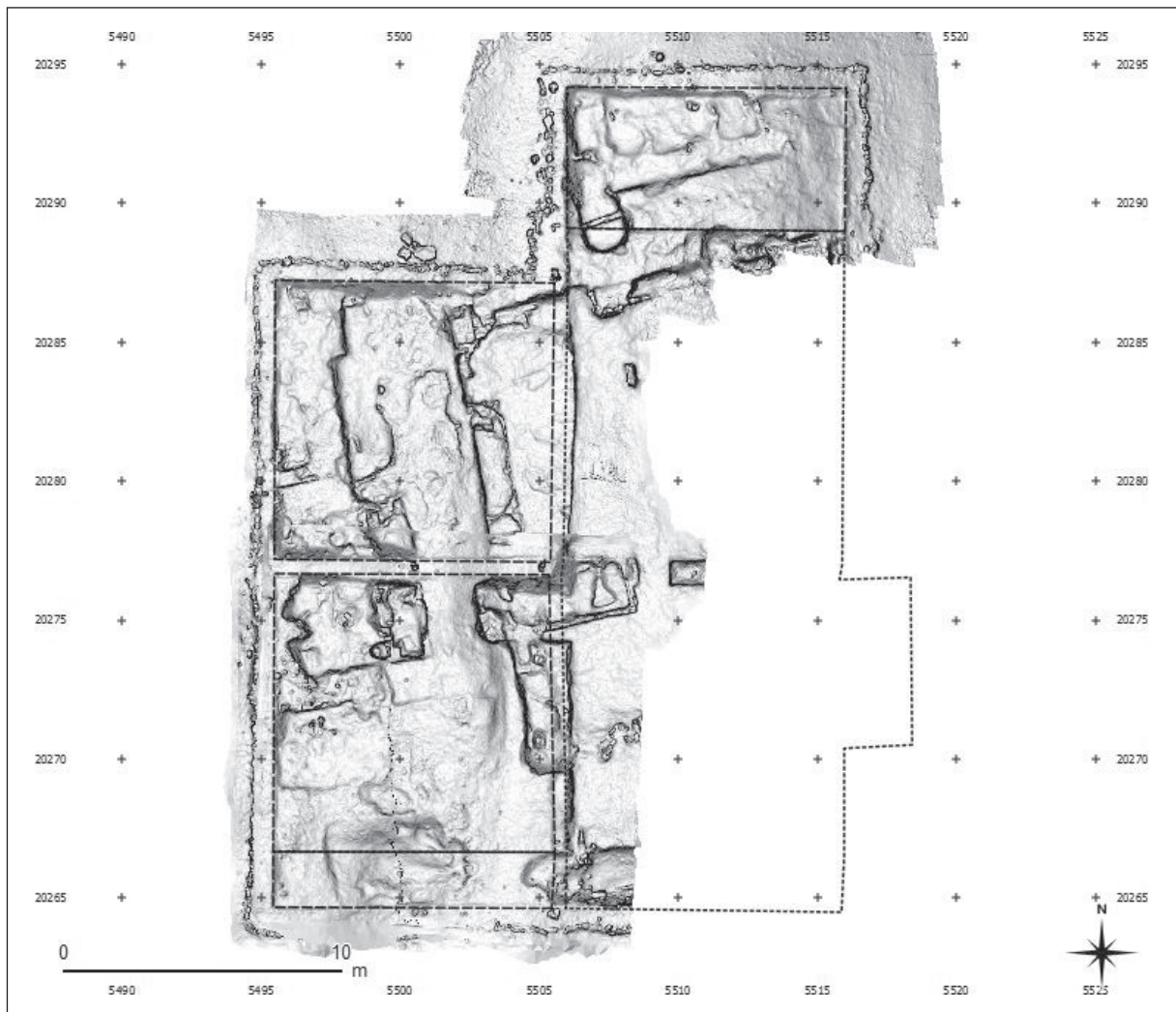


Fig. 10 Sector SAV1 East, excavated sectors, Season 2014

³⁹⁴ Cf. Azim and Carlotti 2012, pl. VII.

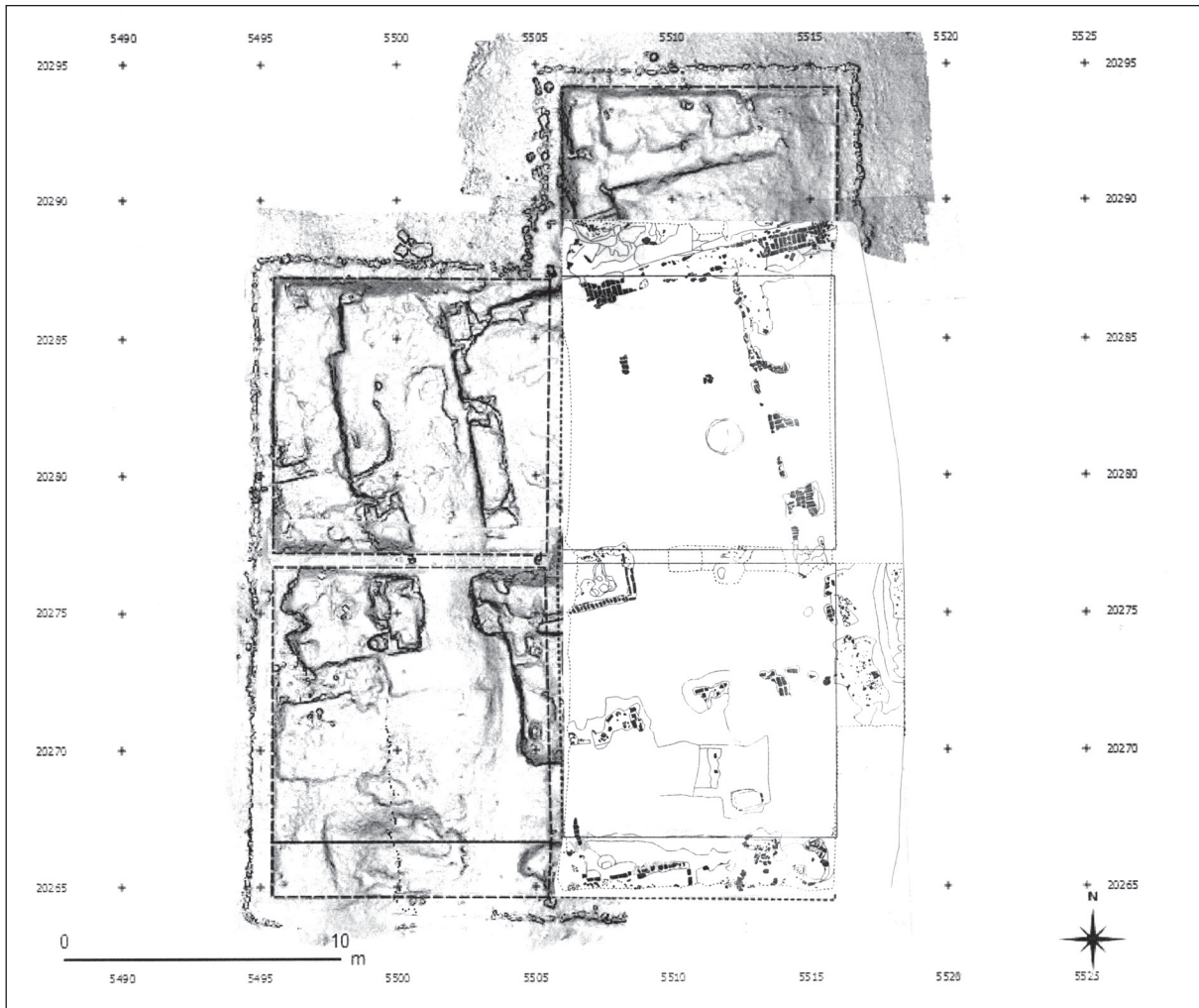


Fig. 11 Plans of excavated sectors at SAV1 East, Seasons 2013 and 2014 combined

below the surface a destruction layer with mud brick fragments, charcoal, pottery and worked stones was detected. This layer varied in its thickness; along the western edge of Square 3 it was only between 5–10cm thick, while in other places more than 20cm of the same material was found.

The progress of the excavation work is again presented from north to south. Square 1B (5 × 10m), a direct northern extension of Square 1A, was partly excavated in order to check the northern area of Building A. Despite of the Post-Pharaonic pitting, substantial remains datable to the 18th Dynasty were exposed. In Square 1B a small, half-brick thick wall (Feature 47) was uncovered at the bottom of a pit dug into the natural gravel (Feature 29 of which the southern part was already exposed in 2013, see above). It seems to be some kind of dividing wall for a storage installation (Fig. 12). Its New Kingdom date remained unclear, however, since it cuts Feature 22 (see Chapter 3.2).

In the centre of Square 1B a negative wall was located (Feature 38) – only the remains of a completely plundered foundation bed have survived. The alignment follows the “northern wall” of Building A in Square 1 (Feature 13/30), suggesting a new part/room of the building, of which Feature 22 exposed in Square 1A could be the pavement. At the western edge of Square 1B some more remaining mud bricks of 18th Dynasty date were found – they once formed a north-south aligned wall (Feature 39), indicating a possible corner of the new room located in this northernmost excavation area of SAV1 East.

Along the northern edge of Square 1B the deposit was very shallow and the surface material very sandy. This part of the site is almost completely destroyed and there are only very limited chances that anything from New Kingdom times has survived in this area. As visible on the plan of the site

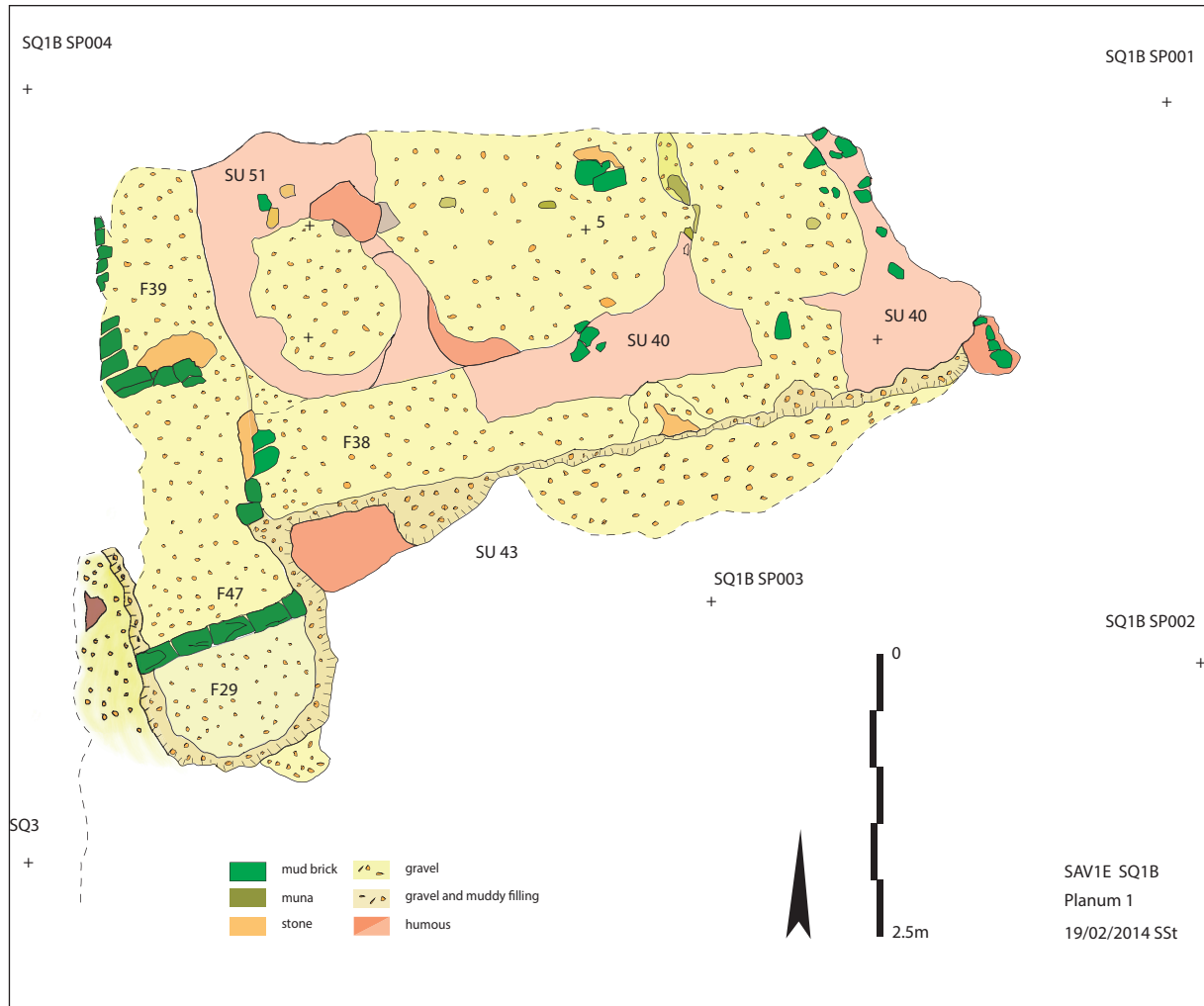


Fig. 12 Square 1B at SAV1 East, Season 2014

(Figs. 10, 12), despite of some small pits and sandy depressions, the remains are actually amorphous and it was decided to focus on areas with more substantial deposits.

The next trench investigated was Square 3 which is parallel to Square 1, located to its west (Fig. 13, Pl. 43). In Square 3, the continuation of Wall 13 was located in the northeastern corner. After approx. 3m this wall joins a north-south aligned one (labelled as Feature 44). This new wall extends towards the north and disappears into the baulk of the square. Towards the south, it was traced as a negative outline and with parts of its foundation trench (Feature 43), running all the way through Square 4 until meeting Wall 16, the southern wall of Building A already exposed in Square 2 in 2013. Wall 16 continued towards the west, into Square 4, and joined a newly exposed north-south wall (Feature 34) in a well-defined corner. The filling of the foundation trenches was not excavated in the southern part of Square 4 in 2014.

Feature 34 and its foundation bed, Feature 33, were partly exposed further towards the west of Squares 3 and 4. They run approximately north-south from Square 3 to Square 4 and are parallel to Feature 44 with its foundation bed, Feature 43 (Fig. 13). Part of a mud floor pavement was still preserved between these walls, connecting these features as once belonging to a single structure, presumably Building A.

Along the western edge of Square 3 several traces of small east-west orientated interior walls were found (e.g. Feature 40, see Fig. 13). The area was also very rich in fragmented schist plates, many of them still covered with plaster/gypsum. It can be proposed that this part of the Building A, probably once the western entrance area, was covered with a schist pavement. This finds good parallels in the southern part of the Pharaonic town where such pavements are attested in large magazines (see below, Chapter 3.2.2).

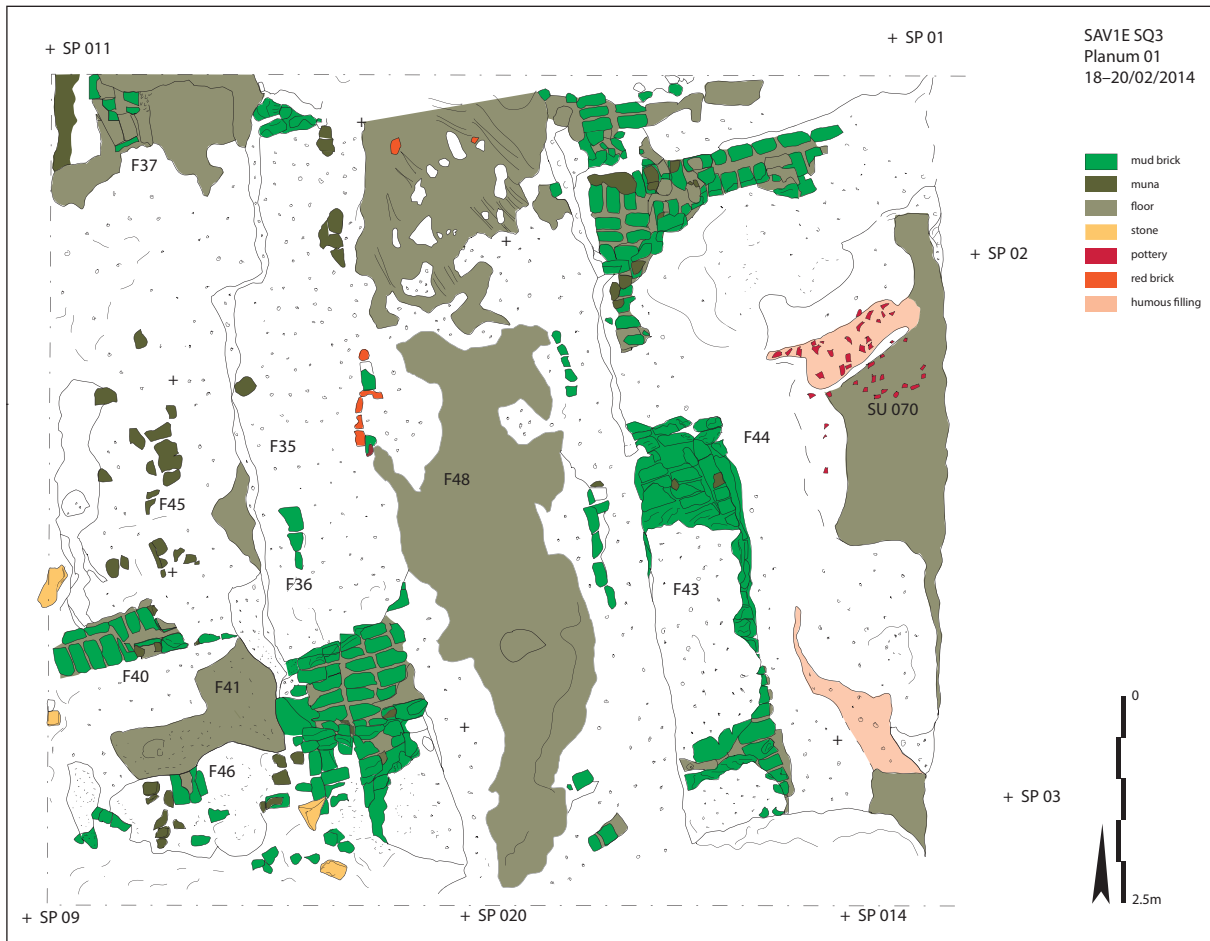


Fig. 13 Square 3 at SAV1 East, Season 2014

Square 4 was not excavated in all its extensions in 2014 (Fig. 14). Its southern part was only cleaned from the uppermost destruction layer. The most interesting find in Square 4 is the western part of Feature 15, originally located in Square 2. Excavated in 2013, the eastern part of this feature was described as an intrusive structure of Post-Pharaonic date and of unclear function (Fig. 11). It is half-brick thick with the inner side lined with red bricks and a plaster coating. The new findings in 2014 changed the picture – Feature 15 has a minimum extension of 5.6m east-west and 2.2m north-south. Its western wall is set against the natural gravel pebble in Square 4 (Fig. 14). In this area a small hole was found directly 20cm above the mud bricks, dug into the gravel. Its diameter is roughly 18cm and it seems to have once held a wooden beam. The southern wall of Feature 15 is preserved to a height of 55cm and the bottom edge has not yet been reached. The complete western part of the structure is still covered with very loose backfill of gravel, mud bricks and ceramics. Interestingly, the ceramics deriving from the newly exposed sections of the walls of Feature 15 are all consistently mid-18th Dynasty in date. All in all, the working hypothesis developed in 2014 was that Feature 15 represents a New Kingdom storage installation of a rectangular shape, with a vaulted roof located below the floor level of Building A (thanks to the findings in Squares 3 and 4). It can be labelled as a cellar and excavation continued in the next season in 2015 (see below). Due to a number of ashy deposits, charcoal and a large number of conical bread moulds, Feature 15 might have been used as bakery or kitchen.³⁹⁵

³⁹⁵ Budka 2014b; see also Budka 2015a, 44–45.

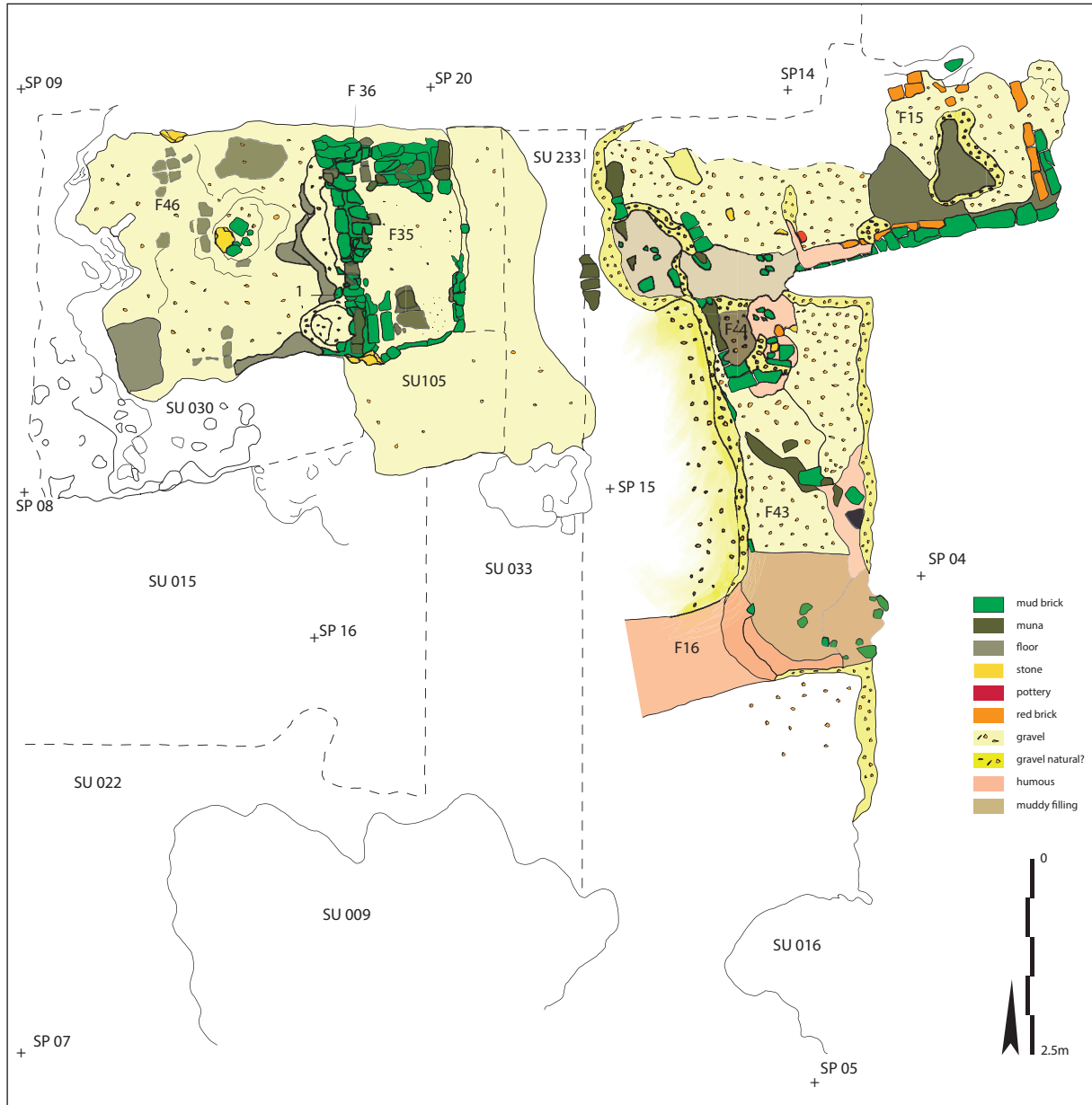


Fig. 14 Square 4 at SAV1 East, Season 2014

As already observed in 2013, there are many Post-Pharaonic pits dug into the area of SAV1 East. Their filling is usually composed of sand, some mud brick debris and mixed ceramics. The filling material suggests a date in Late Christian/medieval times, but also some Ottoman pieces were present. All in all, the destruction layer seems to originate from medieval times; the backfilling of the pits probably happened a bit later.

Season 2015

In 2015 work focused on the western side and the southwestern corner of Building A (Squares 3 and 4) as well as to adjacent southern remains (Square 4 and 4A), which were clearly visible on the geophysical survey map (Fig. 15). The newly excavated upper levels of Squares 4 and 4A were again dominated by a destruction layer with mud brick fragments, charcoal, pottery and worked stones. This layer was up to 40–50cm thick and yielded abundant stone tools, lots of ceramics and other materials. The material is

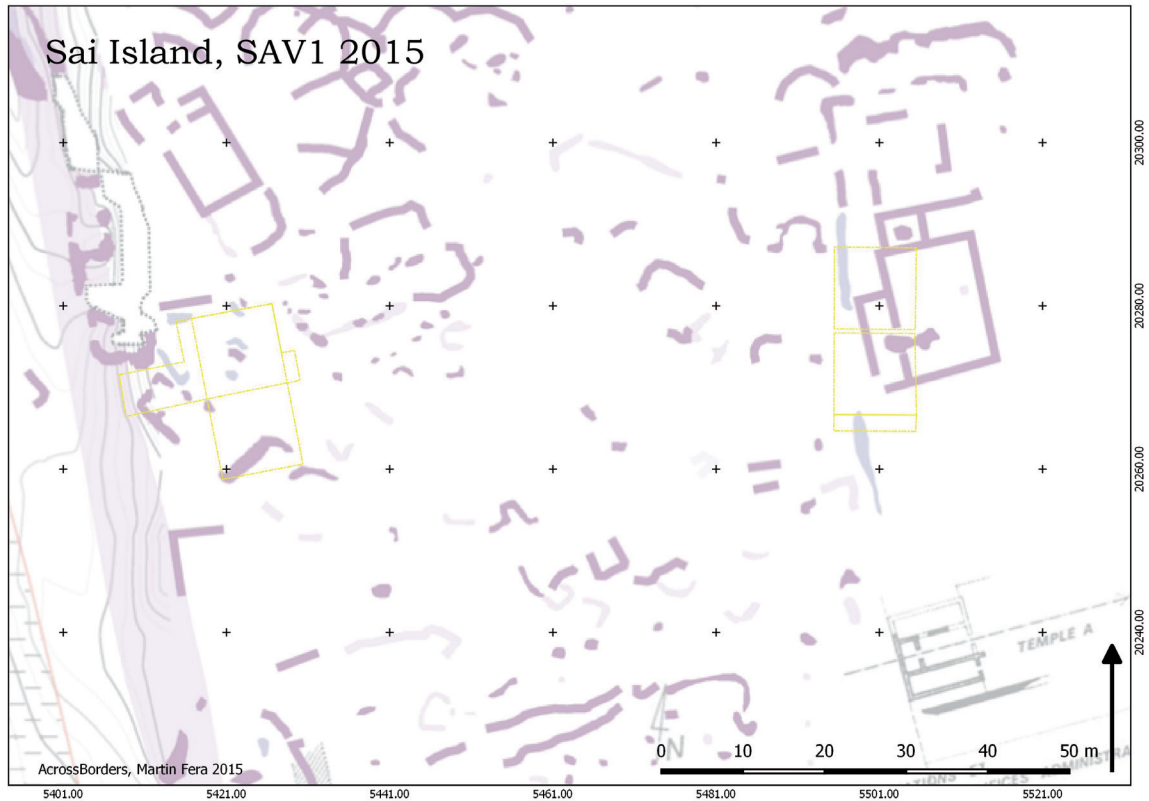


Fig. 15 New Kingdom town of Sai, 2015 excavation areas overlaying the geophysical survey map [with anomalies highlighted in pink]

of a mixed character and the latest finds date to the Ottoman Period (e.g. the wooden furniture fragment or kohl pot stopper SAV1E 1913).³⁹⁶ A large percentage of 18th Dynasty ceramics indicates that the later destruction sits directly on the Pharaonic remains.

Back in 2014, a north-south wall of Building A was traced in Square 3 as a negative outline: Feature 34 and its foundation bed, Feature 33 run approximately north-south from Square 3 to Square 4, meeting Feature 16, the southern wall of Building A. The not-yet cleaned fillings of the foundation trenches Features 33 and 16 were excavated in 2015. Extensions towards the west were also exposed (Fig. 16).

A total of 13 new features were documented in 2015 in SAV1 East – these comprise sections of walls and pavements of Building A (Features 45–49), remains of an earlier occupation (Features 50–56) and a dry-stone terracing wall (Feature 57). Although the state of preservation is rather poor, a sequence of the walls and floors could be established.

Feature 57 is a dry-stone terracing wall, measuring 5.40 × 0.60m, located in Square 4A and Square 2A (Fig. 16, Pl. 44). Unfortunately, it disappears into the southern baulk of SAV1 East (Square 4A). It runs almost east-west and was set against the natural pebble which is sloping towards the south in this part of the site. Feature 57 is comprised of irregular stones, whereby mainly sandstone fragments were used (various sizes from 20 × 24 × 15cm to 50 × 25 × 20cm). On top of the stones some mud bricks were laid in a row of headers. Only in the western part of Feature 57 two layers are preserved, suggesting the size of the bricks (33 × 15 × 10cm). Because some mud pavements are preserved and connected to the dry-stone wall, the

³⁹⁶ See Griffin and Gundlach 2015a.



Fig. 16 Sector SAV1 East, excavated sectors, Season 2015



Fig. 17 Squares 4 and 4A at SAV1 East, Season 2015

relative dating of Feature 57 is secure: it is earlier than Building A (see below and Chapter 3.2.3) and thus most probably dates to the early phase of SAV1 East, Ahmose Nebpehtyra up to Thutmose I.³⁹⁷

As suspected in 2014, the southern wall of Building A was traced as going further to the west: Feature 49 is definitely set against Feature 34 (excavated in 2014 and joining Feature 16). Interestingly, earlier remains were discovered below this part of the mud brick wall. These early occupation remains, consisting of mud floors and half-brick thick walls (Fig. 17), extend towards the south – they follow the natural slope and are set against the gravel deposit. Thanks to (1) the relation with the well-dated walls of Building A, (2) the pottery and (3) the comparison with both our excavation in 2013 in the eastern part of SAV1 East and Azim's excavation around Temple A, a dating for this occupation phase to the early 18th Dynasty can be proposed (see Chapter 3.2.3).

The most interesting structure in SAV1 East was, however, still the subterranean room, Feature 15. Already partly excavated in 2013 and 2014, it was continued to be exposed in 2015 (5.6m × 2.2m × 1.2m). Dug into the natural gravel deposit, Feature 15 represents a large storage installation of rectangular shape, with a vaulted roof now missing. Its inner part is lined with red bricks and red bricks also form the pavement of the structure. Mud plaster was documented on some of the pavement bricks (Fig. 18). Wall 44 which was originally identified south of Feature 15 in Square 2, was found to have been set into the cellar in its western half (Fig. 17, see also below, Season 2016).

³⁹⁷ Budka 2015d, 61–62.



Fig. 18 Feature 15, status 2015

Due to a number of ashy deposits, large amounts of charcoal, hundreds of doum-palm fruits and abundant animal bones with traces of burning, Feature 15 might have been used as a kitchen or a room for food preparation respectively. More than 80 almost intact vessels (with an approximate minimum number of 150 more vessels) were found in the cellar during the 2015 season – the main pottery types are plates and dishes, beakers, storage jars, *zir* vessels and pot stands, thus supporting a connection with food serving. The most important find in Feature 15 was, however, a large set of seal impressions: more than 200 remains of scarab seals on clay sealings were documented.³⁹⁸

Season 2016

Fieldwork in sector SAV1 East continued based on the results from previous seasons.³⁹⁹ The remains pre-dating Building A in the southern part of the site (Squares 4 and 4A) were investigated in detail, especially to establish an absolute date for them. For this, the excavation trenches were extended towards the south and especially towards the west (Squares 4B, 4B1 and 4C). Square 4B measures 6 × 6m and is located to the west of Squares 4 and 4A. Square 4C stretches 12m east-west along the southern border of Squares 4B and 4A and 6m north-south (Fig. 19). Based on the findings in Square 4B, it was decided at a later stage in the season to extend the excavation area with Square 4B1 (Fig. 20). This square measures 3 × 3m and is the northwestern extension of Square 4B.

In general, the western part of Building A was one of the targets for the 2016 season; furthermore, the excavations of Feature 15 were completed. In 2016 work focused in particular on remains unearthed in the new squares 4B, 4B1 and 4C (Fig. 20). The upper levels of these squares were again dominated by a destruction layer of mud brick fragments, charcoal, slag, pottery and worked stones. This layer was up to 40–50cm thick and yielded abundant stone tools, lots of ceramics and other materials. The material is of a mixed character and the latest finds date to the Ottoman period. The large percentage of 18th Dynasty ceramics indicates that the later destruction sits directly on the Pharaonic remains.

A large sandstone block was found dumped between mud brick debris in the southwestern corner of Square 4C. Adjacent to the east of this block the last remains of a large mud brick wall were unearthed,

³⁹⁸ Feature 15 will be published elsewhere in detail, Budka forthcoming b.

³⁹⁹ See Budka 2015a, 40–53.

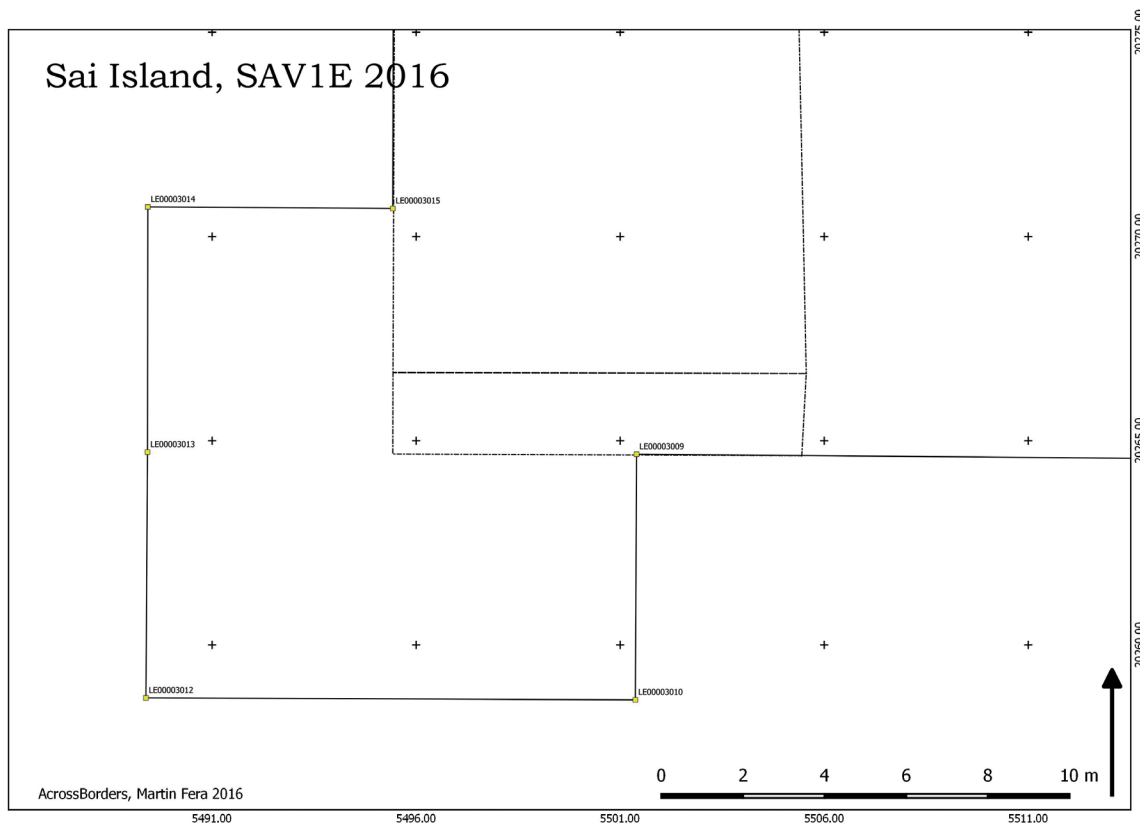


Fig. 19 Location of 2016 trenches at sector SAV1 East 2016 (Squares 4B and 4C)



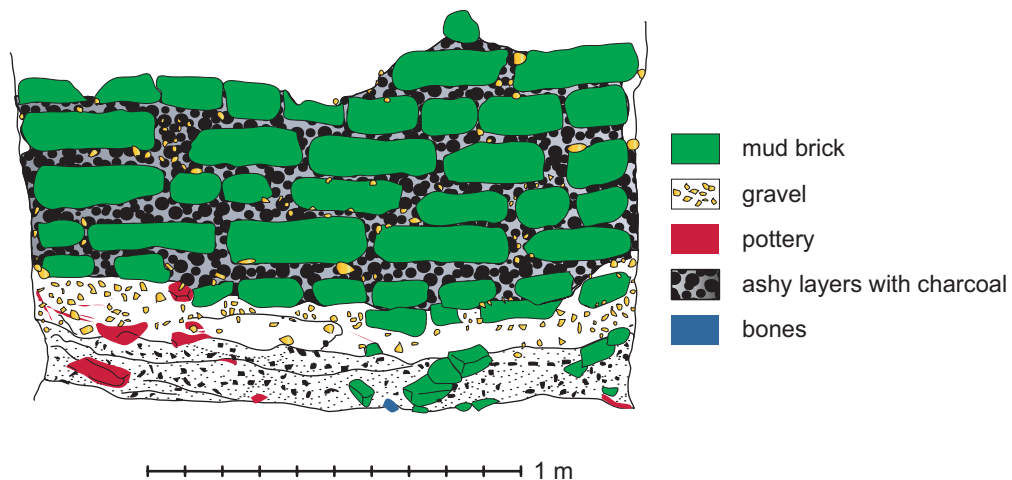
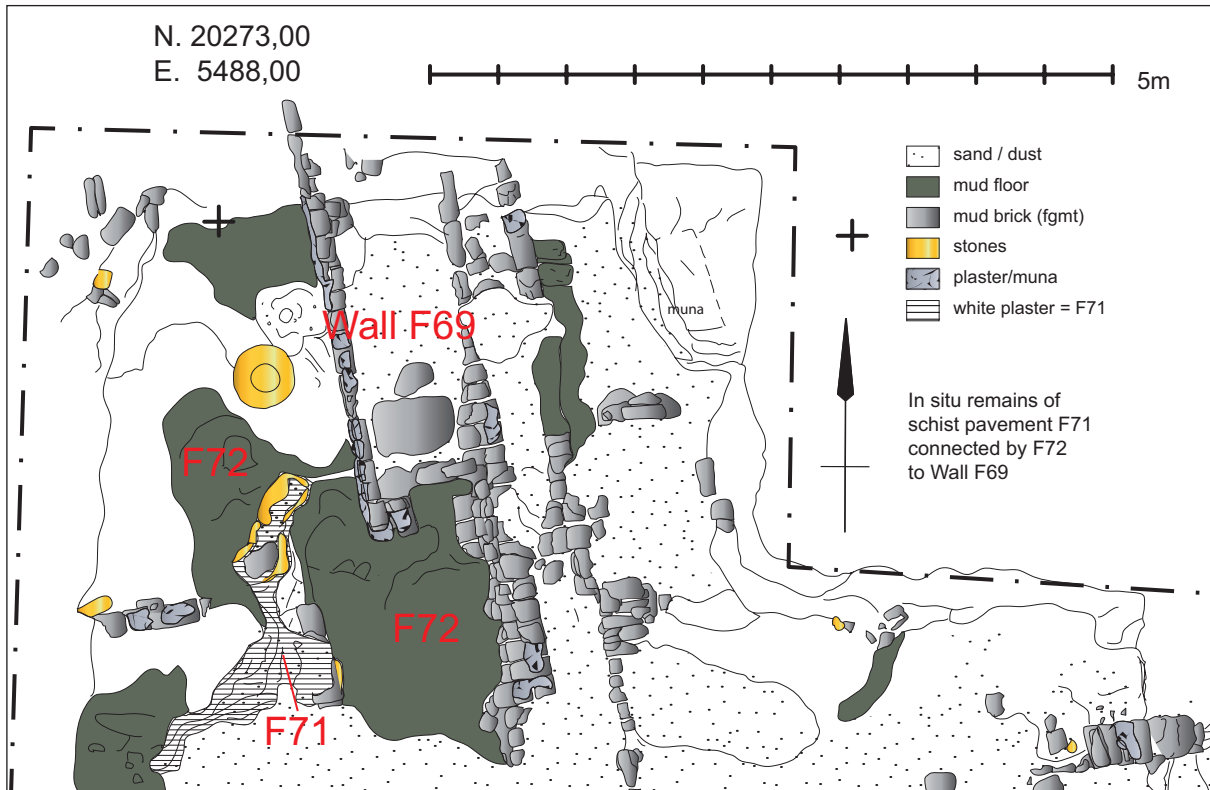
Fig. 20 Sector SAV1 East, excavated remains in Squares 4B, 4B1 and 4C, Season 2016



Fig. 21 Plan of sector SAV1 East, excavated remains, Season 2016

running almost north-south and thus with a similar alignment as Building A located further east. Still attached to the small section of this wall was a plate of schist and large quantities of plaster – in situ remains of a large room with a schist pavement (see below, 2017).

This assemblage finds a correspondence in Square 4B1 (Fig. 21): in an area of dense mud brick debris, the still standing remains of a schist floor were unearthed. The schist plate forms an “island” within the square as all four sides were hacked off during later pitting of the area (Pl. 45). The formerly adjoining 18th Dynasty mud brick wall runs again almost north-south. A re-used sandstone column drum



was found to the west of this wall (Fig. 22). The deposits below the schist plates were sampled for thin section micromorphology (see Chapter 3.7.5).

The most interesting structure in SAV1 East continued to be the subterranean room, Feature 15, which was completely exposed in 2016 (cf. Fig. 18). A section of Wall Feature 44 was set into Feature 15 in a building phase during the mid-18th Dynasty. This wall was sitting on top of the lowermost deposit of Feature 15 and was left standing in 2015. In the 2016 season, the wall and the deposit below it were removed (Fig. 23). Pottery and seal impressions found below Wall Feature 44 of Building A provided firm proof of the dating of the corresponding building phase to the later reign of Thutmose III – this was

an essential confirmation of the previous assumption based on the eastern part of Feature 15 and other walls of Building A (see Chapter 3.2.3).⁴⁰⁰

The pavement of Feature 15 was documented in detail by SfM, orthophoto (Pl. 46) and a drawing in 1:20. Several of the red bricks show finger marks, which find parallels in the mud bricks used in the northern and southern part of the town of Sai Island.⁴⁰¹

Season 2017

Fieldwork in sector SAV1 East continued based on the results from 2013–2016.⁴⁰² In 2017 work focused on remains to be unearthed in the new Square 4D, aiming to test anomalies visible on the map of the geophysical survey conducted in 2011 and to contextualise in situ remains of a schist pavement unearthed in 2016 in Square 4C (Fig. 21). Some cleaning work was also conducted in the southern part of Square 4C (Pl. 47).⁴⁰³

Square 4D is located in the southwestern corner of Square 4C and measures 6.5 × 9m (see Fig. 5). The upper levels of this new square were dominated by a substantial amount of collapsed mud bricks, schist fragments and plaster fragments. Obviously, these are the remains of a large area which was originally covered by a schist pavement and was heavily disturbed during later times. The material is of mixed character and although most of the ceramics date to the 18th Dynasty, medieval material is also present. The large percentage of 18th Dynasty ceramics indicates that the later destruction sits directly on the Pharaonic remains, as is well-attested in other parts of SAV1 East.

A sandy depression was soon noticed in the southern part of the new square (Fig. 24). During excavation it was identified as a large rectangular cellar with an east-west alignment (Fig. 25). The structure measures 3.3 × 1.8 × 2.00m and was cut out of the natural ground, which consists of pebble terraces. The rectangular pit was lined with bricks and once had a vault. Most of the material of the sidewalls and the vault had collapsed and were found as in situ debris within the structure. This collapse had also smashed and buried some pottery vessels on the floor of Feature 83. Based on these findings from the last phase of use, the structure can be dated to the mid-18th Dynasty. All in all, Feature 83 is comparable to Feature 15 in Squares 2 and 4 of SAV1 East.⁴⁰⁴

North of Feature 83 plenty of mud brick remains were found as well as a section of a wall running east-west (Feature 84, Fig. 25). Below the mud brick debris the outline of another rectangular cellar became visible (Fig. 26). This Feature 85 is situated in the northern part of Square 4D. It is much better preserved than Feature 83, but with the same east-west alignment and of similar dimensions (3.7 × 1.5 × 2.05m). Feature 85 is clearly situated below the schist pavement unearthed in Square 4C, continuing into Square 4D – a large amount of collapsed schist plates was recovered in its eastern part (Fig. 27). The vault of Feature 85 is partly still intact, but its sidewalls have mostly collapsed and the corresponding mud bricks filled the western part. Feature 85 is, according to the preliminary assessment of the pottery from its undisturbed lower fillings, contemporaneous to Feature 83.

In the southwestern corner of Square 4C, a large sandstone block was found in 2016, sitting within mud brick debris on top of the in situ remains of the schist pavement (Feature 66). During the 2017 season this stone was removed, turning out to be a re-used block of a sandstone column base with a very fragmented hieroglyphic inscription (SAV1E 2904). It is very likely that this column was originally used in Temple A, located nearby.

Further to the east in Square 4C the substantial destruction layer of mud brick fragments, charcoal, slag, pottery and worked stones was removed. Remains of another mud brick wall in line with Feature 51 (further to the north) were uncovered (Fig. 28). All in all, the earliest remains unearthed in 2017 in

⁴⁰⁰ See Budka 2015a, 43–45.

⁴⁰¹ See Doyen 2017, 26–28.

⁴⁰² Budka 2015a, 40–53; 2017h, 14–21.

⁴⁰³ See Budka 2017c, 71–75.

⁴⁰⁴ Budka 2015a, 44–45.

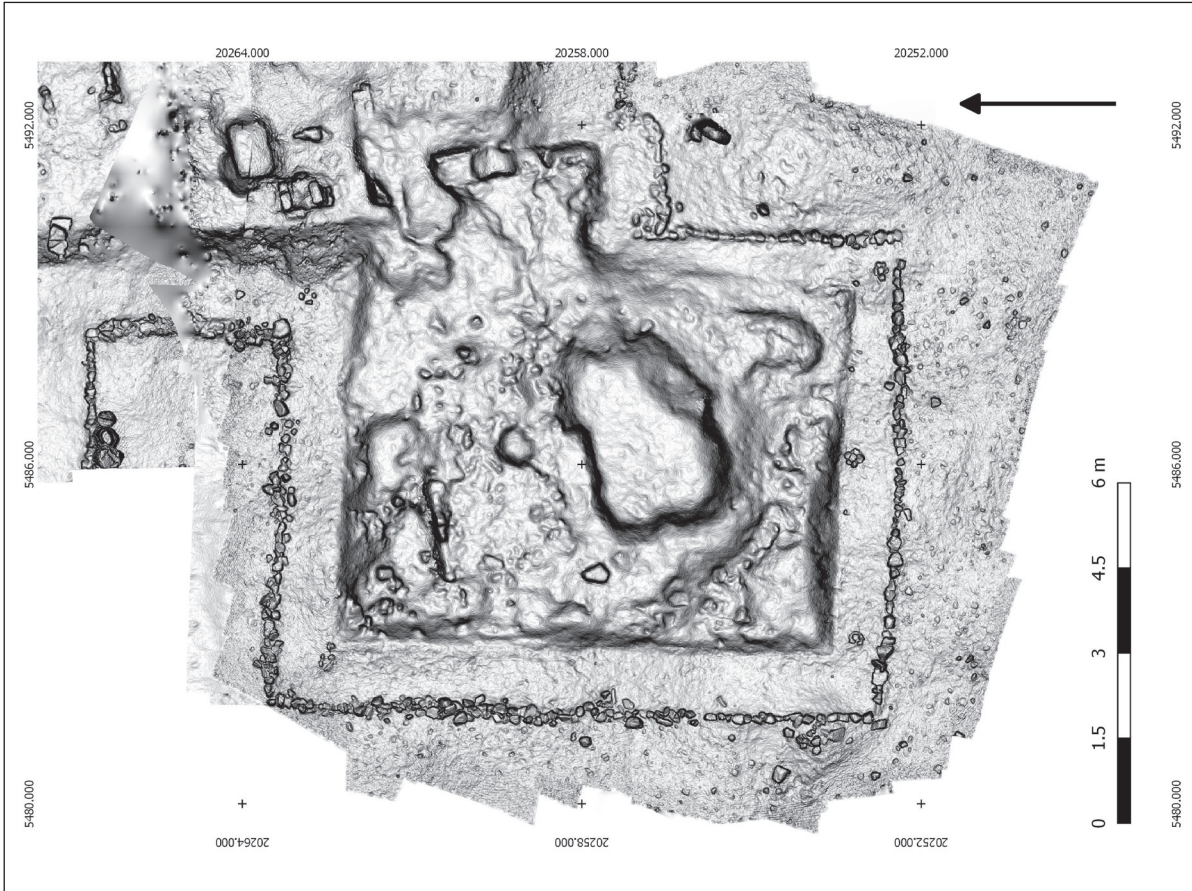


Fig. 25 Square 4D during the process of excavation (26/02/2017)

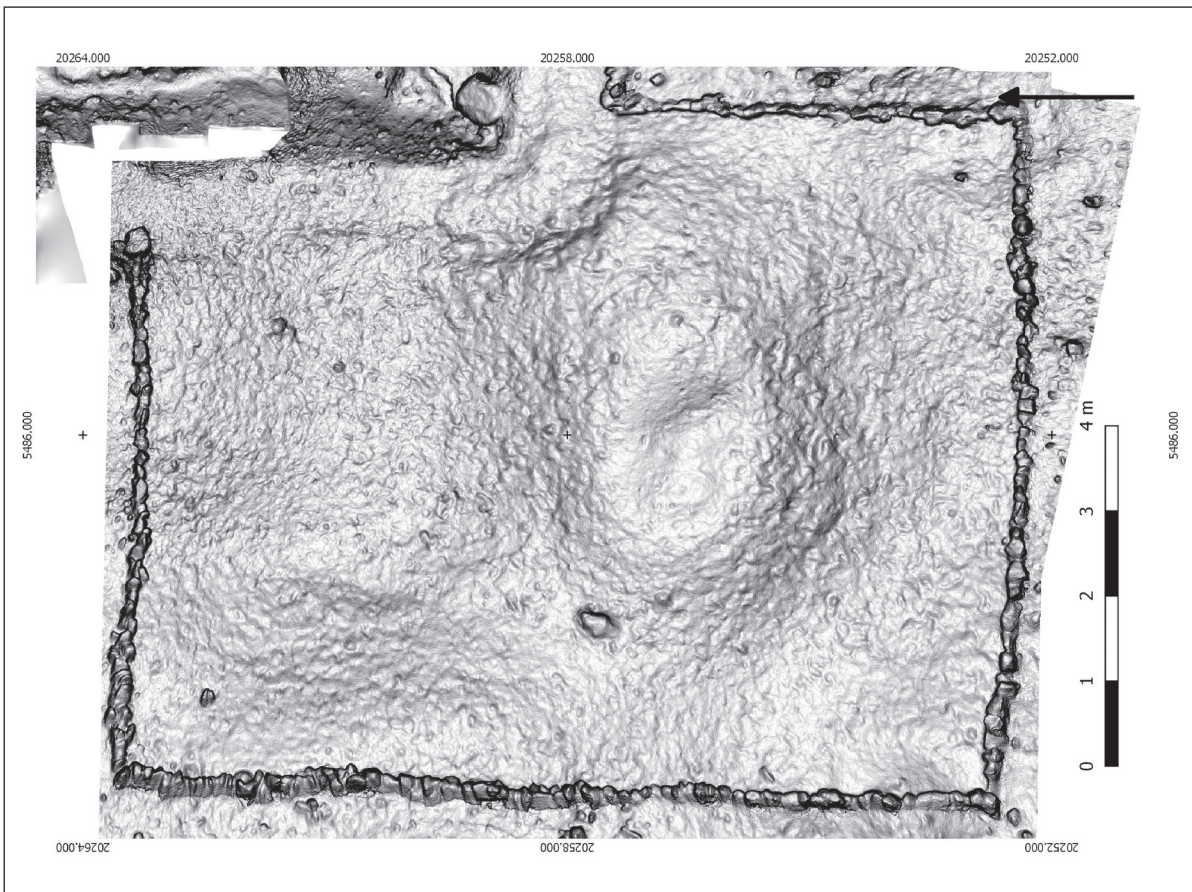


Fig. 24 Square 4D at the beginning of the excavation in 2017 (18/02/2017)

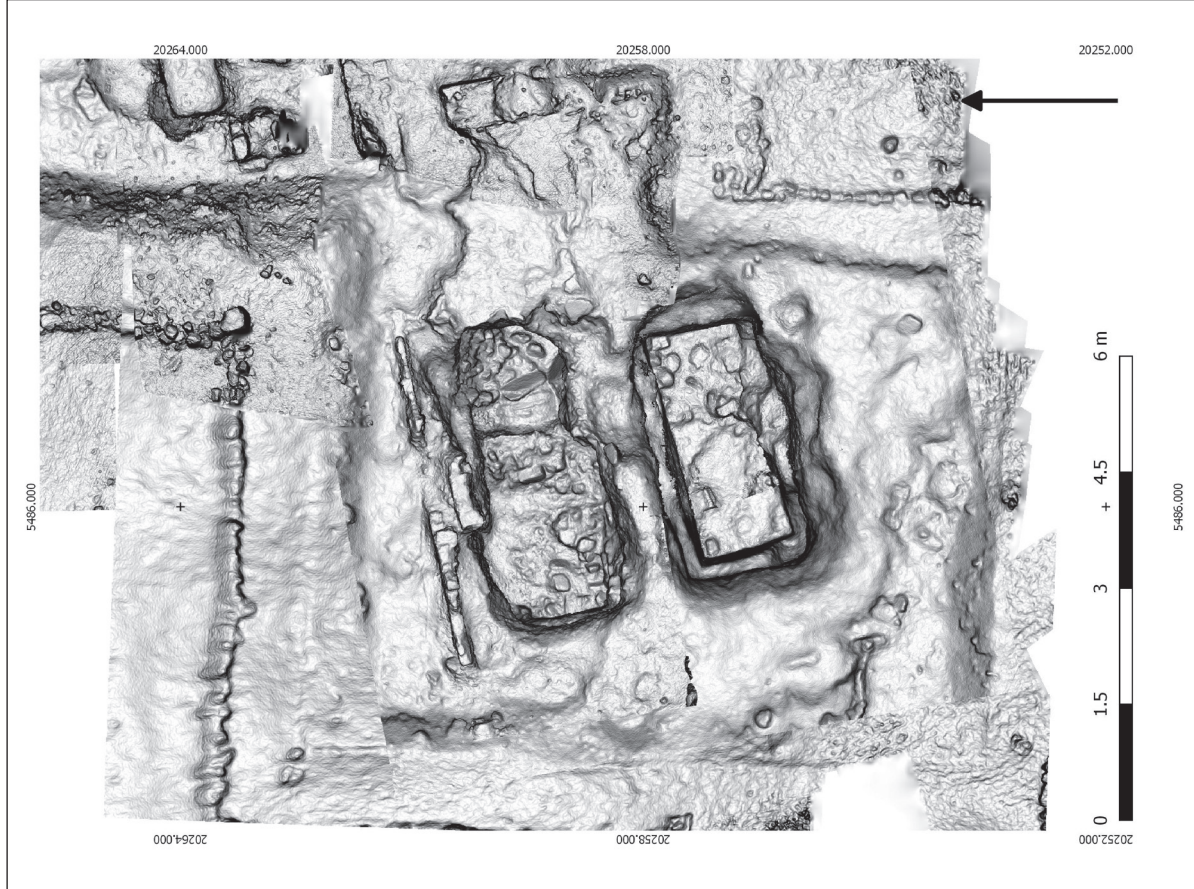


Fig. 27 Square 4D with the collapse of schist plates on top of the vault of Feature 83 (06/03/2017)

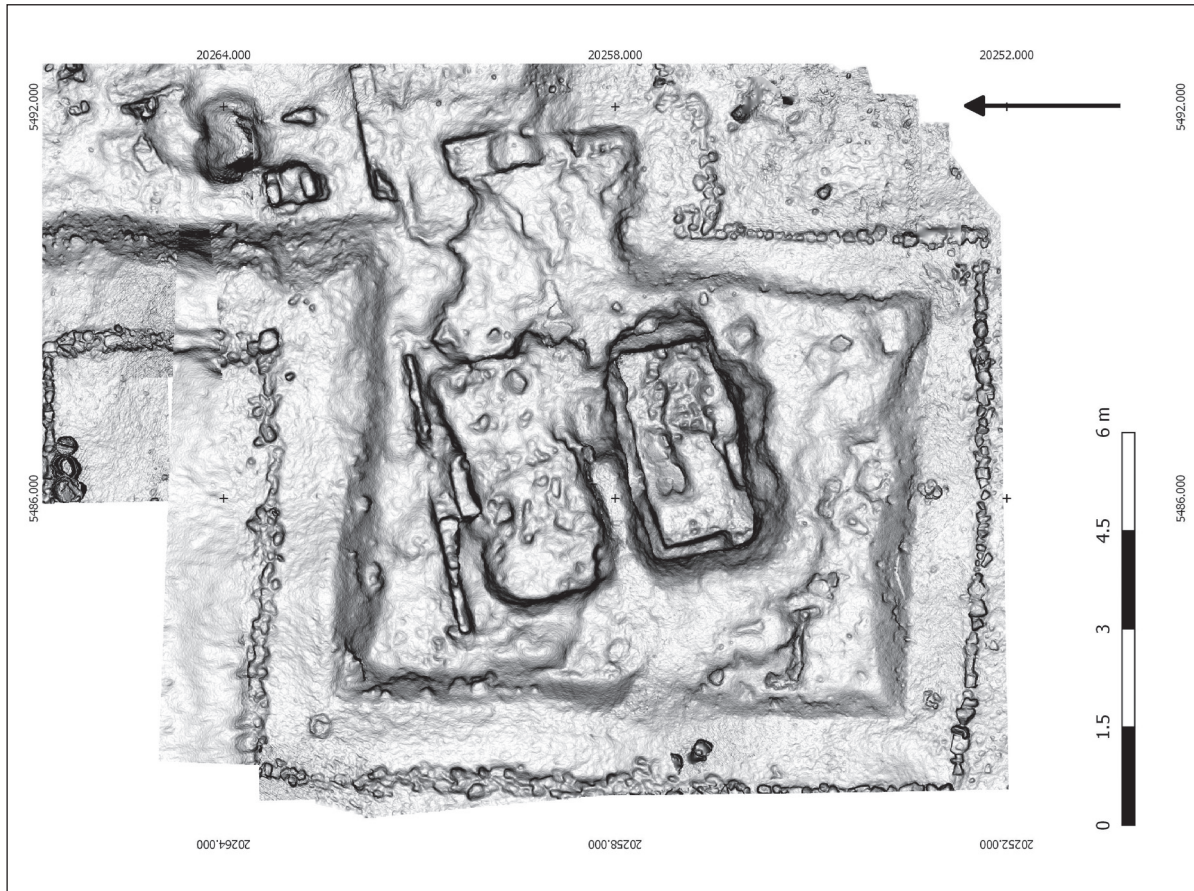


Fig. 26 Square 4D with the outline of Feature 85 visible north of Feature 83 (02/03/2017)

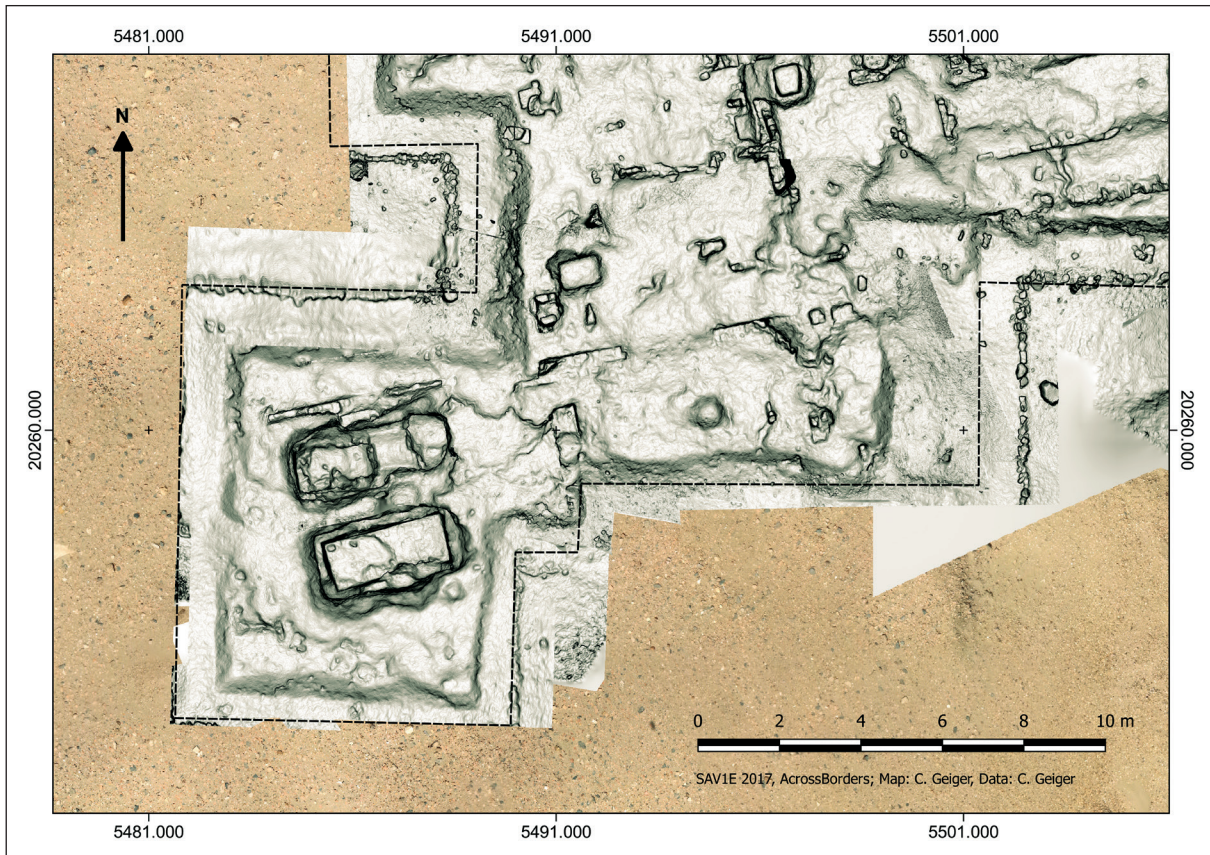


Fig. 28 End status of excavation areas, Season 2017 at SAV1 East

Square 4C all correspond to floors, deposits and wall fragments found in the western and northern parts of the same square in 2016 (see Figs. 21 and 28). They seem to date to the mid-18th Dynasty according to the stratigraphy and preliminary data from the pottery analysis.

3.2.2 Architecture

As outlined in the progress of excavation, several different zones of architectural remains were found in SAV1 East (Fig. 5) which can be differentiated according to building phases. The earliest remains are characterised by silos and storage installations and may be regarded as workshop-like structures. They are located in the southern and western parts of SAV1 East. More substantial mud brick walls are part of Building A, which was probably associated with various magazines and cellars. These architectural remains were predominantly found in the northern, eastern and southwestern parts of SAV1 East. All in all, the dominant features excavated in the eastern sector within the New Kingdom town are of typical Egyptian architecture and compare well to SAV1, the southern part of the town, mainly comprising mud brick walls and mud floors as well as schist pavements and large vaulted magazines and cellars.⁴⁰⁵

The mud brick walls at SAV1 East compare well to the ones excavated in SAV1 North and SAV1 regarding their building technique.⁴⁰⁶ Plaster facing was found at several wall faces (cf. Chapter 5.1) and the bricks are set in mortar (cf. Chapter 5.1). For the latter, the term “muna” was used in the field as well

⁴⁰⁵ These schist pavements in large administrative storage magazines find parallels at the neighbouring site of Amara West, see Spencer 1997, 27–51; Dalton 2017, 360.

⁴⁰⁶ Adenstedt 2016, 23–24; Doyen 2017.

as here in the catalogue of features (Chapter 3.2.4). The horizontal joints filled with *muna* between the bricks are quite regularly 2–4cm thick; the vertical joints differ in sizes.⁴⁰⁷ Due to the generally low state of preservation of brick walls in sector SAV1 East, sometimes bricks were only traceable by means of impressions on *muna* remains. Mud plaster was documented mainly on the more solid walls at SAV1 East, which consisted of rows of stretchers and headers. Like in the other sectors of the New Kingdom town, no wall painting or whitewashing was attested.⁴⁰⁸ The mud floors in sector SAV1 East differ in quality and are in general very similar to those in sector SAV1 North⁴⁰⁹ and also find parallels in SAV1.⁴¹⁰

Small huts and storage facilities

Remains of some mud brick walls, storage installations and silos at SAV1 East closely resemble the small huts, workshop-like structures and storage facilities which were documented by Azim in the zone between Temple A and SAV1 East.⁴¹¹ Since these remains are much better preserved than the newly exposed features at SAV1 East, they may serve as parallels and means to reconstruct the architecture.

Up to six rectangular blocks of mud brick buildings, which predate Temple A (G1–G6), were identified by Azim (Fig. 29).⁴¹² They follow a grid plan and Azim compared them to the Kerma rural settlement of Gism el-Arba.⁴¹³ Unit G1 comprises three contiguous dwelling units covering a total surface of nearly 200m² (11.58 × 17.04m).⁴¹⁴ The individual abutting houses are similar in size to Houses H1–3 of SAV1 (G1a: 63m²; G1b: 50m² and G1c: 84m²).

The planning pattern visible in the zone around Temple A can be compared to what Michael E. Smith called “semiorthogonal urban blocks,”⁴¹⁵ where individual houses abut one or more neighbouring houses, forming dense sectors. Interestingly, almost each house/building excavated by Azim is equipped with a sub-rectangular silo. This high concentration of storage installations seems to find parallels at SAV1 East and might be connected to the function of Sai during this early phase as “bridge head” with a substantial need to equip Egyptian troops with food going southwards.⁴¹⁶

Taking the buildings around Temple A as parallels, a “block”-arrangement also seems very likely for the structures at SAV1 East, but must remain open based on the very limited remains. Features 74 and 75, the sub-rectangular silos, find very close comparisons in G1 (Sil3) and G3 (Sil6).⁴¹⁷ The small egg-shaped plaster-coated storage bin at SAV1 East, Feature 14, compares well to a silo in G3b. At SAV1 East the architecture which once surrounded this installation is completely lost, but can be estimated as half-brick thick walls forming a domestic building.

The state of preservation at SAV1 East makes more general assessments very difficult, but a minimum of four building units – one around Feature 76, one around Feature 75, one including Feature 57 and finally one encompassing Feature 14 – in the southern part of this sector is likely. It is also possible that Feature 57 and Feature 14 are elements of the northern part of G3 (Fig. 30).⁴¹⁸ The east-west orientation of this early phase of domestic buildings around Temple A and at SAV1 East is strikingly similar to the later phase representing Building A, and is also comparable to the Thutmocide structures in SAV1.

⁴⁰⁷ See Adenstedt 2016, 23.

⁴⁰⁸ Adenstedt 2016, 23. White mineral plaster in mud brick buildings of New Kingdom Nubia are generally rare; at the well-preserved site of Amara West only one example in a reception room of a villa was noted, see Dalton 2017, 360.

⁴⁰⁹ Doyen 2017, 52–57 and *passim*.

⁴¹⁰ Adenstedt 2016, 24.

⁴¹¹ Azim and Carlotti 2012, fig. 6a.

⁴¹² Azim and Carlotti 2012, 28–31.

⁴¹³ See Azim and Carlotti 2012, 35, note 59. See also Budka 2015d, 61. Further parallels may also be found in Kerma city, see Bonnet 2014, 20–214.

⁴¹⁴ Azim and Carlotti 2012, 30 (fig. 6a).

⁴¹⁵ Smith 2007, 13.

⁴¹⁶ Cf. Budka 2015a, 51.

⁴¹⁷ Azim and Carlotti 2012, fig. 6a.

⁴¹⁸ See Azim and Carlotti 2012, fig. 6a.

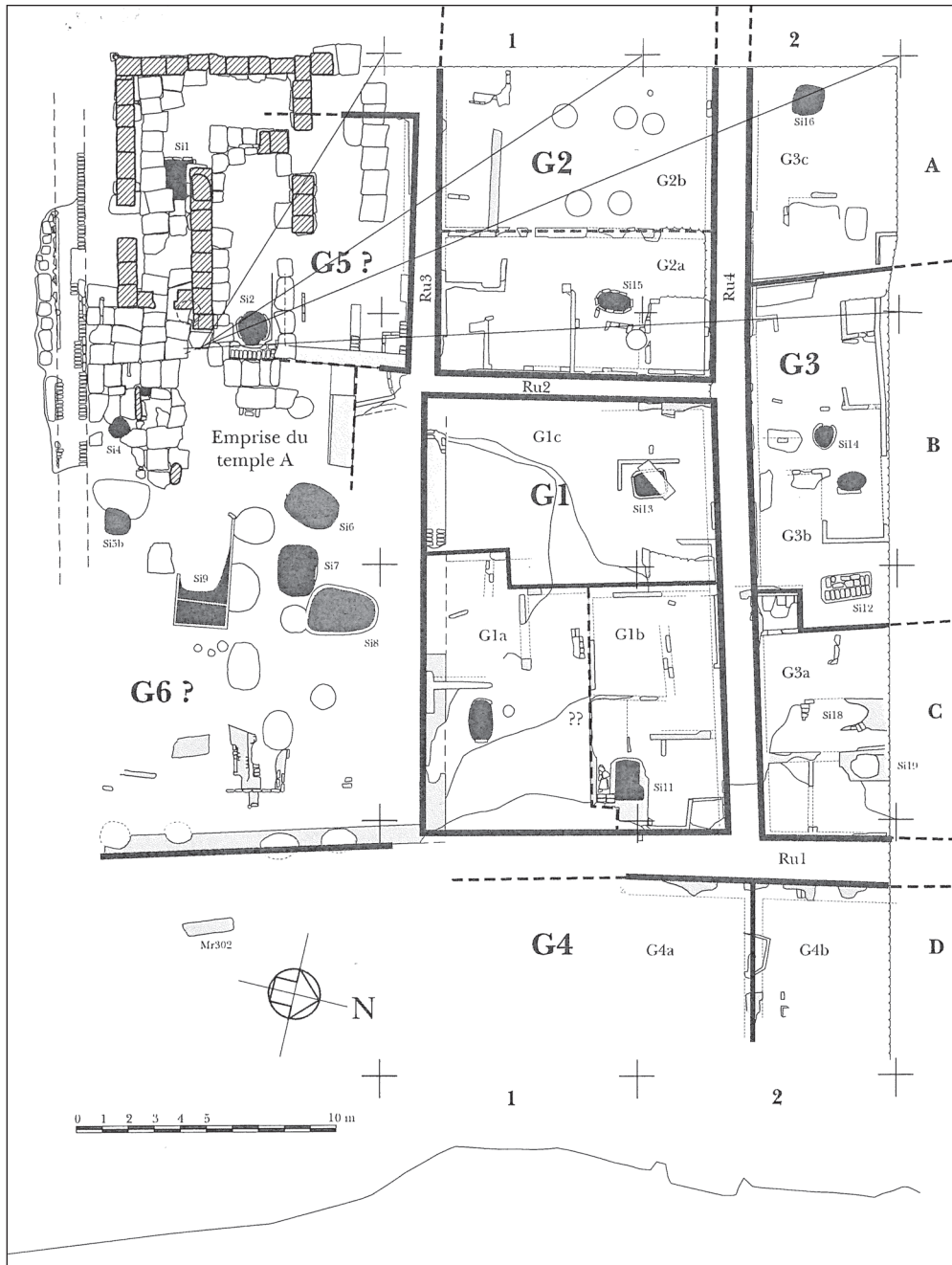


Fig. 29 Architectural remains around Temple A labelled as 'Kerma' by Azim

Feature 57 is securely dated as prior to Building A and most probably dates to the early phase of SAV1 East (see Chapter 3.2.3).⁴¹⁹ This feature, which might belong to G3 partly excavated by Azim, is also interesting in terms of architecture. It is a dry-stone wall which includes mud as building material. The mud bricks on top of the stones of Feature 57 are badly preserved (Pl. 44), but their appearance is very different from the regular freestanding bricks at SAV1 East. A relation to the *galooos* technique of the Kerma culture seems quite likely.⁴²⁰ In no other parts of the New Kingdom town of Sai any dry-stone

⁴¹⁹ Budka 2015d, 61–62.

⁴²⁰ Budka 2018b. For the *galooos* construction technique at Kerma, see Bonnet 2014, 8.



Fig. 30 Overview of SAV1 East with directly adjacent remains unearthed by Azim

walls in combination with mud were found.⁴²¹ This building technique is, however, very well-attested at Kerma itself and might represent the material evidence for cultural entanglement in the early 18th Dynasty on Sai.⁴²²

Especially in this context it is again noteworthy that the general pattern of the earliest architectural phase attested at SAV1 East (e.g. Feature 57, Features 75 and 76, but also Feature 15 in its early stage, see below) already mirrors the east-west orientation of the walls of later buildings of purely Egyptian style comparable to those of SAV1.

Building A

In the northern area of SAV1 East regular outlines filled with sand were revealed just below the surface. These are the negative outlines visible as anomalies on the magnetometer survey map.⁴²³ The Pharaonic building material, once forming the walls, had been removed almost completely (see above). The excavations in 2013 and 2014 confirmed the orthogonal outline, alignment and date of a large structure labelled Building A of the mid-18th Dynasty.⁴²⁴

Building A is built on terraces with the lowest part in the east and much higher levels in the west. The entrance rooms, of which only scarce traces have survived in the western parts of the squares at SAV1 East, were situated in the west, maybe giving access from the main north-south street NS 1 or its respective northern continuation.⁴²⁵ The key element of Building A is a large central courtyard (12.4 × 16.2m) flanked by a lateral room or corridor towards the east and north. The most interesting find was a subterranean room, Feature 15, located in this courtyard (see below). Although the state of preservation is in general very fragmentary, the outline of Building A could be reconstructed and is similar to SAF2, the governor's residence.⁴²⁶

Not only the layout with a central courtyard/hall, small entrance rooms with access from the west and room units to the north and south of the courtyard/hall are comparable between Building A and SAF2, but also the building technique. As recently pointed out by Adenstedt, only two different brick formats were used in the southern sector of the New Kingdom town of Sai, smaller ones at 33 × 15 × 10cm and larger ones at 40 × 19 × 9cm.⁴²⁷ This contrasts, for example, with sector SAV1 North, which exhibits various phases of mud brick buildings and a quite large range of diverse brick formats.⁴²⁸ Similar ranges of brick formats were observed during AcrossBorders' excavations at SAV1 East and SAV1 West (see lists of features for the details). However, the only exception is Building A at SAV1 East – although its brickwork is badly damaged, the bricks used for the main walls of the structure show not only variations of the small format, but also of the large format known from SAV1, the southern sector (see e.g. Feature 16 with small bricks at 34 × 15 × 9cm and 35 × 17 × 7cm and large bricks at 40 × 19/18 × 9cm).⁴²⁹ This is exceptional, because in the southern part of the town the large bricks with a length of 40cm were only used in the governor's palace, SAF2, and the town enclosure.⁴³⁰ The usage of this large brick format in Building A is, therefore, another indication that the structure is contemporaneous to the major buildings in SAV1, including the town wall.

The northern wall of Building A is only 75cm wide (Features 13/21), whereas the eastern wall (Feature 3) is more solid with a thickness of 106cm, thus fitting nicely to a measurement of two Egyptian

⁴²¹ Note, however, that this is a common building technique in Ottoman times; several examples can be found in the southern part of the town/the fortress Qalat Sai.

⁴²² On cultural entanglement, see Chapter 8. For 'Nubian' features in Egyptian towns in Nubia, see Spencer 2010.

⁴²³ Budka 2017e, 429, fig. 1.

⁴²⁴ Budka 2013a, 78–87; Budka 2015d, 62–63.

⁴²⁵ On this street, see most lately Adenstedt 2016, 31–33.

⁴²⁶ Budka 2013a, 85, fig. 12; Budka 2017e, 435; Budka 2018a, 264–266.

⁴²⁷ Adenstedt 2016, 23.

⁴²⁸ Doyen 2017, 24–28.

⁴²⁹ In Budka 2018a, 264 only the two small brick formats were mentioned for Building A as these are the most common ones.

⁴³⁰ Adenstedt 2016, 23.

cubits. The southern wall (Feature 16) is very badly damaged and has almost disappeared. With one layer of bricks still in place, the same width as the northern wall can be confirmed with 75cm, built with two stretchers or with two headers and one stretcher in between, including the large brick format mentioned above.

In terms of dating, not only the orientation, layout and building techniques of Building A were significant, but also finds associated with the walls. Ceramics from the foundation trench of one of the walls of Building A allow a dating for the building to the 18th Dynasty, probably not earlier than Thutmose III, including several building phases.⁴³¹ Various phases within the mid-18th Dynasty are, for example, attested by Feature 15 and also by Feature 29 in the northern part of Building A. This storage pit cuts Floor Feature 22, which seems to be connected with the earliest phase of the building.

All in all, Building A at SAV1 East belongs to the major remodelling of Sai during the reign of Thutmose III. It is contemporaneous with Temple A and the structures in the southern part of the town including SAF2 as well as the town wall. Building A can be regarded as significant for reconstructing the internal structure of the New Kingdom town of Sai, since it shows that the orthogonal layout known from the southern part of the town extended further to the north.⁴³² A more detailed architectural assessment of Building A and its reconstruction will be presented in connection with the publication of Feature 15.⁴³³

*Cellars and magazines*⁴³⁴

Dug into the natural gravel deposit, several large New Kingdom storage installations of rectangular shape with a vaulted roof were discovered in SAV1 East.⁴³⁵ One, situated in Building A, was completely excavated in 2016: Feature 15 (5.6 × 2.2 × 1.2m) yielded a large quantity of seal impressions, complete pottery vessels and other finds.⁴³⁶ Ashy deposits, large amounts of charcoal, hundreds of doum-palm fruits, abundant animal bones with traces of burning, more than 80 almost intact vessels and c. 200 remains of scarab seals on clay sealings make Feature 15 a context rich in information. The sealings are of special importance, being the first corpus of sealings ever found within the New Kingdom town of Sai and comprising a large number of royal names (Amenhotep I, Hatshepsut and Thutmose III) as well as various floral decorations in a style typical for the Second Intermediate Period.⁴³⁷

In the westernmost area of SAV1 East in situ remains of rooms covered with schist pavements were found in 2016 and 2017.⁴³⁸ These pavements seem to be connected with large vaulted cellars similar to Feature 15. In Square 4D two large rectangular cellars were found in 2017, Features 83 and 85.

Feature 83 measures 3.3 × 1.8m and has a preserved height of 2m. It was cut into the natural ground consisting of pebble terraces. Its rectangular outline was lined with mud bricks, the roof was formed by a vault. Of the latter, the lower part and the negative of the eastern narrow side have survived. A substantial amount of collapsed bricks was found in large piles on top of the floor. Interestingly, most of the bricks show marks (parallel longitudinal grooves), known from other contexts in the New Kingdom town.⁴³⁹ It is remarkable that these contexts with such brick marks (the northern enclosure wall, building units of Level 3 at SAV1 North and structures from the southern sector⁴⁴⁰) can all be dated to Thutmoside times. Such a dating for Feature 83 is further supported by smashed pottery vessels which were found below the collapsed bricks on the floor. They clearly belong to the latest phase of use of the structure and

⁴³¹ Budka 2013a, 84

⁴³² Budka 2015a, 51.

⁴³³ Budka forthcoming b.

⁴³⁴ These structures will be published in detail elsewhere: Budka forthcoming b.

⁴³⁵ Budka forthcoming b.

⁴³⁶ Budka 2015a.

⁴³⁷ Budka 2015a, 45.

⁴³⁸ Budka 2017c, 73.

⁴³⁹ Budka 2017c, 73.

⁴⁴⁰ See Azim 1975, 102, pl. 6; Budka 2017d, 24–26.

can be dated to the mid-18th Dynasty.⁴⁴¹ Therefore, Feature 83 is comparable to the considerably larger Feature 15, also regarding its phases of use.⁴⁴²

Feature 85 is situated in the northern part of Square 4D, next to Feature 83 (see Fig. 28). It is much better preserved than the southern cellar, and has the same east-west alignment; it is of similar dimensions (3.7 × 1.5 × 2.05m) and has the same building technique. Feature 85 seems to be associated with Wall Feature 84 as well as with the recovered schist pavement further eastwards, Feature 66. Whereas the upper part of Feature 83 was extensively disturbed, Feature 85 is clearly situated below the schist pavement unearthed in Square 4C – a large amount of collapsed schist slabs was recovered in its eastern part, complementing the slabs still in situ within the pavement above. Its central part is still intact including the vault, but the eastern and western ends have collapsed, including the sidewalls. The corresponding mud bricks in particular filled the western part, again featuring the parallel longitudinal grooves. Feature 85 is, according to the preliminary assessment of the pottery from its undisturbed lower fillings, contemporary with Feature 83 (and Feature 15), with material from the abandonment phase datable to the mid-18th Dynasty.

The large cellars and magazines at sector SAV1 East illustrate that, as is a common feature of the so-called temple towns, domestic space is quite limited, but much room is occupied by storage facilities, magazines and cellars.⁴⁴³ Located close to Temple A, the two cellars (Feature 83 and 85) discovered below the schist floors of large rectangular magazines further support the functional interpretation of SAV1 East.⁴⁴⁴ This part of the fortified town of Sai was clearly related to the storage and distribution of products, thus possibly in close connection with the temple. SAV1 East, therefore, nicely ties in with the southern sector SAV1 and exemplifies the main characteristics of Sai as a planned Egyptian temple town. Parallels, presumably of a later date, can be found in the temple town of Sesebi⁴⁴⁵ and at Quban.⁴⁴⁶ The best preserved cellar at SAV1 East, Feature 15, illustrates furthermore the strong links between these storage installations and the local temple – the main phases of use of Feature 15 mirror the building phases of Temple A and its surroundings (see below, Tab. 10).⁴⁴⁷ All in all, in terms of architectural remains it can be concluded that sector SAV1 East has much in common and shows many parallels to the southern area of the town, SAV1, excavated by Azim in the 1970s.⁴⁴⁸

3.2.3 The main building levels of SAV1 East

Thanks to stratigraphic sequences, especially from Feature 15 but also from associations between various features, several phases of use can be reconstructed for Building A and SAV1 East.⁴⁴⁹ On a broad scale, three main phases can be differentiated at the eastern sector of the New Kingdom town (Tab. 10):

Building phase	Description	Date
Phase 1	Construction of cellar	Early 18 th Dynasty to Hatshepsut
Phase 2	Use as storage place/magazine	Hatshepsut, early-mid Thutmose III
Phase 3	Integration into Building A (Wall Feature 44 inserted)	Late Thutmose III/Amenhotep II
Phase 4	Re-filling/abandonment	Amenhotep II to Amenhotep III

Tab. 10 Building phases of Feature 15 at SAV1 East. Adapted after Budka 2015a, 45, tab. 1

⁴⁴¹ Budka 2017c, 73.

⁴⁴² See Budka 2015a, 43–45.

⁴⁴³ See Adenstedt 2016, 54, fig. 16; Budka 2017c, 75.

⁴⁴⁴ Budka 2017a, 73–75.

⁴⁴⁵ Blackman 1937, 149–150; Fairman 1938, 152.

⁴⁴⁶ Emery and Kirwan 1935, 36–37, fig. 12.

⁴⁴⁷ Azim and Carlotti 2012, 39–46; see Budka 2015a and Budka 2017b, 54–55.

⁴⁴⁸ See Azim 1975; Adenstedt 2016.

⁴⁴⁹ Budka 2015a, 45.

Phase A: early remains with workshop-like structures and silos, the continuation of the building units documented by Azim around Temple A (early 18th Dynasty)

Phase B: more substantial mud brick walls with storage installations, magazines and Building A (Hatshepsut – Thutmose III); comparable to SAV1, the southern sector

Phase C: continuous use of the area and additions/modifications (post-Thutmose III; see phases of Temple A)

Phase A

The earliest remains at SAV1 East were unearthed in the southern part of Square 2 and 2A as well as in Squares 4, 4B and 4C. This phase and its architecture can be connected to the early occupation remains with a number of small huts, workshop-like structures and storage facilities unearthed by Azim in the zone between Temple A and SAV1 East. In his publication of the structures, Azim could show that the remains are earlier than the stone temple, thus pre-dating Thutmose III.⁴⁵⁰ Azim proposed a dating prior to the New Kingdom, based on Kerma ceramics found associated with the structures and through comparison with similar structures at the Kerma village of Gism el-Arba.⁴⁵¹

The new evidence from SAV1 East allows linking the earliest levels there with this horizon around Temple A, thought to be of Kerma origin (Fig. 30). As mentioned above, ceramics from various contexts at SAV1 East allow a more precise dating of this early level, Phase A. For example, the storage bin Feature 14 and its pottery as well as other findings can be dated to the early 18th Dynasty. No evidence for pre-18th Dynasty occupation at SAV1 East was unearthed and this also applies to the zone around Temple A. In this part of the New Kingdom town, there clearly are no Kerma levels predating the Egyptian occupation.⁴⁵² The earliest remains in the as yet exposed parts of the town, comprising primarily workshop-like structures and storage facilities, date back to the time span of Ahmose Nebpehtyra up to Thutmose I. The structures around Temple A seem to be contemporaneous with Level 5/4 at SAV1 North.⁴⁵³

Phase B

Several phases of use can be reconstructed for Feature 15: most importantly, a section of wall 44 is set into Feature 15, definitely later in date and sitting on top of the lowermost deposit of feature 15. Feature 15 must, therefore, have already been in place before the main north-south wall of the courtyard of Building A, Wall Feature 44, was built. Based on the seal impressions and the ceramics, Feature 15 was originally set up not later than in the reign of Hatshepsut, remaining in use as a subterranean room/magazine/kitchen until Thutmose III. Changes happened in the later phase of Thutmose III and maybe even Amenhotep II: Building A was extended and Wall Feature 44 was set into Feature 15. A collapse of the section of Wall Feature 44 into Feature 15 must have occurred a bit later, presumably before or during the time of Amenhotep III. These phases of use of Feature 15/Building A correspond well with the building phases of Temple A.⁴⁵⁴

It is particularly significant that Feature 15 was integrated into Building A in a later phase (Phase 3 or a transition phase 2/3) – the cellar obviously already existed in an earlier phase and was well in use during the time of Hatshepsut (Phase 2). It is tempting to associate its construction with the early strata in SAV1 East and around Temple A comprising storage facilities from the beginning of the 18th Dynasty – however, it was probably slightly later in date as the earliest findings for its real use seems to date to

⁴⁵⁰ Azim and Carlotti 2012, 34–36.

⁴⁵¹ See Gratien 1995, 5–65; Gratien et al. 2003, 29–43; Gratien et al. 2008, 21–35; Azim and Carlotti 2012, 35, note 59; see also Budka 2017e, 431–432.

⁴⁵² Budka 2017e, 432.

⁴⁵³ See Budka 2015d; Budka 2017a, 19–21.

⁴⁵⁴ Cf. Azim and Carlotti 2012, 39–46.

Hatshepsut. Thus, at the beginning of the 18th Dynasty a number of rather short-term building phases and complex modifications of the area along the eastern side of the New Kingdom site seem likely.

Phase C

The building processes of Feature 15 and especially the debris from Wall Feature 44 in the cellar as well as its filling material clearly attest to building phases in the second half of the 18th Dynasty and the late 18th Dynasty. Within Feature 15, Phase 4 was dated to Amenhotep II to Amenhotep III (Tab. 10). Other architectural remains from Phase C are difficult to find at SAV1 East. In addition, few Ramesside sherds indicate some activities at the site in the late New Kingdom, but no clear architecture has survived from this period. This lack of substantial remains post-dating the mid-18th Dynasty is also mirrored in the sectors SAV1 North and SAV1 West (see below).

All in all, at SAV1 East the rather simple domestic buildings with silos of Phase A might be directly related to the assumed landing place below the eastern side of the town (see Chapter 2.5) and are relevant for understanding the nature of the Egyptian presence in Upper Nubia in the first half of the 18th Dynasty. The later phases of use at SAV1 East, Phases B and C, mainly comprise the mid and late 18th Dynasty – corresponding to the periods of building activity at Temple A and in the southern sector.⁴⁵⁵ Building A and the integration of Feature 15 into its courtyard as well as the large magazines and cellars Features 83 and 85 can be associated with the later reign of Thutmose III and possibly the reign of Amenhotep II which mark the heyday of Sai as administrative centre (see Chapter 8).

3.2.4 List of features of SAV1 East⁴⁵⁶

The following is a catalogue of all recorded features at SAV1 East, 91 features in total. The location, stratigraphic information, description and possible interpretation are given. The catalogue follows the original form sheets filled out during excavation and therefore also lists observations in chronological order, including additions which were made later in the individual season or in the next season. This catalogue aims to support the presented phasing of the sector as well as to provide raw data to the reader. It illustrates the planum drawings and section drawings of SAV1 East (Plans 1–3). All measurements of altitude recorded relate to the temporary benchmark set up by the SIAM mission⁴⁵⁷ situated at the southwest corner of the excavation house. Levelled at 160.306m, this benchmark has been designated as 0m. Each altitude mentioned in the figures and plans keeps to this local system.⁴⁵⁸

One has to stress that a more concise description and interpretation for all features connected with the large cellars (Features 15, 83 and 85) will be published elsewhere, including phasing plans of Building A. Since Building A and the cellars are also essential for the stratigraphical sequence and the Harris Matrix of SAV1 East, this will also be published in detail in the forthcoming volume. The results of the Harris Matrix are, however, also incorporated in the following catalogue of features.

Abbreviations used in this catalogue are the following:

E east	N-S north-south	SP Square point (measurement points in the four corners of a square)
E-W east-west	NW northwestern	SU Stratigraphical unit
H Height	S south	W West/width
F Feature	SE southeastern	W-E west-east
L Length	SM sample micromorphology	
N north	SQ Square	

⁴⁵⁵ Budka 2015a.

⁴⁵⁶ Based on the original field notes composed between 2013 and 2017 by Julia Budka, Sebastian Stiefel and Jördis Vieth.

⁴⁵⁷ See Doyen 2017, 24.

⁴⁵⁸ GPS data collected by AcrossBorders illustrate that this local system is 35m (+/-5m) lower than the height according to the World Geodetic System 1984 (WGS84).

No. of feature: 1

Location of feature: SQ1 surface, SP. 1.1–4

Main category: Surface cleaning, uppermost layer

Sub category: Layer

Measurements of feature: Square 10 × 10m, see Planum 1, 2; height and depth differ

Stratigraphy: Identical with F2 in SQ2

Description: Surface cleaning of very irregular surface, sloping towards E. Mixture of sherds, pebbles and stones. Covering layer: sand, pebbles, sherds, recent material mixed. Pebbles typical of SAV1: roundish, fluvial shaped forms, up to 7 × 4cm, mostly smaller, few single stones bigger. Single pieces of sandstone, a coarse variety. Probably originally from architecture. Small pieces of slag, black and porous (more in 2). Pieces of grinding stones (more in SQ2).

08.01.2013: Mud brick debris of different measurements: L? × B 14/20 × H 8/9cm. Two pieces of mud brick with 4 parallel grooves on one surface (see SAV1 North), one measures: 18 × 12 × 5cm, the other is smaller and more fragmented.

13.01.2013: Mud brick measurements, Planum 0–1b, NW-corner: L? × B 15, 5/15 × H 8,5/9/9.5cm.

14.01.2013: Mud brick measurements: L? × B 15 × H 9cm.

Dating/Interpretation: Mixed surface layer; mostly early 18th Dynasty (cf. Level 4 SAV1 North); few Ramesside sherds, some Post-Meroitic, lots of Christian/medieval sherds.

Finds: 01/2013 40 baskets of pottery; 02/2013 fragment slag; 03/2013 pieces of bones, seashell fragment; 04/2013 faience bead; 05/2013 inlay, glazed clay

No. of feature: 2

Location of feature: SQ2, SP. 2.1–4

Main category: Surface

Sub category: Layer

Measurements of feature: 10 × 10m, surface, see Planum 1, 2; height & depth differ

Stratigraphy: Identical with F1 in SQ1

Description: Irregular height surface. Pebble (as in SAV1 North) concentration in the S of square. To the N same material as described in F1. Much fewer surface pottery, here 18 baskets (cf. 40 from SQ1).

08.01.2013: pebble concentration continues in S of Square 2.

09.01.2013: broken mud bricks; pieces of mud bricks with grooves: parallel lines on one surface, 1 to 3 lines observed on different pieces: L? × B? × H 5cm. Mud brick measurements: L? × 18.5 × 10cm; L? × 15.5 × 8cm; L? × 15 × 7.5cm; L? × 16 × 9cm; L? × 19.5 × 11cm; L? × 17.5 × 8cm; L? × 15 × 7cm.

Dating/Interpretation: Mixed material; Thutmoside and late 18th Dynasty. Much Christian/medieval material.

Finds: 06/2013 18 baskets pottery; 07/2013 pieces of slag; 08/2013 pieces of fired stone

No. of feature: 3

Location of feature: SQ1 NE-SE; SQ2 NE

Main category: Wall

Sub category: Outer wall?

Measurements of feature: L: 12.90m N-S; W: < 1.50m W-E; H: 159.40–159.27m (SQ1)

Stratigraphy: Lies below F1, lies above F4 (3), cuts F4?, contemporaneous with F16 (and F5, 6, 17?)

Description: Linear structure, wall. Mud brick measurements: 32 × ? × 8cm, ? × 15 × 9.5/7.5cm. Up to three layers preserved. Mud brick construction in some areas preserved. Feature appears as shallow ditch in pebble F4, filled with material from F1. In SE-corner of SQ1 are 11 bricks laid out as upright course on eastern edge of wall. Mud bricks mostly in broken condition, so far none completely preserved. Laid in *muna*. On various places the form of a mud brick is preserved as imprints in *muna*. 21.01.2013: In SQ2 the southern edge is a negative feature of mud bricks (*muna*).

01.02.2013: The preparation of the wall by a kind of bedding, such as F19 which was used with Wall F16 cannot be verified for Wall F3 by now, the bottom of the wall is probably already disturbed in the SQ1 area. Wall F3 runs further S, as seen on Planum 1 in SQ2A (extension of SQ2 to the E). Wall F16 abuts F3 from the W.

Dating/Interpretation: Eastern wall of Building A; enclosure of courtyard. 18th Dynasty.

Additions: 06.02.2013: assumed combined length of Wall F3: southern end runs out of SQ; limit in SQ2A.

No. of feature: 4

Location of feature: SQ1, SQ2

Main category: Layer

Sub category: Levelling layer

Measurements of feature: > 30cm height; H: 159.85m SQ1 – Planum 1

Stratigraphy: Older than F1, 2. Lies below F3, 12, 13, 18, 19. Is cut by F5, 6, 7, 8, 9, 10, 11, 15, 17

Description: Levelling layer with pebbles of local origin. Mostly up to 4 × 4cm, single stones up to 6 × 7cm (and larger). Inclusions: single spots of humous sand (approx. < 3 × 3cm), light brown. Small pieces of pottery appear rarely, occasionally

some broken bone. Height of layer still unknown, approx. > 30cm, but differs following the uneven underground levels (see western section drawing, Plan 2).

Dating/Interpretation: Gravel terrace for Building A.

No. of feature: 5

Location of feature: SQ1, Planum 0–1

Main category: Pit

Measurements of feature: N-S 1.10m, W-E 0.85m; top: 159.54m – broken mud brick, 159.39m – surface pit; base: above 159.30m

Stratigraphy: Older than F1; cuts F4

Description: Egg-shaped form in planum. Filled with material from layer 1, broken mud brick visible on surface in southern edge. Mud brick measurements: L? × W 17.5cm × H 7cm; L? × W 12.5cm × 7.5cm. The burned mud brick: L? × W 17cm × H 8cm (probably shrunken in fire?).

Dating/Interpretation: Perhaps contemporary with Building A (but cuts Wall F4). See also F6 und 17 – later building phase?

Additions: 01.02.2013: Pit does not appear on Planum 2 anymore.

No. of feature: 6

Location of feature: SQ1, Planum 0–1, 1, 2

Main category: Pit

Measurements of feature: N-S 1.30m, W-E 1.45m; top: 159.38m

Stratigraphy: Older than F1; younger than F4; cuts F4

Description: Round shape on planum. Filled with light grey sand of Layer 1.

01.02.2013: On Planum 2 the pit is still visible at 159.28m H. It could be related to F17 in SQ2.

09.02.2013: Planum 3 (not yet drawn). Measurements of the empty pit: N-S 1.25m × W-E 1.35m. Preserved depth from planum is 0.45m. Regular round shape, inner face vertical with a tendency to bag shape (slight). Bottom roughly horizontal. The inner face of the pit shows a rest of *muna*-lining(?) in the NE area, although the surrounding pebble is still clearly visible everywhere.

14.02.2013: on the eastern 1/3 of the bottom of F6 are remains of a *muna* floor, stretching to the E. This *muna* layer contains some pebble and small pieces of charcoal, baked together with *muna*.

Dating/Interpretation: Perhaps contemporary with Building A, 18th Dynasty.

No. of feature: 7

Location of feature: SQ1, Planum 1, NW-corner

Main category: Pit

Measurements of feature: N-S > 0.65m, W-E > 0.65m; top: 159.76m, base: above 159.64m

Stratigraphy: Older than F1, younger than F13, cuts F13, F4

Description: SE-edge of feature visible in SQ1, complete outline not excavated so far. Cuts F13 and Layer F4. Filled with material from Layer F1, light grey sand, including sherds and smaller stones.

Dating/Interpretation: Could be recent?

Additions: 01.02.2013: The pit does not appear on Planum 2 anymore. See W-section.

No. of feature: 8

Location of feature: SQ1, Planum 1, NW-corner

Main category: Pit

Measurements of feature: N-S > 0.80m, W-E > 0.38m; top: 159.76m; base: above 159.58m

Stratigraphy: Older than F1, younger than F4, cuts F4

Description: Eastern part of pit in planum, western part not yet excavated. Filled with F1 material: light grey sand, sherds, stones.

Dating/Interpretation: Could be a recent pit; disturbance?

Additions: 01.02.2013: The pit does not appear on Planum 2; cut off; see W-section, cut into the gravel.

No. of feature: 9

Location of feature: SQ1, Planum 1, NW-corner

Main category: Pit

Measurements of feature: N-S 0.80m, W-E 0.66m; top: 159.56m, base: above 159.30m

Stratigraphy: Older than F1, cuts F4

Description: Slightly rectangular form with round edges. Filled with light grey sand from F1 and pebble.

Dating/Interpretation: Unclear – see F8, maybe recent?

Additions: 01.02.2013: The pit was quite shallow, it does not appear on Planum 2.

No. of feature: 10**Location of feature:** SQ1, Planum 1**Main category:** Pole hole (?)**Measurements of feature:** N-S 0.28m, W-E 0.22m; top: 159.60m, base: 159.45m**Stratigraphy:** Older than F1; younger than F4; cuts F4**Description:** Round form; filled with fine brown-grey sand (from F1?). No pottery found.**Dating/Interpretation:** Possibly a pole hole?; relation to other features not clear (if any; could be recent).**No. of feature: 11****Location of feature:** SQ1, Planum 1**Main category:** Pole hole (?)**Measurements of feature:** Diameter of 0.17m; top: 159.56m, base: 159.44m**Stratigraphy:** Older than F1, younger than F4, cuts F4**Description:** Round shape. Small feature filled with fine light brown-grey sand, from F1. No pottery found in filling. Conical form.**Dating/Interpretation:** Possibly a pole hole?; relation to other features not clear (if any; could be recent).**No. of feature: 12****Location of feature:** SQ1 NW-corner, Planum 0–1, 1**Main category:** Collapsed mud bricks**Sub category:** Wall**Measurements of feature:** N-S 0.70m, W-E 0.30m; H: 159.80–159.69m**Stratigraphy:** Younger than F4, contemporaneous with F3, 16 (?)**Description:** Irregular rectangular form. Slightly NW – SE orientated: see Feature 3, see below. One brick layer, three joints from N-S. No edge. Bricks broken off on both sides (W+E). *Muna* in the joints. No measurements of the mud bricks possible: all sides broken off, only imprints of mud brick in *muna*.**Dating/Interpretation:** Collapsed from some wall?**Additions:** 06.02.2013: Though the feature is not directly connected to Building A walls, it follows the general orientation formed by the walls F3, 16 and thus could be contemporaneous with Building A.**No. of feature: 13****Location of feature:** SQ1, Planum 1, 2 NW-corner; SQ1A**Main category:** Mud brick structure**Sub category:** Wall**Measurements of feature:** N-S 0.78m, W-E 1.75m; H: 159.93m; width to W 0.72m**Stratigraphy:** Older than F7 (cut by F7); younger than F4; contemporaneous with F3, 16, 21, 30, 3, belonging to F22, 21, 30**Description:** Mud brick structure, rectangular shape. Max. 4 layers preserved of wall. Mud brick measurements: L? × W 15cm × H 7cm; L? × W 15cm × H 9cm. Western edge is cut by F7. Southern edge is partly preserved. Northern part not yet excavated (outside SQ1).

06.02.2013: Continues to N+E. See SQ1A Planum 1+2. First to be seen as a disruptive pit in a linear form, running W-E, obviously forming a NE-corner with Wall F3. The western end of Wall F13 is possibly still to be found on a lower level (?), as the cutting pit F7 appeared to be quite shallow and is already finished on Planum 2.

Dating/Interpretation: F13 appeared first as an unclear structure in the NW-corner of SQ1; but with the extension of SQ1A it became clear that F13 is continued by F21, meeting F3 and continuing to F30. Third layer of bricks on Wall F21. Interpretation as northern outer wall of Building A does not work, see floor. Area and construction in western end of F13 completely unclear, disturbed and destroyed. Possibly a kind of foundation trench with collapsed bricks at the southern side of F30? For dating, see foundation trench and finds from F30; mid-18th Dynasty (Thutmose III?).**No. of feature: 14****Location of feature:** SQ2, Planum 1; details 1st condition, 2nd condition**Main category:** Bin**Sub category:** Storage bin**Measurements of feature:** N-S 1.82m, W-E 1.20m; inside W-E 0.96, N-S 0.55m; H: 160.05–159.64m**Stratigraphy:** Contemporaneous with area around Temple A, belonging to F18?**Description:** Sub-rectangular shape, rounded edges. Hole dug into pebble and plastered on the inside with *muna/muchmarra*. Traces of finger strokes are still visible on northern inner face, from W-wall until 2/3 northern side. SW-, SE-, NE-corners are damaged; rest of *muchmarra*-lining is preserved on different heights, best preserved in NW-corner. On western edge two vessels – one red burnt jar, one beaker, are found in situ. Findno. 39/2013 was broken at top, (S), Findno. 40/2013 (N). On eastern

edge three larger pieces of mud bricks lay collapsed on the bottom of the storage bin, covering sherds from a dish, Findno. 46/2013 and a beer jar, Findno. 47/2013.

Dating/Interpretation: Storage bin similar to the ones Azim excavated in the area north of Temple A, set against gravel terrain, built with *muchmarra* and some small mud bricks. Pottery clearly pre-Thutmose III, cf. Level 4 in SAV1 North (early 18th Dynasty).

Finds: 39, 40, 46, 47/2013 = pottery vessels; 49, 50/2013 content of vessel 40

Additions: 21.01.2013: The bottom of the feature is made of *muchmarra*, same as the walls, in a relatively thin layer. It is almost 80% preserved, some broken areas are visible; after removing the content, the bin lies in gravel deposit. Parallel grooves of fingers run on northern inner face of feature, close to the edge between bottom and face. A bit shorter and smoother grooves of same origin are visible on the western inner face and SW-corner of feature. Sample was taken for micromorphology in 2016 (SM 12).

No. of feature: 15

Location of feature: SQ2, NW-corner, Planum 1, Planum 3 detail, Planum 4 detail; SQ4, SE-corner

Main category: Mud brick structure

Sub category: (Storage installation) cellar

Measurements of feature: N-S 2.05m, W-E 2.52m; H: 159.86m; preserved depth: 1.2m

Stratigraphy: Older than F2, younger than F4, cuts F4, contemporaneous with F3, 16 (?)

Description: Rectangular subterranean mud brick lined structure, burnt orange.

The northern wall is badly preserved; the original construction of the eastern and northern wall seems to be quite similar. The outside lining of the rectangular pit is formed by mud bricks placed upright in a line, set against the surrounding pebble. The inner lining is formed by red bricks, placed upright in a line with a small gap to the outer lining, which is filled with *muna*. On the inner face of the red bricks some *muna*-plaster is preserved, on the eastern wall but also in the SW of the feature.

Mud brick measurements: 1st layer: L 38cm × W ? × H 11cm, L 25cm × W 14cm × H? 2nd layer: L 34cm × W 17cm × H 10cm, L 33cm × W 17cm × H 10.5cm.

Dating/Interpretation: Domestic installation, probably storage/cellar: meticulously worked walls to isolate inside from outside. Orange bricks most probably secondarily burnt (structure was on fire). No oxidation on rest of floor or *muna*-lining in upper levels. Some burning activity in lower levels and at western edge. F15 is visible as positive anomaly on the map of the Geophysical Survey 2011; it will be published in detail elsewhere; final assessment: large vaulted rectangular cellar with brick pavement (Budka forthcoming a).

Finds: Plenty of ceramics, charcoal, bone, seal impressions and other finds (to be published elsewhere)

Additions: For its building phases, see Budka 2015a, 45, tab. 1.

No. of feature: 16

Location of feature: SQ2, Planum 0–1, Planum 1

Main category: Wall

Sub category: Southern outer wall of Building A

Measurements of feature: L: > 9.85m, W: > 0.99m; H: 160.12–159.29m surface Planum 1

Stratigraphy: Younger than F4, contemporaneous with F3, 19, lies above F4, 19

Description: Linear structure, running roughly W-E. Mostly in bad condition, only single spots of in situ mud bricks preserved like on Planum 1. Eastern end runs up to Wall F3. Western end destroyed, visible in broken and dislocated mud bricks, no structure in mud brick preserved. Lots of pottery and pieces of *muna* with parallel grooves. Western end outside SQ2 limits. Outline of wall not clearly to be seen on planum, some single spots of original face of wall preserved. Pottery between bricks mixed – both end of 18th Dynasty and Post-New Kingdom. High gravel deposit just S of Wall F16. Mud brick measurements: L 34cm × W 15.5cm × H?; L? × W 17cm × H 9cm.

22.01.2013: The actual bottom of the wall seems to slope down in height from W to E: the condition of preservation is very bad in the W, getting slightly better to the eastern limit of SQ2.

30.01.2013: Wall F16 abuts Wall F3 in the E – obviously Wall F3 continues to S. Clearly most disturbed at the western end visible in Planum 1.

08.02.2013: On the western profile of SQ2 north of Wall F16 is a thin horizontal layer of usage visible with traces of ashes and very fine debris. This indicates an inner part of the Building A-complex (which might well be an inner courtyard). This layer stops in the south at Wall F16. S of Wall F16 pebble is on the same height, which indicates the outside of Building A.

Dating/Interpretation: South wall of Building A, 18th Dynasty.

Additions: Wall is different from F3 and F30. Mud brick measurements: 35 × 18/17 × 7/9cm; 40 × 19/18 × 9cm. Important: all the loose bricks N of F16 are remains of the foundation pit; cf. F3+30, see also W-section SQ2. Set between loose pebbles. Definitely abuts F3, forming the SE-corner of Building A.

No. of feature: 17

Location of feature: SQ2, Planum 0–1, Planum. 1+2, N-border of square

Main category: Pit

Measurements of feature: W-E 1.45m, N-S 0.7m; H: 159.64m

Stratigraphy: Older than F2, younger than F4, cuts F4

Description: Round shape; southern outline visible in SQ2. Does not appear in southern part of SQ1, that means the maximum N-S measurement of the pit is roughly less than 1.25m. Filled with light grey sand, material from F2. Probably connected with F6 in SQ1 and the walls F3/16.

22.01.2013: Appears smaller on Planum 1 (minus 40cm from surface): W-E 0.95m, N-S 0.45m.

30.01.2013: Pit is still visible on Planum 2, slightly smaller in shape, at 159.54m.

14.02.2013: The pit was cut into the surrounding pebble layer, F4. It seems to be shallower than F6 in the N. The outline is not circular: round to W+NW, irregular to SE-E. On the bottom of the pit, to its western limit, there are remains of some kind of shallow clay/mud deposit, broken off on all sides. Perhaps a pole hole. Measurements: 0.38m N-S × 0.35m W-E, c. 4cm high. W of this clay layer are some remains of a *muna* covering, on a deeper level.

Dating/Interpretation: Probably contemporary in use to Walls F3 and F16 and the pit(s) F5 and F6 in SQ1; belonging to Building A?, 18th Dynasty.

Additions: 14.02.2013: Most probably just natural *muna* at bottom of pit – cf. SQ2A, no real floor.

No. of feature: 18

Location of feature: SQ2, Planum 1

Main category: Mud brick structure/*muna*

Measurements of feature: Between 4.70–6.45m E/1.85–3m N of SP. 2.3; H: 160.30–160.18m

Stratigraphy: Contemporaneous with F14?

Description: Irregular in shape, 3 spots of *muna*, occasionally with mud brick imprint. Outline damaged, no regular limits. Preserved up to a height of 12cm. Probably from the same period as storage bin F14? See Planum 1, however, no stratigraphic proof is left, but see ceramics. Very brown material, cf. area SQ2B with destruction levels.

Dating/Interpretation: Obviously remnants of a building horizon?; early 18th Dynasty?

Finds: 73/2013 = vessel; 74/2013 bone

Additions: 24.01.2013: Pottery vessel Findno. 73/2013 smashed on level of base. Broken Nubian rim sherd of vessel at very bottom = bottom edge of mud; between pebbles, 10cm from N-S. To the east, at level of lower edge of N-S + 5cm deeper foundation trench of mud – max. 50cm to E; 14 × 11cm. Still above upper edge of F14, but sloping area.

No. of feature: 19

Location of feature: SQ2, SP. 2.1–2.4, Planum 2

Main category: Layer/bedding

Sub category: Wall foundation/bedding

Measurements of feature: Found on two places in Planum 2: 1) W: 1.80 (–2.20?)m N-S × 2.80m W-E; 2) E: 2.20m N-S × 1.85m W-E

Stratigraphy: Lies below F16, lies above F4, contemporaneous with F16, belonging to F16

Description: Irregular outlines, but follows the linear stretch of Wall F16. The difference to the pebble Layer F4 is vague (the outline therefore drawn in a dashed line). Mixture of pebble and *muna*. The mixture was used to prepare the surface of the pebble layer F4 for the first layer of *muna* and mud brick. It appears to be more solid than the surrounding pebble and thus serves as kind of foundation for the building of Wall F16. The thickness seems to vary and is very hard to judge properly. It is approx. preserved to a height of c. 15cm. Preserved only in highest part of Wall F16, that is close to the square limit in the W and right in the middle of SQ2.

Dating/Interpretation: Belonging to Building A; 18th Dynasty.

No. of feature: 20

Location of feature: SQ2, Planum 1, 2/SQ2B, Planum 1, 2, 3, 4. SP. 2.3: 0.0–0.70m N/0.0–0.64m E

Main category: Mud brick structure

Sub category: Wall

Measurements of feature: 0.67m N-S, 0.54m W-E; H: 160.21m

Stratigraphy: Older than F2, younger than F4, belonging to F28?

Description: Linear wall feature: northern end in SQ2, southern end outside square limit. Eastern face formed by three mud bricks. Destroyed in western part up to square limit. Southernmost mud brick appears orange on its eastern face. Two layers visible: uppermost layer 0.48m N-S, not preserved in S, lies on pebble, does not extend over the first visible layer. The structure has been partly destroyed in its western part, 0.0–0.35m E of SP. 2.3. Broken mud brick, sherds and sand are visible in this area. Mud brick measurements: L? × W 14.5cm × H 8.5cm. *Muna* was used in joints of mud bricks, still visible on surface of middle mud brick as well. 06.02.2013: Orientation N-S: the orientation of the structure follows the main orientation of Building A, but see also F55 in SQ4. On Planum 2 another mud brick of the structure became visible. Probably the settlement debris described as F1 (partly) belongs to F20. The pit which cut F20 to the W is no longer visible on Planum 2.

11.02.2013: See Planum 4: The foundation structure F28 SE of F20 shows the same technique and well-fitting orientation. The area between is disturbed, so far there is no direct joint between the features.

Dating/Interpretation: 06.02. 2013: Probably contemporary with Building A based on the same orientation, similar stratigraphical levels. 11.02.2013: SW-edge with F28 possible.

15.02.2013: Up to 4–5 “layers” – not regular – of stones are set in the ground to support the above structure. On Planum 6, the bottom of the stone foundation has not yet been reached. On Planum 5, the height of the surrounding area is about 159.69m, the highest point of the feature is at 160.21m, that makes 0.52m in height already now. Planum 6: so far, no connection between F20+28 has become clear.

03.2015: Update – with the excavation in Square 4, in particular the discovery of F53, a date to the early 18th Dynasty is very likely for F20. It was probably part of an early structure at SAV1 East; see the parallel orientation with F53 as possible western wall; F20 would then be the eastern wall, but the connection is missing.

Additions: 08.02.2013: Planum 3: The length of the feature now reaches up to 1.25m N-S, if the sandstone pieces are considered as part of the structure, the width might then be 0.90m W-E, which fits approx. to the width of Walls F3+F16 of Building A (0.95m). Whether the outline of pit “2” is significant for F20, is still not clear.

No. of feature: 21

Location of feature: SQ1A, SP. 1.1, 1.2, 1.5–1.8

Main category: Mud brick debris

Sub category: Debris from Wall F3

Measurements of feature: L: 5.70m, W: 2m; H: 159.07–159.43m (Planum 5), 159.83–159.31m (Planum 2)

Stratigraphy: Is cut by F23

Description: Debris with irregular shape, probably follows the outline of Wall F3. Limited to the E by mud brick debris, to the NE by pebble and F23. Limit to the W by F22 (floor) and a small pebble area probably belonging to F22. To the N the outline is unclear, due to limit of excavation. Fine light grey sand; in the eastern part (between SP. 1.8 and SP. 1.2) mixed with pebbles and sherds and some small mud brick fragments.

Dating/Interpretation: Collapsed part of Wall F3 of Building A, 18th Dynasty.

No. of feature: 22

Location of feature: SQ1A, extension to SQ1 (North); SP. 1.1, 1.2, 1.5–1.8

Main category: Floor (probably of F13)

Sub category: Circulation floor/thin mud floor

Measurements of feature: Max. L: c. 4m, max. W: c. 1.50m; H: 159.71–160.0m

Stratigraphy: Lies above F21, contemporaneous with F13?, poss. cuts F21, belonging to 13

Description: Approx. rectangular shape, slightly sloping to the E, probably includes pebble area to its SE (limited by F21). Broken off to the N. To the S (connection to F21) only traces of “Begehungshorizont” left. The undermost layer (pebble) of the floor is visible. Limited to the N by mud brick assemblage. Material: muddy clay with layer of pebbles in the lowest level.

Dating/Interpretation: Circulation floor belonging to F13.

No. of feature: 23

Location of feature: SQ1A, SP. 1.1, 1.2, 1.5–1.8

Main category: Mud brick structure/assemblage

Measurements of feature: L: c. 1.50m, W: c. 0.50m; H: 159.40–159.58m

Stratigraphy: cuts F21

Description: In planum rectangular shape, because it is cut by limits of excavation in the N. Mostly consisting of mud brick debris mixed with lots of sherds and pebbles. To the E perhaps start of mud brick structure to which the assemblage belongs (2 bricks in situ?). Seems to continue to the NE of SQ1A. Limited to the E by mud brick debris (to the S by F21).

Dating/Interpretation: Mud brick structure – later phase of 18th Dynasty?

No. of feature: 24

Location of feature: SQ2B, Planum 2, 3, 4; SP. 2.8: 3.85–5.25m E/0.85–2.05m N

Main category: Pit

Measurements of feature: 1.40m W-E, 1.30m N-S; H: 159.27m

Stratigraphy: Younger than F4

Description: Irregular, triangular shape; complete on planum. Filled with fine light grey sand, without inclusions so far. Cuts the surrounding areas with various settlement debris-concentrations, as described on Planum 2 as “6”, and the pebble in the N, described as “7” on Planum 2.

08.02.2013: On Planum 3 the form of the pit has changed to oblong: 1.55m W-E × 0.55m N-S. The pebble of the levelling layer is now visible in the NW of the former pit-outline and the area of sandy-clay settlement debris in the S.

13.02.2013: Planum 4: only a small rest of pit filling is still on the surface. Planum 5: the pit has disappeared. See further development Planum 6+7 with 28 + cleaning of debris along the slope towards S.

Dating/Interpretation: Pit similar to F6 and 7.

No. of feature: 25

Location of feature: SQ2B, Planum 2, 3; SP. 2.8:5.0–7.50m E/0.20–1.45m N

Main category: Pit

Sub category: Depression in debris

Measurements of feature: Max. 2.60m SW-NE/1.15m NW-SE; H: 159.57m

Stratigraphy: Unclear – see above F9

Description: Irregular oblong feature, completely on planum. Described as “9” on Planum 1. Cuts the surrounding areas of settlement debris. Contains mainly fine light grey sand. Includes some broken mud bricks, sherds, little pebbles, stone fragments, concentrated mostly on some spots (W, NW, NE) of the feature. One broken red brick was observed on Planum 1, with the measurements: L > 16cm × W 15cm × H 6cm.

08.02.2013: On Planum 3 the outline of the pit is bigger to the E. The pit and its filling have been covered by the concentrated mud brick debris from which there are still remains on Planum 3. The debris is described as “4” on Planum 3. 2.9m W-E (SP. 2.8: 4.80–7.65m E).

13.02.2013: Planum 4: the shape of the pit changed, perhaps due to the more stable material described as “5” on the planum in the N. Planum 5: the size of the pit appears smaller, apparently it is now only shallow on the pebble underneath, but still definable. In the filling are pieces of mud bricks laying loose, probably from the cut settlement debris to the N+E of the pit. Planum 6: still visible as semi-circular pit with sandy filling.

Dating/Interpretation: Filling material mostly 18th Dynasty, but most probably the pit stems from Post-New Kingdom times.

Additions: 02.03.2013: See photos after Planum 6: sandy filling and mud brick debris were set on gravel, pit has more or less disappeared, possibly some collapsed bricks in southern bulk belong to F25, see also F32. All in all less defined/deep than F26. Very few ashy remains and charcoal. A lot of 18th Dynasty material from this area.

No. of feature: 26

Location of feature: SQ2B, eastern part Planum 2, 3, 6 and final Planum; SP. 2.9: 3.12 – 5.0m E/0.0 – 2.05m N

Main category: Mud brick lined circular feature

Sub category: Oven?

Measurements of feature: 1.85m W-E, 2.05m N-S; H: 159.69m

Stratigraphy: Contemporaneous with F25, 32, 28?, sunk into F2a – gravel deposit

Description: Irregular shape. Eastern and southern outline are beyond square limits. Cut in the N by trench. Described as “11” on Planum 1. The pit contains mainly fine light grey sand which includes bigger pieces of broken mud brick in the N, some pebble and few sherds. To the S and SE-corner of SQ2B the concentration of inclusions is higher. The sand contains more settlement material like small stone fragments, sherds, broken mud bricks and one fragment of red brick (L > 13.5cm × E > 11cm × H 8cm).

08.02.2013: On Planum 3 the pit has not changed much, it is still very sandy – fine light grey sand – and stretches all over the eastern end of SQ2B. There are now bigger pieces of broken mud brick on the surface of the filling. The pit cuts into the settlement debris described as “4” in the N, still no other pit limits are visible in SQ2B.

13.02.2013: Planum 4+5: The pit gets smaller in shape while deepening the excavation level. It is still visible, but the surrounding mud brick debris has an even higher concentration, parts of the debris are also lying in the pit filling.

Dating/Interpretation: Date still unclear – mixed and disturbed until base. Most probably Ottoman? Possibly an oven, see additions.

Additions: 02.03.2013: After Planum 6, further deepening of SQ2B in E part, clarification of nature of F26: it clearly is a badly preserved circular structure of mud bricks, set on the gravel, scarce remains of floor/*muna* have survived. The NE-corner is much collapsed and includes a flat stone topped with *muna* – cf. F28, indicative of a Post-New Kingdom date. C. 1.20m from the N is a small fragment of red brick in ashes, also indication of late date? NW+SW area are very ashy at bottom, also some charcoal and remains of burned mud bricks: thus possibly an oven?

No. of feature: 27

Location of feature: SQ2, 2B Planum 4

Main category: Bin/mud brick feature

Sub category: Bin

Measurements of feature: 0.32m W-E, > 0.24m N-S, from SP. 2.8: 7.24–7.55m E/1.93–2.18m N; top: 159.53m, base: 159.46m

Stratigraphy: Unclear

Description: Circular. Northern 1/3 disturbed by trench. Basket built of organic fibres. Upper part disturbed. Rim pressed down on west side by small fragments of mud bricks, smashed. Filled with fine light grey sand, including pieces of clay – from mud bricks – sherds, 1 pebble, 1 piece of bone (already on Planum 3). One bigger fragment of mud brick covers the NW of the basket. At the broken northern edge the bottom of the basket is still to be seen, so it might be preserved underneath the filling. The content is part of the surrounding debris. Drawn in its first condition in detail, scale 1:10.

13.02.2013: 2nd condition drawing (emptied) in scale 1:5. The basket is not disturbed in its upper part; it is complete apart from the recent cut in the N. It is worked in a simple weaving technique with crossing reed-leaves. It has no defined rim, is very simple in shape, only one kind of material has been used: up to approx. 1cm wide leaves from reed (?). The bottom seems to be

eaten by termites. The surface of approx. 50% and the inner part and up to 80% of the rim are eaten by termites. The pressure of the debris above reduced the original depth of the basket to 13cm but was surely deeper when used, see the deformed area along the western part of the rim.

Dating/Interpretation: Until base mixed ceramics. Basket: Ottoman or sub-recent (as evident from plaiting technique); possibly working basket from 20th century explorers (Breasted, Vercoutter, Azim)?

No. of feature: 28

Location of feature: SQ2B, Planum 4; SP. 2.8: 2.70–4.50m E/0.65–1.28 N

Main category: Building

Sub category: Stone foundation

Measurements of feature: 1.75m W-E, 0.55m N-S; H: 159.73m; final shape see Planum 7 and photos 02.03.2013; NS = 0.90 + xm, EW = c. 3.30m

Stratigraphy: Unclear (area with mixed fillings/disturbance); but see F57 towards the W (contemporaneous to F57)

Description: Linear orientation W-E (follows the general orientation given by Building A – Features 16, 3). Built against natural gravel terrace; remnants of a foundation for a wall. 2 layers preserved. Large, more or less flat stones set close to each other in one line. The joints are filled with *muna* to keep the stones in place, on the surfaces are rests of *muna* still in place, the easternmost patch of *muna* shows a clear imprint of the stone/mud brick of the following layer. The preserved part consists of 7 bigger stones. One small piece of a mud brick still sticks to the *muna* on the surface between first and second stone from W. The southern outline seems to be in the original shape, whereas the northern part of the feature is disturbed. The original width of the foundation is not preserved, same as W- and E-ends. Following the southern outline to the W, the feature would meet the prolongation of F20 to the S, forming a SW-edge. The technique for a foundation layer with bigger stones combined with mud bricks and *muna* seems to be the same in both F20+28. The small heaps of dislocated stones/mud brick/*muna*/fragments in the NW of the feature, described on Planum 4 as “3”, could be the rest of the foundation on this side and indicates the proceeding to the W.

13.02.2013: Planum 5: difference to Planum 4-condition: below *muna* patch (SP. 2.8: 3.65–3.8m E/0.90–1.15m N) in the middle of foundation remains another stone appeared. As the stones are very irregular in size and shape, there are no regular layers of foundation work. The feature is rather worked in steps than layers. *Muna* and mud brick was used to equalise the differences in level which are given by the natural slope; the stones are unworked.

15.02.2013: Planum 6: the stones forming the foundation appear more defined at the W+E ends, the stones in between are now higher, but otherwise did not change much; there is still no trace of a possible connection between F20 and 28.

Dating/Interpretation: 2013: Seems to be an Ottoman building technique? Date unclear.

2015: Probably eastern extension of F57; thanks to the stratigraphic information of F57 part of an early structure at SAV1 East; possibly related to Kerma *galoos* building technique.

Finds: 351/2013 cleaning S-baulk and a bit of the surface 1–6m to E; lot of debris + dump

Additions: 18.02.2013: See Planum 6 and photos, extension of structure. Feature with 7 large stones packed together in E-W alignment; are set within muddy-sandy depression on foot of gravel deposit S of SQ2; it therefore extends further to the S than F20, which ends at the gravel deposit. Southern outer face of F28 is regular and almost in one line, whereas the stones towards the N facing the pebble are irregular, this supports an interpretation as retaining wall against the pebble. Below Planum 6 further extension of F28. First: towards W, in line with F33. Three single headers of mud brick with *muna* preserved – attached to stone foundation of F28. Forth brick is closing a gap to F33; some remains of mud brick debris in muddy surface (gap of 35cm), mud brick format: 32 × 15 × 7cm. Second: towards E, small corner, single line of stretchers, 2 pieces of mud bricks preserved, 1 very small fragment, format 33 × 17 × 8cm. Adjacent to F28. All in all, F28 sits in the gravel – towards N there is a very loose back filling of gravel, towards the S mud brick debris. The max. length of F28 in Planum 7 is 3.30m, with stone foundation c. 2m in length. All in all, a mixture of mud bricks and stones, 4 layers and stones account to 50cm in height. No floor is preserved.

No. of feature: 29

Location of feature: SQ1A, Planum 6, SP. 1.5–1.6

Main category: Pit/silo

Measurements of feature: 1.75m W-E, 0.75m N-S

Stratigraphy: Younger than F22, cuts F22

Description: A pit of nearly half-round shape, cut by limits of excavation towards the north. Filled with mud brick debris, different kinds of sherds, bones and some burnt bricks as well. Humous material.

Dating/Interpretation: Post-dates the floor. Probably dug into the floor in recent time (Ottoman period onwards). Filling material mixed, lot of Ottoman material. Visible as deep dark anomaly on map of geophysical survey 2011. Addition: With SQ1B in 2014, the northern half was excavated; although the pit cuts Floor F22, it might be 18th Dynasty after all; F49 is a dividing wall at its base and makes it likely that F29 was a circular silo. Thus, F29 illustrates that several building phases of Building A can be reconstructed (cf. Wall F44).

No. of feature: 30

Location of feature: SQ1A, Planum 6, SP. 1.6–1.7

Main category: Mud brick structure

Sub category: Wall

Stratigraphy: Contemporaneous with F13, 21, 3?, is cut by pit, see Planum 6 SQ1A SE part

Description: Extension attached to E-W wall of F13, 21. Roughly rectangular in shape, cut by pit at western and southern edges. Consists of mud bricks and *muna*, pits filled with clayish sand and mud brick debris, some small stones/pebbles, few potsherds. Northern face consisting of bricks *c.* L 34/32 × W 16 × H 8cm. Easternmost brick nearly completely weathered but shape can still be traced. N to structure is a trench filled with pebble material and mud brick/*muna* debris. The pebble slopes over the layer of *muna* on top of the bricks in the NW-corner. Western end severely damaged by sandy pit, negative of binder joining with remains of its northern counterpart still visible on *muna* in SW-corner. Construction joint with distinctive gap to older wall of F13, as can be seen in the southern part of the town, possibly still visible in pit. Big piece of mud brick at bottom of pit rather belonging to Wall F13/21. Southern line of stretcher only traceable by 1–½ bricks in SW-corner at this level. Most of the structure S of the N-line of the stretcher is disturbed by a big nearly half-round pit filled with sandy material, surrounded by compact mud brick/*muna* material → in upper levels very humous/dense and very mixed ceramics. Course to eastern direction remains unclear because of damage; definitely broken/cut off.

Dating/Interpretation: Structure attached to Wall F13; 18th Dynasty. Likely construction joint as in N-part of town (SAV1 North). Continuation to east remains unclear.

No. of feature: 31

Location of feature: SQ1A, see Plana 6+7

Main category: Foundation

Sub category: Foundation trench

Measurements of feature: W: *c.* 35–45cm at eastern side, S of F30

Stratigraphy: Contemporaneous with F30, 3, 21

Description: Narrow foundation trench alongside F30; see also collapsed bricks of F3. Cf. SAV1 North – along lowest layers of round brick wall, loose gravel, filled/mixed with collapsed mud bricks, very few sherds, see SAV1E P57+P58. All in all, foundation trench traceable in SQ1A (negative outline); in SQ1 along F3 obviously cut, see collapsed bricks. At eastern side of F30/towards S cut by pit. Undisturbed area S of F30 with few mixed 18th Dynasty sherds.

Dating/Interpretation: Foundation trench of wall of Building A, mid-18th Dynasty/Thutmose III.

Finds: Pottery vessels SAV1E P57+P58

No. of feature: 32

Location of feature: SQ2B, S of F27; 7–8.30m to E; see Planum 7

Main category: Pit

Sub category: Mud brick debris/assemblage

Stratigraphy: Contemporaneous with F25?

Description: Final shape of mud brick debris in SQ2B, S of F27; possibly once a rectangular, round structure, bricks are collapsed and sit on gravel deposit, between and below still mixed sherds. Towards the E (to F26) ashy remains. Separated from F27. Very dense mud brick assemblage also in the southern baulk in this area of SQ2B.

Dating/Interpretation: Post-New Kingdom, possibly Ottoman? Some of the collapsed and removed bricks had Christian sherds inside (medieval or post-medieval).

No. of feature: 33

Location of feature: SQ2B, SW-corner, see Planum 7; up to 1.80m to E

Main category: Mud brick structure

Sub category: Wall

Measurements of feature: W-E 70cm, N-S 37cm; H: 27–30cm

Stratigraphy: Unclear

Description: Remains of a wall, disappearing in S-baulk + W-baulk of SQ2B. Mud bricks: 30/33 × 15 × 7/8cm in line with F28, but different building technique and seems to make a corner towards the south. Obviously E-corner with stretchers and then 2 headers towards the W. 3 layers of brick preserved; some *muna* between them.

Dating/Interpretation: 18th Dynasty? unclear – but most likely connected with F28 and also F57 towards the W.

No. of feature: 35

Location of feature: SQ3 and 4; SQ3: 1.9–5.25m E-E/0–10m N-S; SQ4: 3.4–(5.5 m) W-E/0–(3.6 m) N-S

Main category: Foundation trench

Measurements of feature: L: 14m, W: min 0.9m, max 1.9m

Stratigraphy: See Harris Matrix

Description: Foundation trench of Wall F36. Longitudinal ditch running N-S. Sunk into the artificial terracing of gravel. Western edge quite regular in height/depth and outline; except for recess of *c.* 0.5m towards the E in the northern 2.5m – gets shallower. Eastern edge more irregular in height/depth and outline, most probably due to slope S to N and slightly W to E → in northern *c.*

5m E-edge at bottom level of ditch. Contains remains of Wall F36, which is in most parts heavily disturbed. Filling material very mixed: above substantial wall remains sandy/loose material; in disturbed areas dense layer of mud brick debris, mixed with lots of pottery; towards bottom sandy layer with smaller debris fragments and pottery. Not completely excavated towards the S in SQ4.
Dating/Interpretation: 18th Dynasty; foundation trench of one wall of Building A.

No. of feature: 36

Location of feature: SQ3 and 4; SQ3: 1.9–5.25m W-E/0–10m N-S; SQ4: 3.4–(5.5 m) W-E/0–(3.6 m) N-S

Main category: Wall

Measurements of feature: L: 14m; W: max 1.8m; H: max 0.5m

Stratigraphy: Sunk into F35

Description: Heavily disturbed N-S wall of Building A. Not more than 4 layers of bricks preserved. Brick measurements range from 32 × 15 × 10cm to 38 × 20 × 10cm. 4 – 4 ½ bricks wide. Gets shallower in the northernmost stretch of 2.5m; width c. 90cm/2 ½ bricks. Consisting of mud bricks, connected with mortar of different thicknesses. Not completely excavated towards the S in SQ4.

Dating/Interpretation: One of the main walls of Building A, 18th Dynasty.

No. of feature: 37

Location of feature: SQ3, 0.4–1.3m W-E/0.2–1.15m N-S

Main category: Mud brick structure

Measurements of feature: L: 0.90m; W: 0.70m; H: 0.10–0.15m

Stratigraphy: Connected to F41

Description: 2 brick thick mud brick structure in NW-corner of SQ3. 2 bricks high preserved. Brick measurements: 32 × 15cm, height not completely preserved. Lowest layer composed of 2 stretchers; above only one header at W-edge preserved. Mud bricks with mortar, showing traces of heavy disturbances. On the top the bricks are wind eroded. Floor pavement F41 connected to bottom edge of the wall in the W.

Dating/Interpretation: Structure within Building A, 18th Dynasty.

No. of feature: 38

Location of feature: SQ1B, 0–(8.4 m) W-E/(1.5m)–3.75m N-S

Main category: Wall

Measurements of feature: L: 8.4m; W: 0.9–1.1m; H: max. 0.3m in the W

Stratigraphy: See Harris Matrix

Description: Very few remains of W-E wall (and foundation trench?) N of F13. Set against artificial terracing-layer of gravel to the S. Bottom c. 30cm lower than level of terracing in the W. In the westernmost 2m probably cut by either F29 or joining to Wall F39 (unclear). Level of terracing is sloping towards E until it reaches bottom level of F38. Bottom consisting of rather loose gravel, in some areas still covered with sand. On top very few remains of the possible mud brick structure. At 8.4m W-E two bricks in very bad condition still in situ. At 6.5m and 5m W-E some possible remains of bricks or filling of foundation trench at S-edge; N-edge at 4.7m W-E. At 1.5m W-E eastern outline of one row of bricks, very poorly preserved. To the N limited by gravel layer (with possible floor remains?) some 5–10cm below bottom level (SU 51) in the W, in the E no difference in level between F38 and bottom surface of SU 51.

Dating/Interpretation: Wall of a room/unit to the north of Building A's courtyard?; 18th Dynasty.

No. of feature: 39

Location of feature: SQ1B, 0–1.5m W-E/0–4m N-S

Main category: Wall

Measurements of feature: L: min 4m; W: min 0.9m; H: c. 0.3m preserved

Stratigraphy: See Harris Matrix

Description: Few remains of N-S wall (and foundation trench) N of F29 at W-edge of square. S-end not precisely distinguishable due to disturbances by pit F29. W-edge and N-end outside of limits of excavation. Possible 2 brick thick wall, very poorly preserved. At 2.5m N-S one stretcher in uppermost layer preserved in situ: 34 × 12 × 9cm. Three to four more rows of stretchers towards the N visible in W-profile, but badly preserved. On bottom layer of gravel. Towards W limited by area 5–10cm below bottom level (SU 51).

Dating/Interpretation: Wall of a room/unit to the north of Building A's courtyard?; west of F38; 18th Dynasty.

No. of feature: 40

Location of feature: SQ3, 0.1–2.4m W-E/6.6–7.4m N-S

Main category: Wall

Measurements of feature: L: 2.2m; W: 0.57m; H: 0.22m

Stratigraphy: See Harris Matrix (contemporaneous to F45)

Description: 1 ½ brick wide W-E wall, west of F36. Two layers of bricks preserved. One stretcher, one header each: 34x16x-10cm. Until 1.5m W-E complete outline preserved; 1.5–2.4m W-E only southern edge preserved.

Dating/Interpretation: Part of domestic building/unit; early 18th Dynasty?; probably formerly connected with F45.

No. of feature: 41

Location of feature: SQ3, 0–2.5m W-E/7.1–8.5m N-S

Main category: Floor

Measurements of feature: L: 2.5m; W: 1.4m

Stratigraphy: See Harris Matrix

Description: Floor pavement between F40 and F46, east of F35/36. Cut away in the east towards F36 by later disturbances also cutting into F36. To the S disturbed by F46. State of preservation declining from SE to NW. Sits on top of gravel, which is partly visible in less well-preserved areas. Consisting of loamy mud.

Dating/Interpretation: Pavement of building set up by F40 and 46; early phase of occupation.

No. of feature: 42

Location of feature: SQ3, 3.4–5.8m W-E/0–10m N-S

Main category: Floor

Measurements of feature: L: 10m; W: 2m

Stratigraphy: See Harris Matrix

Description: Floor plaster on levelled area between F35 and F43. In some parts very thick layer remaining, but also several big holes through which gravel layer underneath is visible. Surface is in general very uneven. In some parts, especially to the N, thin lines, probably scratched or hacked into the floor. At 5–6.2m N-S it still touches some remains of F36. To the E it only runs against remains of F44 in the very north, otherwise connection to F43/44 is lost. Between 3.3–4.1m, 5.3–6.4m and 8.7–9.5m N-S at eastern edge remains of small mud brick structures attached, but no connection to F43/44; either installations of some kind or levelled part of Wall F44. Material is compact and loamy.

Dating/Interpretation: Pavement of building set up by F35 and F43/44; early phase of occupation.

No. of feature: 43

Location of feature: SQ3: 5.9–9m W-E/0–10m N-S; SQ4: 7.1–10m W-E/0–6m N-S

Main category: Foundation trench

Measurements of feature: L: 16.5m; W: 1.3m; H: ca 0.35–0.45m

Stratigraphy: Contemporaneous to F25 and 42; F44

Description: Foundation of Wall F44. Longitudinal ditch running N-S. In SQ3 no eastern edge – bottom level equals floor level below SU 70. One exception: N of remains F13 1m of E-edge running into limits of excavation. W-edge against limit of artificial terracing – top edge = bottom level of F42. In SQ4 no straight eastern edge but rather sloping towards W. Regular W-edge between 2.3–6m N-S. In area of sandy disturbance/F15 between 0–2.3m N-S W-edge extends about 1m to the W; no E-edge at all in that area; F15 cuts the trench. At 6m N-S it runs into the trench of F16. Northern extension unclarified, runs further north of F13 and into limit of excavation. Contains remains of Wall F44.

Dating/Interpretation: Foundation trench of Wall F44 of Building A, mid-18th Dynasty.

No. of feature: 44

Location of feature: SQ3: 5.9–9m W-E/0–10m N-S; SQ4: 7.1–10m W-E/0–6m N-S

Main category: Wall

Measurements of feature: L: 16.5m; W: 1.1–1.2m; H: max 0.45m

Stratigraphy: Contemporaneous to F13, 25, 42 and 43; younger than oldest phase of Thutmose III; set on SU 1336

Description: heavily disturbed remains of N-S wall east of F36 in Building A. Set against artificial levelling at area of Floor F42 to the W. Northern end beyond limits of excavation. Junction with W-E Wall F13 at c. 1m N-S. Ends to the south at junction with W-E Wall F16. Two and half to three bricks strong. Max. 4 layers of bricks preserved (possible 4th layer in very bad condition). Brick measurements: 32 × 14 × 8cm. In SQ4 almost no remains. Was set into F15.

Dating/Interpretation: F44 was one of the main walls of Building A (western side of courtyard). The part of Wall F44 in F15 was removed in 2016; it was set on top of SU 1336, its base was 20–22cm above the pavement of F15. SU 1336 was identical with the lower filling of F15 in the eastern part, very organic-rich ashy deposits, mixed with some pebbles. Directly below Wall F44 a stamped seal impression with the cartouche of Thutmose III was found (SAV1E 0203); Wall F44 must, therefore, be later than the early-mid reign of Thutmose III.

No. of feature: 45

Location of feature: SQ3, 0–1.4m W-E/3.8–6.8m N-S

Main category: Mud brick wall and floor

Measurements of feature: L: 2.7m; W: 1.4m; H: c. 0.25m

Stratigraphy: contemporaneous to F40

Description: Slight depression, almost rectangular with few mud brick remains. Surrounded by floor remains to N and E; limited by F40 in the S. Western edge uncertain due to limits of excavation. Floor remains on top of gravel, not preserved at eastern edge. Several ashy spots on top of floor. One substantial deposit of ash in SW-corner/W-profile on top of floor pavement. Runs against F40.

Dating/Interpretation: A floor belonging to E-W Wall F40; once also a N-S wall possible, but mud bricks ripped out, only faint traces; 18th Dynasty.

No. of feature: 46

Location of feature: SQ3: 8.3–10m N-S/0–2.7m W-E; SQ4: 0–3.7m N-S/0.2–3.0m W-E

Main category: Pit

Measurements of feature: L: 5.9m; W: 2.8m

Stratigraphy: Post-New Kingdom (cuts E-W wall)

Description: Irregular shaped pit, to N almost circular, with small round appendix in S; cuts into E-W mud brick wall, filled with loose and mixed material including mud brick fragments; bottom base on gravel terrace.

Dating/Interpretation: Evidence for Post-New Kingdom destruction of mud brick structures at SAV1 East; maybe Ottoman.

No. of feature: 47

Location of feature: SQ1B, 0.6–2.1m W-E/4.5–5.0m N-S

Main category: Wall

Measurements of feature: L: 1.5m; W: 0.19m; H: 0.16–0.30m

Stratigraphy: Set into F29

Description: Half brick strong W-E wall set into F29 (pit/silo). Two layers of stretchers preserved. Each layer consisting of 4 ½ bricks. On top of westernmost brick remains of one stretcher of possible third brick layer. Wall set right on top of gravel bottom and against gravel edge of pit F29. Brick measurements: 30/31 × 19 × 8cm, made of unburnt mud.

Dating/Interpretation: Interior wall of pit/silo; maybe New Kingdom? Silos with dividing walls are also known from Kerma city (e.g. silo 758 of M224, see Bonnet 2014, 44–45).

No. of feature: 48

Location of feature: SQ4, western half: 0.6–3.3m W-E/5.3–6.4m N-S

Main category: Floor

Measurements of feature: c. 1.7m × 1.2m; H: c. 2–4cm

Stratigraphy: Probably contemporaneous to F45

Description: Floor with irregular shape due to bad preservation. Towards E seems connected to F45, N-S wall remains. Towards N lies F46 wall, but no connection here. Towards W mud bricks in situ connected with floor. On top of floor is a c. 10cm thick compact layer of mud/loam mixed with some pottery and charcoal. Material of flooring is mud/loam on top of pebble (decomposed mud bricks).

Dating/Interpretation: Probably pavement of “entrance room” in western part of Building A; early phase? (18th Dynasty).

Finds: SU 205: 1054–1064, 1089–1093, 1094–1113/2015

No. of feature: 49

Location of feature: SQ4, SW-corner: 2.8–4.6m W-E/7.6–8.3m N-S

Main category: Wall

Measurements of feature: L: 2(–2.2)m; W: 0.8m; H: 0.4m

Stratigraphy: On top of F50

Description: E-W running remains of mud brick wall. Badly preserved and whether outlines crossed or are connected with F36 or F16 remains unclear (although it seems to be abutting on the western side). The corpus of the wall is cut in the middle by a pit, c. 40cm deep. Eastern and western extensions/outlines unclear/not preserved. Towards the W the wall is partly cut away. Towards the N connection with another brick structure. Towards the W and E there is a connection to Floor F50. S-wall remains sit on layer of diverse use (mixed with pottery and ashy remains, charcoal pieces). Below this stratigraphic deposit is Floor F50. Three courses of bricks preserved. Bottom layer stretchers, on top headers, then again stretchers. Brick measurements: 36 × 16 × 10cm.

Dating/Interpretation: Belonging to western units of Building A; early to mid-18th Dynasty.

Finds: SU 205: 1065–1071, 1114–1124, 1137–1149/2015; SU 206: 1145–1147/2015; SU 214: 1255–1264/2015; SU 224: 1329–1331/2015

No. of feature: 50

Location of feature: SQ4+4A, SW half/corner: 0.8–3.9m W-E/7.6–11.40m N-S

Main category: Floor

Measurements of feature: 3.1 × 3.8m

Stratigraphy: Contemporaneous with F51, 52, belonging to 51

Description: Floor with irregular shape, slightly rectangle trough limitations by Wall remains F49 towards the N, Wall remains F52 towards the E, Wall remains F51 towards the W and S by limits of excavation. Floor runs below F49. Not entirely preserved, cut away in SE. Floor material is loam/mud, on top of pebble. Connected with F51 (E). F52 Wall sits on top of floor. Best connection to F51; F52 faded and disturbed. Close to F51 Wall (W) small pit/disturbance with grinding stone piece inside (similar to SAV1 North).

Dating/Interpretation: Earlier building phase than Building A?; possibly older than F49.

Finds: SU 226: 1334–1344/2015; SU 227: 1345–1359/2015; SU 228: 1360–1371/2015; SU 205: 1065–1079, 1125–1136, 1137–1144, 1149–1160, 1161–1172/2015

No. of feature: 51

Location of feature: SQ4+4A, SW-corner: 0.3–1.5m W-E/9–11.3m N-S

Main category: Wall

Sub category: Part of structure

Measurements of feature: L: 2.20m; W: 0.78m; H: 1.10m (final: L: 4.20m; W: 0.35–0.50m, H: 1.10m)

Stratigraphy: Contemporaneous to F50; probably connected to F58

Description: Slightly T-shaped remains of N-S running mud brick wall, preserved to 1.10m height. Cut away towards the N and S, towards the W it runs into section of excavation and seems to continue further W (status 2015). On top is *muna*. Eastern façade has whitish plaster on it. Inside of northern part of structure (corner) are traces of firing/burning – some bricks are red and black. Mud bricks laid alternately in headers and stretchers. 6–7 layers preserved. Floor F50 is connected to wall. Brick measurements: ? × 16 × 10cm.

12.08.2016: 2016 season of excavation clarified situation of Wall F51. It appears now as much extended wall towards N and S: max. length of 4.2m. The width varies from 0.35m to 0.50m. The former T-part now also extends further W (E-W: 1.10m). This part is badly preserved and contains a reddish, big stone together with ceramics in the construction. In line (c. 0.25m distance) lie wall remains of F58, but without a junction, because it is disturbed/hacked away. However, most probably we can assume a connection to Wall F58. In the N of the wall the lowest layer of the construction could be uncovered with a row of headers. At the inner SW-corner the headers turned to more broken undefined mud brick remains. The southern extended part is only preserved as a base layer of bricks. The bricks are cut off, however they must have been headers. The southern end seemed cut off as well – but here the not yet fully excavated area starts. At approx. 3.5m N-S another base layer of bricks (headers) is connected to the wall and runs E-W. The bricks of that E-W layer are disturbed and hacked away by the same disturbance as the N-S running base layer. The eastern end is cut off. The preserved length of this structure/layer is c. 1.30m. To the W of the wall a small foundation trench showed up, then the mud floor F78 follows further W. The floor level of the western side of the wall is higher than on the eastern outer side. Related SUs: 352, 377, 374, 424, 453, 459, 460.

Dating/Interpretation: F51 seems to be the T-part of a structure extending to the N and S, with the western extension of F51 as dividing wall of two units/rooms; possibly connected to the structure is the storage installation F75 to the NE. F51 belongs to the earliest building phase at SAV1 East and seems to predate Building A.

Finds: SU 200: 1000–1007/2015; SU 205: 1065–1079/2015; SU 215: 1265–1270/2015; SU 216: 1271–1274/2015; SU 217: 1276, 1278/2015; SU 218: 1277, 1279–1283/2015; SU 227: 1345–1350/2015; SU 228: 1360/1371/215

No. of feature: 52

Location of feature: SQ4+4A, central S part: 4.15–4.35m W-E/8.6–10.20m N-S

Main category: Wall

Measurements of feature: L: 1.62m; W: 0.20m; H: 0.27m

Stratigraphy: Contemporaneous with F50

Description: Badly preserved mud brick wall remains. N-S running, eventually in line with Wall F45. Towards N no connection to Wall F49, but connected to Floor F50. Towards W the connection to the floor is cut by a disturbance. Wall remains set into pebble. Southernmost brick in disturbance/pit sits on loose material (SU 205/213). Brick measurements: 38/41 × 16/19 × 10/12cm

Dating/Interpretation: Earlier building phase than Building A?; could belong to the same structure as F51, but connection is missing.

Finds: SU 202: 1009–1021/2015; SU 205: 1065–1079, 1137–1144, 1449–1160, 1161–1172/2015; SU 214: 1255–1264/2015

No. of feature: 53

Location of feature: SQ4+4A, central S part; 8.8–11.6m N-S/4.9–5.6m W-E

Main category: Wall

Measurements of feature: L: 3.1m; W: 0.34m; H: 0.25 m

Stratigraphy: Contemporaneous to F54

Description: N-S running remains of mud brick wall; isolated except for floor to the E. Towards the S it runs through the section, probably continues there? No visible connection to the N, seems cut away, but probably in line with remains of either F49

of F16? Badly preserved, towards S cut away in between. Two bricks besides layer of headers. Three (bad condition) bricks high, all headers. Wall sits on Floor F54 towards the E. Eventually this part of mud brick remains belongs to corner of F55? Brick measurements: 30/32 × 15 × 10cm.

Dating/Interpretation: Earliest phase to S of Building A; maybe neighbouring building to F51 (same orientation and construction, similar floor).

Finds: SU 211: 1207–1209/2015; SU 213: 1225–1254/2015; SU 214:1255–1264/2015; SU 230: 1383–1391/2015; SU 231: 1392–1394/2015

No. of feature: 54

Location of feature: SQ4, SE-corner: 5.2–9.2m W-E/9.9.8m N-S

Main category: Floor

Measurements of feature: 4 × 0.8m

Stratigraphy: Contemporaneous to F53 and F55

Description: Floor of irregular shape, because of bad preservation condition. Towards the W and S connected to Wall F53 and Wall F55. Wall F53 sits on top of the floor. Eastern part and southern end connected with Wall F55. In the eastern part floor is disturbed and cut away; a small patch of floor towards the east connected to F55 probably represents the same horizon but is not connected. Material of floor is mud/loam on top of pebble.

Dating/Interpretation: This floor seems to cover the interior of the room created by Wall F53 in the west and Wall F55 in the S; early 18th Dynasty, pre-dating Building A.

Finds: SU 202: 1009–1021/2015; SU 213: 12225–1254/2015; SU 233: 1401–1403/2015

No. of feature: 55

Location of feature: SQ4+4A, SE-corner: 5.65–10.3m W-E/9.7–10.3m N-S

Main category: Wall

Measurements of feature: L: 4.75m; W: 0.17–0.67m; H: 0.35m

Stratigraphy: Contemporaneous to F54, F56 (also to F20?)

Description: E-W running remains of mud brick wall, half-brick thick. To the N built against pebble from which also floor remains of F54 runs over/above the wall (connected to F54). Towards S Floor F56 is connected with the wall in the area of the most western brick. Floor F56 is also connected with a parallel running stone terracing wall. In middle area two bricks are visible which were set against the wall (towards the S) – could be a kind of a pilaster (see SAV1 North). Connected with the possible pilaster is a very compact layer mixed with pebbles in a curving shape, which runs S towards mud brick remains on top of the terracing stone wall. Below this thick layer are remains of mud flooring (F56). The wall is a structure of one row headers, beside two rows of possible pilaster bricks and two (three) layers of headers preserved. Brick measurements: 40 × 17 × 10cm.

Dating/Interpretation: Part of an early structure at SAV1 East; southern wall of unit/room with F53 as western wall; presumably an interior of a building, see floor towards the south (F56); early 18th Dynasty. F20 in SQ2 seems to be the eastern wall of this structure, but it is not connected to it.

Finds: SU 213: 1225–1254/2015; SU 230: 1383–1391/2015; SU 232: 1395–1401/2015; SU 233: 1401–1402/2015; SU 234: 1043–1407/2015; SU235: 1408–1413/2015; SU 239: 1435–1441/2015

No. of feature: 56

Location of feature: SQ4+4A, SE-corner: 5.7–8.1m W-E/0.3–1.6m N-S

Main category: Floor

Measurements of feature: 2.4 × 1.3m

Stratigraphy: Contemporaneous to F55 and F57

Description: Floor with irregular shape due to bad preservation and disturbances. Towards the N the mud floor is connected to the F55 Wall and to the S to F57, the stone terracing wall. To the E the flooring is cut away or disturbed and shows up again below the presumed pilaster bricks of the F55 wall. In this area there is also a thick loam/mud layer mixed with pebbles in a curving shape above the floor – most probably the coating of the pilaster (cf. SAV1 North, N24Pil3, Doyen 2017, 41–43, figs. 19–20).

Dating/Interpretation: Early level at SAV1 East; connected with F57.

Finds: SU 241: 1444–1448/2015; SU 239: 1435–1441/2015; SU 240: 1442–1443/2015; SU 232: 1395–1401/2015; SU230: 1383–1391/2015; SU 213: 1125–1254/2015

No. of feature: 57

Location of feature: SQ4A+2A, SE-corner: 6.1–11.5m W-E/0.3–1.8m N-S

Main category: Structure

Sub category: Stone terracing wall

Measurements of feature: 5.4 × 0.6m

Stratigraphy: Contemporaneous to F55 and F56

Description: Terracing wall made of stones set against the pebble. E-W running. Runs through southern section of SQ4A and most probably continues there. Parallel to the stone terracing wall in SQ2A. Stones are neither worked nor are architectural pieces. Stones set up irregularly, undefined. Mainly sandstone. Mud bricks were laid in a row of headers on top of stones. In the W-part two layers high preserved. In E-part no mud bricks are any longer visible. Mud pavement F56 is connected to the stone terracing wall in the western part and in the middle sector. In the middle sector on top of the connected floor is a thick layer of mud/loam in a curving shape, which also runs towards the stone wall and is to the S connected to the pilaster mud bricks of F56. Mud bricks in no good state of preservation for measurements: length at least 33cm × 15 x 10cm. Stones have various sizes from 20 × 24 × 15cm to 50 × 25 × 20cm.

Dating/Interpretation: Dry-stone wall of a building phase pre-dating Building A at SAV1 East; maybe inspired by Kerma *galoos*-technique; important link to the area around Temple A. Early 18th Dynasty. Probably western extension of F20.

Finds: SU 238: 1427–1434, 1449–1453, 1457–1460/2015; SU 240: 1442–1443/2015; SU 241: 1444–1448/2015; SU 239: 1435–1441/2015; SU 236: 1416–1423/2015; SU 235: 1408–1413/2015; SU 234: 1403–1407/2015; SU232: 1395–1401/2015; SU 230: 1383–1391/2015

No. of feature: 58

Location of feature: SQ4B

Main category: Wall

Measurements of feature: L: 2.8m; W: 0.55m; H: 0.30m

Stratigraphy: Contemporaneous to F51 and F59

Description: E-W running wall, badly preserved. From all sides hacked away, only N-side/face at western end is in this sense not destroyed (probably). Wall is in line with T-shaped Wall F51, but not really connected, because disturbed in that part. A slight slope towards the E is visible. Concerning the height, three layers are preserved. The building technique seems to change (maybe due to slope) from stretchers as the lowest row in the W to headers from the middle on towards the E. There again, a single row of stretchers seems to be below the header. The wall abuts the higher level (pebble terrace) N of it. Brick measurements: 32 × 15 × 6cm. The eastern most underlying header is slightly smaller with a width of 11cm. Related SUs: 451, 452, 386, 346.

Dating/Interpretation: This wall is maybe the southern wall of an elongated room which integrates F51+F59; the unit belongs to the early 18th Dynasty.

No. of feature: 59

Location of feature: SQ4B, northern half

Main category: Wall

Measurements of feature: L: 0.80m; W: 0.20m; H: 0.91m

Stratigraphy: Probably contemporaneous to F58

Description: E-W running remains of mud brick structure, possibly wall. Very badly preserved. Only one brick is still visible, but also much destroyed and eroded. The brick is surrounded by mortar/*muna* and is sitting on top of *muna*. To the W only the mortar of a further possible mud brick is preserved. The mud brick is laid out as stretcher. Measurements: 36 × 15 × 9cm. Related SU 387, 359.

Dating/Interpretation: F59 is maybe the remaining part of an interior wall of a room which integrates F51+F58; the unit belongs to the early 18th Dynasty.

No. of feature: 60

Location of feature: SQ4B, eastern part at junction to SQ4

Main category: Wall

Measurements of feature: L: 0.49m; W: 0.55m; H: 0.35m

Stratigraphy: Probably contemporaneous to F59, F58 and F51

Description: Slightly T-shaped structure aligned N-S. Badly preserved. Hacked away to the N, W and S. To the E lies the foundation trench of F51 (wall). The structure itself is erected above a mud floor. Below the mud floor the pebble is visible. The remains are preserved to the height of 4 layers of mud brick. The first row are stretchers, above are 3 layers of headers, in between is *muna* mixed with some smaller pebbles (2–3cm). The northern end of the structure is only visible due to mortar impressions of mud bricks. Brick measurements: 36 × 15 × 9cm. Related SUs: 412, 385.

Dating/Interpretation: F60 is maybe part of a room/unit, involving F51, F58 and F59 from the early 18th Dynasty.

No. of feature: 61

Location of feature: SQ4B, eastern limits of excavation at junction to SQ4A

Main category: Wall

Measurements of feature: L: 1.35m; W: 0.35m; H: 0.42m

Stratigraphy: Contemporaneous to F60 and F51

Description: E-W running mud brick wall. Badly preserved. E- and W-ends were hacked away. Fragments of mud bricks, possibly from structure, were lying next to it, out of place – one in the little pit/disturbance to the W. In the NW a piece of mortar impression from a mud brick survived. Below the structure the pebble is visible. The remains are preserved to a height of four

layers of mud bricks. All layers are laid out as headers, with mortar in between. Brick measurements: $36 \times 15 \times 9$ cm. Related SUs: 444, 431.

Dating/Interpretation: The structure was maybe connected to the southern remains of mud brick Wall F60 and also Wall F51; early 18th Dynasty.

No. of feature: 62

Location of feature: SQ4B

Main category: Wall

Measurements of feature: L: 0.55m; W: 0.28m; H: 0.33m

Stratigraphy: Contemporaneous to F59 and F63 (and maybe F58, 51)

Description: N-S running remains of mud brick structure, badly preserved. N- and S-ends were hacked away. The structure is sitting on a mud floor F63, which continues a bit further south. Below the floor the pebble is visible. A height of four layers is preserved. All seem to be stretchers, in between mortar. Brick measurements: $30 \times 13 \times 7$ cm. Related SUs: 388, 358.

Dating/Interpretation: Could be part of (back) wall of a room formed by that wall and F59; early 18th Dynasty.

No. of feature: 63

Location of feature: SQ4B+4C

Main category: Floor

Measurements of feature: 2.30×1.25 m; H: c. 10cm

Stratigraphy: contemporaneous to F62 and F64

Description: The mud floor is preserved from the height of F62 and runs towards S to Wall F64 and is connected with that wall. The eastern part is clearly hacked away, the western extension is unknown, because of limits of excavation, but presumably continues to the W. Above the floor, N of the wall remains, a baking plate with stratification deposit (SU 449) was found (Fig. 31). The place is now indicated by traces of reddish-black colour on mud floor (burnt). Further to the N, where the floor remains start, is a small depression, c. 50×40 cm, in which the floor remains (or fragments of brick) also show traces of possible firing or burning, because of the same reddish-brown colour (see F77). Related SUs: 449, 474, 390. The stratigraphy under the baking plate was sampled for micromorphology (SM 02).

Dating/Interpretation: Presumably an open-air area where cooking/baking activities took place? Early 18th Dynasty.

No. of feature: 64

Location of feature: SQ4C, western half

Main category: Wall

Measurements of feature: L: 0.90m; W: 0.80m; H: 0.35m

Stratigraphy: Contemporaneous (or younger) than F63

Description: Probably E-W running mud brick structure which is connected to the northern mud flooring F63. The flooring also continues to the southern end of the wall (runs below). The structure itself is quite massive with large mud bricks, however it is hacked away to the E, S and W. Preserved to a height of four layers. All layers seem to be stretchers, except the lowest bricks to the southern end are three headers. Brick measurements: $38 \times 18 \times 9$ cm. Related SUs: 380, 348. The junction of the wall and pavement was sampled for micromorphology (SM 09).

Dating/Interpretation: Fragment of an E-W wall of a structure; probably slightly younger than the open-air area with F63, 18th Dynasty.

No. of feature: 65

Location of feature: SQ4C, SW-corner

Main category: Wall

Measurements of feature: L: 2.9m; W: 0.35m; H: 0.36m

Stratigraphy: Contemporaneous with F64

Description: E-W running wall made of mud bricks. The western end runs into the limits of the excavation and possibly continues further to the W (see 2017: hacked away). But only one row of mud bricks is preserved, the rest is hacked away, although there are many destroyed and weathered remains of mortar brick impressions, which continue in line

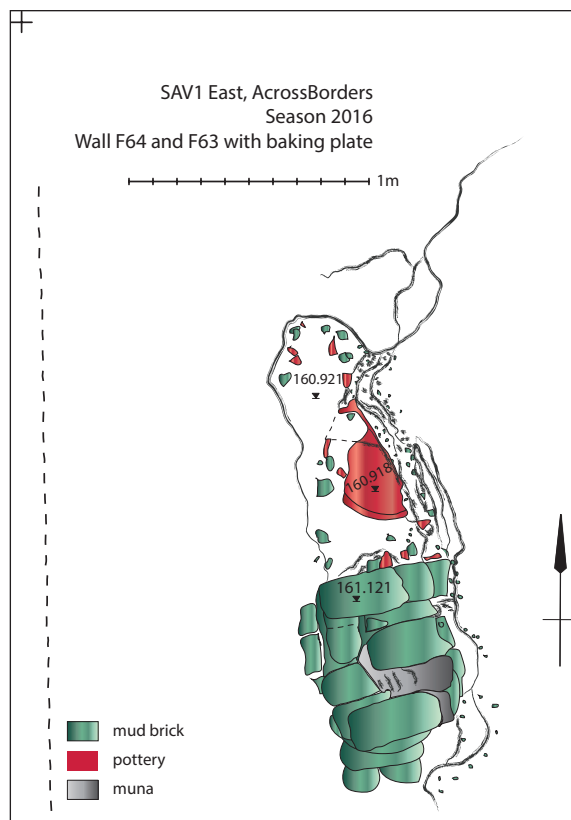


Fig. 31 Wall Feature 64 and Floor Feature 63 with baking plate in situ

with the wall (over approx. 2.40 m) and therefore presumably belonging to the same wall. Preserved height of four layers. The layers are all headers (topmost uncertain), to the eastern side it changes from header, two stretchers to headers again (only one layer preserved here). In a distance of *c.* 5–10cm (filled with pebble and presumably mortar) a row of stretchers is laid out S of the header-complex (western end turns into the baulk/section, southern end is also hacked away). A few mortar impressions of the upper row of mud brick are still preserved. To the S, at the height of the end of the wall structure, some more N-S running remains of mortar impressions are preserved and were maybe connected with the wall because it is direct in line with the last preserved header of the wall, however no direct connection is preserved. To the N the wall is connected to a mud floor. This floor is also connected to the wall remains of F64 (distance approx. 0.70m). To the S, in a distance of *c.* 0.60m, the wall and schist flooring remains of F66 are situated, but were not connected through mud flooring; only the pebble is still visible. Brick measurements: 31 × 15 × 9cm. Related SUs: 404, 399, 388.

Dating/Interpretation: Fragment of an E-W wall of a structure; cf. F64, 18th Dynasty. The floor between the two structures might be a street level/horizon.

No. of feature: 66

Location of feature: SQ4, SW-corner

Main category: Wall remains with connected schist floor

Measurements of feature: L: 1.5m; W: 1.6m; H: 0.35m

Stratigraphy: Belongs to floor covering of F85, possibly contemporaneous to Wall F84

Description: Directly at the SW-corner of the square, limited by the limits of excavation (extended as SQ4C and 4D in 2017). It is a substantial mud floor, *c.* 30cm thick, with above lying schist plates which are bounded by white plaster. The mud foundation seems to have at least 2 phases; the lowest layer almost looked like solid brickwork. The mud flooring/foundation is hacked away on the northern and southern sides. On top of the schist pavement lies a big fragment of sandstone (= SAV1E 2904). To the E remains of a wall structure out of mud brick were connected with the substantial mud foundation. A micromorphological sample was taken from the mud flooring/foundation (SM 01). Related SUs: 375, 378, 349.

Dating/Interpretation: Thutmoseid; presumably schist floor of magazine building (will be published in detail elsewhere).

Addition: Clear from work in 2017 that the schist pavement continued from SQ4 to 4C to 4D (see F85).

No. of feature: 67

Location of feature: SQ4B1, eastern half

Main category: Wall

Measurements of feature: L: 3.3m; W: (0.55) 0.70m; H: 0.29m

Stratigraphy: Contemporaneous or older than F69

Description: Hacked out, N-S running remains of mud brick wall. Northern end runs into limits of excavation. Towards the S the mud bricks are connected to the mud bricks of the wall remains of F68, but they were not set in the same line and out of angle. Only the outer row of mud bricks is preserved, however in no good condition. Directly adjacent runs the further wall structure F69 N-S and either the eastern outer side of mud bricks from F69 were lying/set against the wall or they may be sharing the same wall. This is not clear also due to the change in line/angle to the other walls F76+69. E of the wall structure mud flooring is preserved in which the outline of the not preserved mud bricks are still visible. Brick measurements: 32 × 17 × 9cm. Related SUs: 428, 426, 413.

Dating/Interpretation: Part of a 18th Dynasty structure; alignment see Building A and earlier phase.

No. of feature: 68

Location of feature: SQ4B, N-part

Main category: Wall

Measurements of feature: L: 1.62m; W: 0.57m; H: 0.27m

Stratigraphy: Contemporaneous to F67?

Description: N-S running mud brick wall in northern part of square at junction to SQ4B1. At the northern end it is connected to another remnant of a mud brick wall (F67), although not as direct extension, but rather slightly out of angle towards the W. The mud brick wall itself is badly preserved, not one entire brick is visible or in place any longer. The N-end is slightly better preserved, here at least the length of the brick is attested. The southern part is almost completely hacked away. The height is preserved to two layers of brick. One layer of headers, above a row of stretchers. The wall is situated on pebble/mud flooring, also hacked away almost completely. To the W is Wall F69 (distance 0.44m). Brick measurements (taken by several ones): 32 × 16 × 9cm. Related SUs: 391, 347.

Dating/Interpretation: Part of an 18th Dynasty structure; alignment see Building A and earlier phase.

No. of feature: 69

Location of feature: SQ4B1+4B

Main category: Wall (and schist pavement)

Measurements of feature: L: 5.35 m; W: 1.58; H: 0.45 m

Stratigraphy: Contemporaneous or younger than F67

Description: N-S running mud brick wall. The northern end runs into the limits of the excavation and continues there. Part of the wall or mud brick is even visible on the recent surface. The southern end is hacked away as well as the inner part of the wall – only one connecting E-W running row of bricks (also badly preserved) is preserved. The outer face of the wall is plastered, well visible on the western side of the wall. It is preserved almost over the entire length of the wall. The eastern outer wall is maybe a joint wall with Wall F67 – although not clear, maybe two building phases. A height of four layers is preserved. The western side/wall is laid out as headers, except the southernmost underlying bricks (first layer) are set out as two stretchers and one stretcher in the third layer. A few centimetres further S remains of mud bricks (F70) occur and were visible in line with the wall but were not connected. It is possibly a further extension of F70, which is also laid out as headers. The western side is connected to the schist plates and the stratification deposit below them through a mud floor. This floor was sampled for micromorphology (SM 08). Brick measurements: $32 \times 15 \times 9$ cm. Related SUs: 423, 405, 401.

Dating/Interpretation: Probably a magazine wall, mid-18th Dynasty, with a schist pavement.

No. of feature: 70

Location of feature: SQ4B

Main category: Wall

Measurements of feature: L: 0.90m; W: 0.80m; H: 0.25m

Stratigraphy: Contemporaneous with F69

Description: E-W running remains of a wall structure, badly preserved. Hacked away at northern and southern ends. To the N, in 25cm distance, the remains of Wall F69 are situated, but there is no connection, it is, however, aligned with F69. Two layers are preserved, all stretchers. Brick measurements: $32 \times 16 \times 9$ cm. Related SUs: 366, 336.

Dating/Interpretation: Probably E-W wall of mid-18th Dynasty magazine with schist pavement.

No. of feature: 71

Location of feature: SQ4B1, western half

Main category: Floor

Sub category: Schist plate pavement

Measurements of feature: L: 0.95m; W: 0.16–0.45m; H: 1–4cm (with stratification remains 22–23cm)

Stratigraphy: Lies above F72, but is presumably contemporaneous

Description: Two connected schist plates which are connected by white plaster also sitting above the schist plates. Partially preserved to a height of 3–4cm (the plaster). On top of the southern plate and plaster are remains of loamy material/deposit along with some pebbles, 3–4cm, as inclusions. The schist plates are situated above the stratification deposit; the deposit itself is solid and mixed with some bone, pottery, charcoal. The deposit is situated above the surrounding *muna* floor. Related SU: 414.

Dating/Interpretation: Schist pavement of mid-18th Dynasty magazine.

No. of feature: 72

Location of feature: SQ4B1, western half

Main category: Stratification deposit

Measurements of feature: 1.5m W-E; 1.2m N-S; H: 10–30cm

Stratigraphy: Lies below F71, but presumably contemporaneous

Description: L-shaped. Directly adjacent to mud bricks (N-S) and also situated above them (F69). The northern part of the stratification remains also runs below the schist plates of F71. The stratification remains consist of compact loamy material mixed with charcoal. In between seem to be several “layers” of flooring. Material defined as SU 470. A sample was taken for micromorphology (SM 03). Connected with F82, the E-W wall toward the W. Related SU: 470.

Dating/Interpretation: Foundation for schist pavement of mid-18th Dynasty magazine.

No. of feature: 73

Location of feature: SQ4B1, NE-corner of excavation limits

Main category: Pit

Measurements of feature: Outer extensions: L: $1.55 \times$ W: 0.85m; inner extensions: $1.47 \times$ 0.80m; H: c. 0.50m

Stratigraphy: Cuts into gravel and debris layers

Description: The pit is only partially excavated due to the limits of the excavation (N). For stabilisation of the section and better working conditions, a wall of modern, red burned bricks was built against the section. The pit was found filled with fine, light sand. Towards its bottom were a few mud brick fragments. The pit is dug into the pebble and cuts the adjacent mud floor above (to the W).

Dating/Interpretation: Evidence of Post-New Kingdom destruction.

No. of feature: 75

Location of feature: SQ4

Main category: Storage pit

Measurements of feature: Outer extensions: L: 0.87 × W: 0.82m; inner extensions: 0.76 × 0.67m; H: ca 0.24m

Stratigraphy: Contemporaneous to F51?

Description: Storage pit with a slightly trapezoid shape. Laid out in mud – floor and sides. Above the gravel terrace with mud floor and to the W lies the N-S wall F51. A sample was taken for micromorphology (SM 11). Related SUs: 465, 462, 461, 458, 454, 442.

Dating/Interpretation: Early 18th Dynasty storage pit, cf. Azim's structures around Temple A; within structure encompassing Wall F51.

No. of feature: 76

Location of feature: SQ4C, western half

Main category: Storage pit

Measurements of feature: L: 1.06m; W: 0.75m; H: 0.15m

Stratigraphy: Contemporaneous with F63 and 77

Description: Storage pit with a square shape, laid out in mud – floor and sides. Set in the pebble terrace. The western and northern sides seem to be set directly on top of the outlines of the pit (mud bricks). At the western side above the bricks, pebble shows up and on top of the pebble a mud floor was laid out, which shows traces of firing of some baking installations (see F77+63). Here the baking plate was found. Samples were taken of the filling material (NW-corner, SM 06 and 10). Related SUs: 473, 469, 440.

Dating/Interpretation: Early 18th Dynasty storage pit, cf. Azim's structures around Temple A; maybe connected with the baking area F63+77.

No. of feature: 77

Location of feature: SQ4C

Main category: Baking installation

Measurements of feature: Northern one: approx. 0.50 × 0.70m; southern one: approx. 0.55 × 0.55m

Stratigraphy: Contemporaneous to F63 and F64

Description: Only traces of these baking installations are preserved, indicated by a reddish-black coloured mud floor (F63). The mud floor itself is connected to the wall remains of F64 in the S. The northern trace has an oval shape and the inner part is of reddish colour, which turns to brownish-black on the outlines. The southern one has an almost rectangular shape and is also reddish coloured in the middle and brownish-black on the outlines. The baking plate was found in situ above this spot with a stratification deposit below (on top of the floor). To the W is the limit of the excavation profile. For the baking plate, see F63 and SU 449. Related SUs: 449, 474, 390.

Dating/Interpretation: Open-air area with baking plate; 18th Dynasty.

No. of feature: 78

Location of feature: SQ4B+4C

Main category: Mud floor

Measurements of feature: L: 4.1m; W: 2.5m; H: 3cm

Stratigraphy: Contemporaneous to F51, F58 and F79

Description: Elongated shape, not entirely preserved. Especially in the middle only the underlying pebble is still visible. In the SW a block of stratification deposit (L: 0.60m, W: 0.50m, H: 0.20m) is situated on the floor and was left there at the end of season intentionally/on purpose. Related SUs: 475, 467, 456, 455, 443, 437, 436, 396.

Dating/Interpretation: The floor connects the wall F58 in the N, Wall F51 in the E and Wall F79 in the S, which all together would shape an elongated room. Early 18th Dynasty.

No. of feature: 79

Location of feature: SQ4C

Main category: Wall

Measurements of feature: L: 0.95m; W: 0.38m; H: 0.22m

Stratigraphy: Contemporaneous to F78

Description: E-W running remains of a mud brick wall, badly preserved. Height of two layers still visible and preserved, all stretchers; the eastern brick was a header but was hacked away. Mud bricks set against a slightly higher pebble terracing (towards the S). Related SUs: 463, 456.

Dating/Interpretation: These wall remains could be the southern back wall of a room which would be shaped by Walls F51 (E), F58 (N) and F62 (W). In the N the structure is connected to a mud floor (F78), which itself is also connected to Wall F58 in the N. Early 18th Dynasty.

No. of feature: 80

Location of feature: SQ4B1, western half

Main category: Architecture piece (and pit)

Sub category: Column base

Measurements of feature: Diam. 0.45m

Stratigraphy: Unclear – re-used in pavement F72?

Description: Stone column base and pit west of Wall F69. Related SUs: 472, 433, 420

Dating/Interpretation: This column seems to have been re-used in the pavement F72; since the area around the column was disturbed, it could also derive from a later destruction phase.

No. of feature: 81

Location of feature: SQ4B1, eastern half

Main category: Part of structure

Sub category: Mud brick

Measurements of feature: 30 × 10 × 8cm

Stratigraphy: Unclear (isolated)

Description: Single mud brick east of Wall F67. Related SUs: 432, 413, 405.

Dating/Interpretation: Unclear in this state of preservation; probably a former 18th Dynasty structure, maybe related to F67.

No. of feature: 82

Location of feature: SQ4B1, western half

Main category: Mud brick structure

Sub category: Wall

Measurements of feature: L: 0.9m; W: 0.2m

Stratigraphy: Below F71

Description: Mud brick structure, running W-E towards F71/72 (schist plates/stratification deposit). Related SUs: 438, 420.

Dating/Interpretation: Unclear – looks as if it was part of the foundation deposit for the schist pavement; early 18th Dynasty; maybe overbuilt structure?

No. of feature: 83

Location of feature: SQ4D, central part

Main category: Mud brick structure

Sub category: Cellar

Measurements of feature: L: 3.3m; W: 1.8m; H: 2m

Stratigraphy: Contemporaneous with F85

Description: Rectangular cellar; southern wall partly collapsed; vault found collapsed on the floor; set into gravel deposit.

Dating/Interpretation: Thutmoside; same alignment as F15 and F85; will be published in detail elsewhere.

Finds: Pottery, bones, charcoal etc.

No. of feature: 84

Location of feature: SQ4D, northern part, N of F85

Main category: Wall

Sub category: Magazine wall

Measurements of feature: L: 6.35m; W: 0.56–0.60m; H: 0.26m

Stratigraphy: Contemporaneous with F85

Description: E-W aligned fragment of a brick wall; half-brick thick; two layers preserved; northern outer face burnt.

Dating/Interpretation: Probably the northern wall of the magazine encompassing Cellar F85; will be published in detail elsewhere. Thutmoside.

Finds: Pottery, bones, charcoal etc.

No. of feature: 85

Location of feature: SQ4D, northern part, S of F84

Main category: Mud brick structure

Sub category: Cellar

Measurements of feature: L: 3.7m; W: 1.5m; H: 2.05m

Stratigraphy: Contemporaneous with F83 (and F84)

Description: Rectangular cellar; vault still partly preserved; set into gravel deposit.

Dating/Interpretation: Thutmoside; same alignment as F15 and F83; will be published in detail elsewhere.

Finds: Pottery, bones, charcoal etc.

No. of feature: 86

Location of feature: SQ4, western half: 1.6–2.4m W-E/0.4–6.9m N-S

Main category: Wall

Measurements of feature: L: 6.35m; W: 0.56–0.60m; H: 0.26m

Stratigraphy: Contemporaneous with F87+88

Description: Elongated N-S running remains of a mud brick wall. Not preserved on the entire length, due to bad preservation in the northern part. At the northern and southern ends only negative impressions of mud brick remained. The central part shows mud brick in structure: two mud brick thick wall preserved with *muna*/mortar on top, *c.* 2cm thick. Consists of one layer of headers and one layer of stretchers. Three headers and max. four stretchers are visible/preserved. Generally not in a good state of preservation. Brick measurements: 35 × 16 × 10cm. Situated on top of pebble/gravel deposit. No pavement/floor remains below. Towards the W the connection to Wall F46 has remained. Here also junction with F47 – the pavement adjacent to F46 (N of 46).

Dating/Interpretation: Possibly interior wall of Building A (mid-18th Dynasty). No clear context for dating, mixed material.

Finds: SU 205: 1054–1064, 1080–1093, 1094–1113/2015; SU 223: 1325–1328/2015

No. of feature: 87

Location of feature: SQ4, western half: 0.8–2.35m W-E/4.7–5m N-S

Main category: Wall

Measurements of feature: L: 1.53m; W: 0.28–0.50m; H: 0.35m

Stratigraphy: Contemporaneous with F86+88

Description: E-W running remains of a mud brick wall. Three layers of bricks preserved, but in general in bad condition. On top of the western part a thin layer of *muna* is preserved. In the N mud pavement of flooring is connected to the wall. Towards the W the wall seems cut away, towards the E junction to N-S running Wall F45. Towards the S no connection to Pavement F48. Remains of the wall consist of one layer of headers, one layer of stretchers, one layer of headers, then *muna* on top. Brick measurements: 28 × 15 × 10cm. Connected with Floor F47 to the N. Large piece of *muna* at the western edge possible indication of multiple phases?

Dating/Interpretation: Interior wall of Building A.

Finds: SU 220: 1293–1298/2015; SU 223: 1320–1324/2015

No. of feature: 88

Location of feature: SQ4, NW half: 0.4–4.7m N-S/0.5–2.2m W-E

Main category: Floor

Measurements of feature: *c.* 4.30 × 1.7m; H: *c.* 2–4cm

Stratigraphy: Contemporaneous with F46/45, belonging to F46

Description: Irregular shape, due to very bad preservation and several disturbances. Seems to be limited by Walls F45 (E) and F46 (S) and connected with them. Towards the western section a circular pit cuts into floor. Between this pit and the remains of Wall F46 compact dense/loamy material appears on top of the floor. Probably comprised very bad preserved remains of mud bricks? Material of flooring is mud/loam mixed with pebbles (as inclusions).

Dating/Interpretation: Floor connected to 18th Dynasty structure remains F45, cut off by F46.

Finds: SU 220: 1293–1298/2015

No. of feature: 89

Location of feature: SQ4C, eastern part

Main category: Wall

Sub category: Part of building

Measurements of feature: *c.* 3.17 × 0.56m

Stratigraphy: Contemporaneous with F90 and F91

Description: Largely destroyed N-S wall of mud bricks (16cm wide); aligned with structure in SQ4; connected to F90.

Dating/Interpretation: Outer wall of mud brick structure; mid-18th Dynasty.

No. of feature: 90

Location of feature: SQ4C, northern part

Main category: Wall

Sub category: Part of building

Measurements of feature: *c.* 1.47 × 0.51m

Stratigraphy: Contemporaneous with F89 and F91

Description: Largely destroyed E-W wall made of mud bricks (16cm wide); aligned with structure in westernmost part of SQ4C (thus bridging a distance of 6.38m E-W in Square 4C); connected to F89.

Dating/Interpretation: Outer wall of mud brick structure; mid-18th Dynasty.

No. of feature: 91**Location of feature:** SQ4C, northern part**Main category:** Floor**Sub category:** Mud floor**Measurements of feature:** *c.* 0.55 × 0.25m**Stratigraphy:** Contemporaneous with F89 and F90**Description:** Remains of a mud floor set in the corner of E-W Wall F91 and N-S Wall F89; small patch of mud floor.**Dating/Interpretation:** Flooring of a mud brick structure (BS SU 1484); mid-18th Dynasty.

3.3 SECTOR SAV1 WEST

3.3.1 Progress of excavation

Season 2014

One of the goals of the 2014 season was to investigate the enclosure wall of the fortified New Kingdom town on its western side, just north of the main town gate. At the new site towards the west, labelled SAV1 West, two new trenches were opened – Square 1 (10 × 10m, Pl. 48) and Square 2 (5 × 15m) (see Pl. 51).⁴⁵⁹ An extension to the west was later added to Square 1 (Square 1W, 5 × 10m) and to the north-west (Square 1NW, 2 × 5m).

Based on the experience from work at SAV1 East in 2013, the excavation method was modified into a one surface documentation, conducting a stratigraphical excavation according to stratigraphical units (see above, Chapter 3.1.3). For removing the deposits according to their stratigraphical position, Structure from Motion (SfM) documenting was introduced.⁴⁶⁰ With a camera (Canon EOS 70D) and a monopod each working step was documented by photographs and then processed with PhotoSCAN, thus resulting in Structure from Motion models of each surface on a daily basis.

Square 1 (and Squares 1W and 1NW)

Initially removing the upper debris levels of Square 1, it soon became clear that its western half was occupied by the remains of the New Kingdom town enclosure (Feature 100), while its eastern part displayed large sandy pits with much 18th Dynasty pottery, loose mud bricks and many worked stone fragments (Pl. 49). The scattered worked stone fragments were in general very common at SAV1 West and also appeared in deeper layers, mostly in fillings of disturbances and as part of debris (Fig. 32).

In the southwestern corner of Square 1 a large pit filled with mostly Christian pottery was cut into the enclosure wall. Similar holes had also been dug into the brickwork of the enclosure wall at SAV1 North.⁴⁶¹ As was already observed by Azim in the 1970s, the Sai fortification suffered from several destructions, but also restoration phases in its use-life.⁴⁶² This was confirmed by work at SAV1 West.

Despite much ancient destruction work and disturbing pits, the complete thickness of the town wall is visible (4.3–4.5m) and the foundation level was reached in the northern part. The outline of the enclosure wall exactly follows the plan as assumed by previous surveying. To clarify the area in front of the town enclosure, a western extension was added as Square 1W (5 × 10m). Here, mud brick features and a glacis-like slope towards the west were recorded. In particular, later additions to the western outline of the 18th Dynasty town wall were traceable with the extension towards the west, Square 1W. Secondary constructions were set outside of the New Kingdom brickwork, partly reusing the bricks from the enclosure wall (Features 101, 102 and 103, see Fig. 38). Feature 102 is in particular interesting, as this

⁴⁵⁹ See Budka 2014a, 28–37; Budka 2015d, 63–65.

⁴⁶⁰ See Fera and Budka 2016; Fera and Geiger 2018.

⁴⁶¹ See Doyen 2009, 17–20.

⁴⁶² Azim 1975, 122.

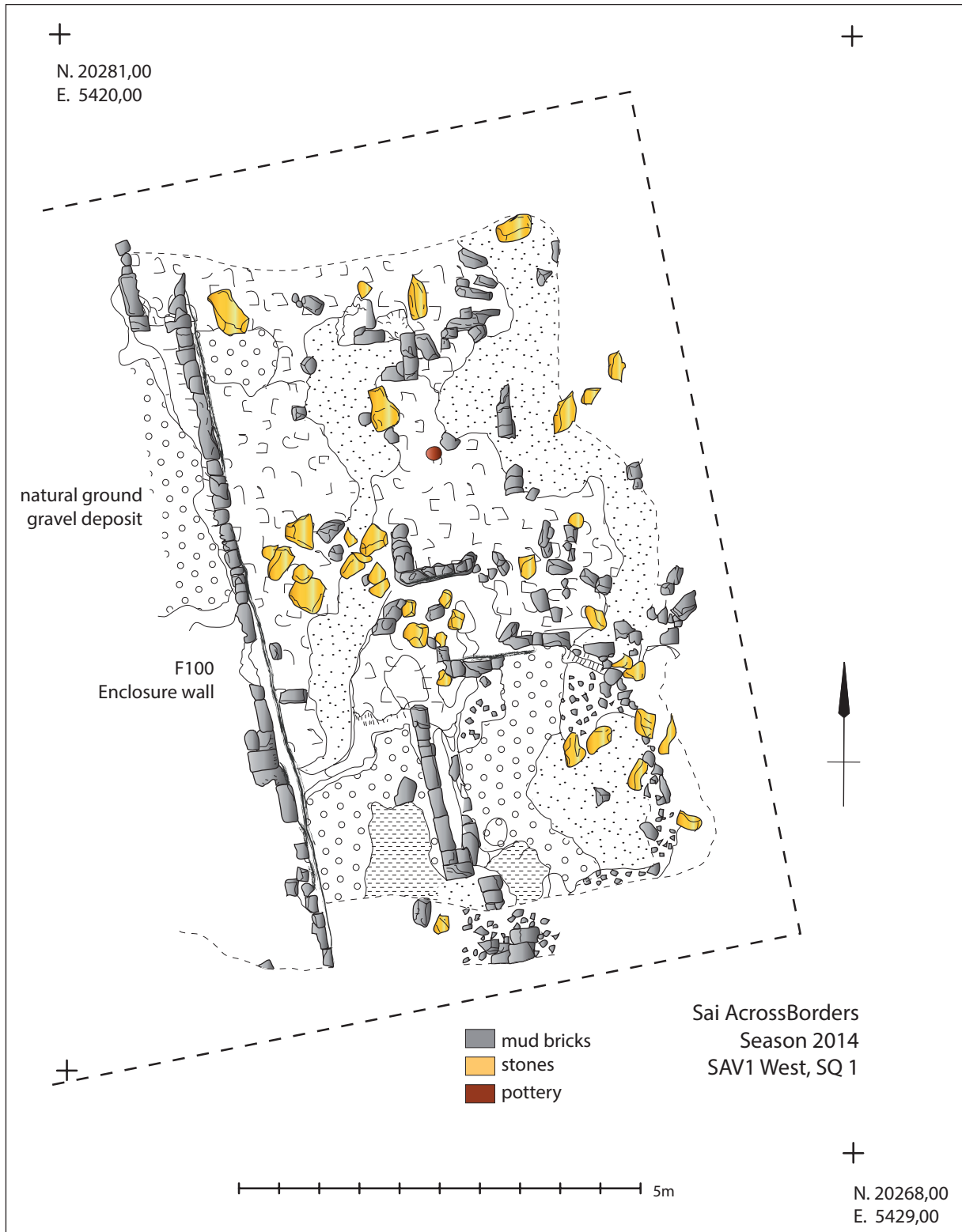


Fig. 32 SAV1 West, Square 1 mud brick remains and debris with abundant stone fragments east of the town enclosure

longitudinal mud brick structure was built with a simple pile of bricks toward the west, on top of the glaciis (Fig. 33). Only its inner side, facing Feature 101 which is located further to the east and parallel to the New Kingdom town wall, was well-smoothed and plastered. A layer in the space between Features 101 and 102 holding much organic material, charcoal and pottery of a domestic character may indicate a



Fig. 33 SAV1 West, Square 1W, Post-New Kingdom Feature 102

small occupation spot, maybe a modest hut or shelter. Its date remains to be established, but the pottery points to a Late Christian origin.

Towards the east of the enclosure wall, thus within the New Kingdom Pharaonic town, large amounts of sandy backfilling of pits and collapsed mud bricks were removed. At the end of the season, a level was reached in the eastern half of Square 1 where in situ New Kingdom structures were visible (Fig. 34). In the southeastern corner a pit was dug into the Pharaonic remains – cleaning this hole, a north-south wall of bricks and another east-west wall, forming a rectangular structure, were exposed. The gap between the north-south wall and the enclosure wall nicely corresponds to the distance one would estimate for a ‘wall street’ running along the enclosure wall (Pl. 50, see also below, Chapter 3.3.2). Several floor levels and ashy layers attest to a multi-period use of this small building in the southeastern corner of Square 1 (see Features 112, 113 and 116, Structure C).

Occupation layers were also visible in a section created by a Post-Pharaonic pit just to the east of the enclosure wall in the northern part. Again, several floor levels testify that this area was in use for a considerable time span during the New Kingdom (see Feature 110). Based on the assessment deriving from the ceramics, the mud brick structures and remains in Square 1 seem to originate from the mid- until the late 18th Dynasty. No material earlier than Thutmose III was found, seemingly providing a *terminus ante quem non* for the building of the town wall and the visible structures belonging to the interior occupation.

Square 2

Square 2 is located in a shallow depression close to the western city gate. Some mud bricks had been visible on the surface and after cleaning a superficial deposit, the remains of the New Kingdom town enclosure were exposed in the eastern part of the trench (Fig. 35, Pl. 51). Similar to Square 1, the structure had been pitted in antiquity and most of the mud bricks had been removed. However, the outline

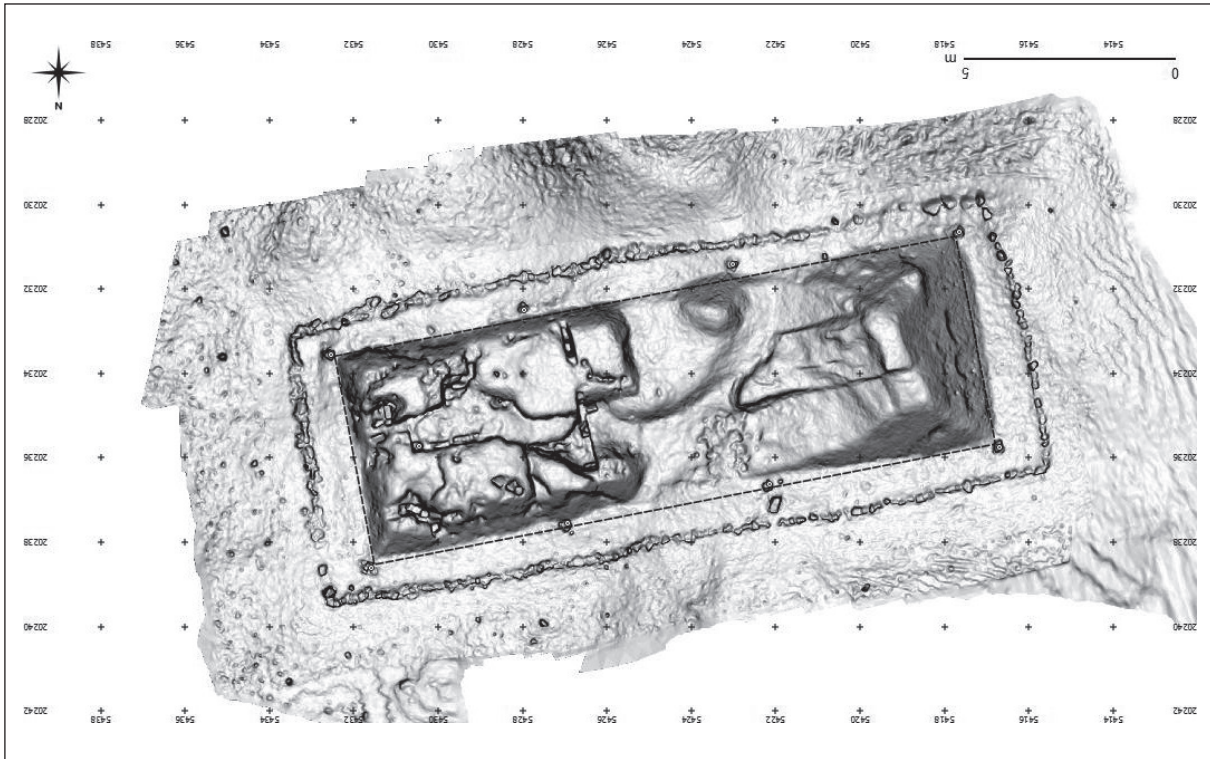


Fig. 35 SAV1 West, Square 2 at the end of the 2014 season

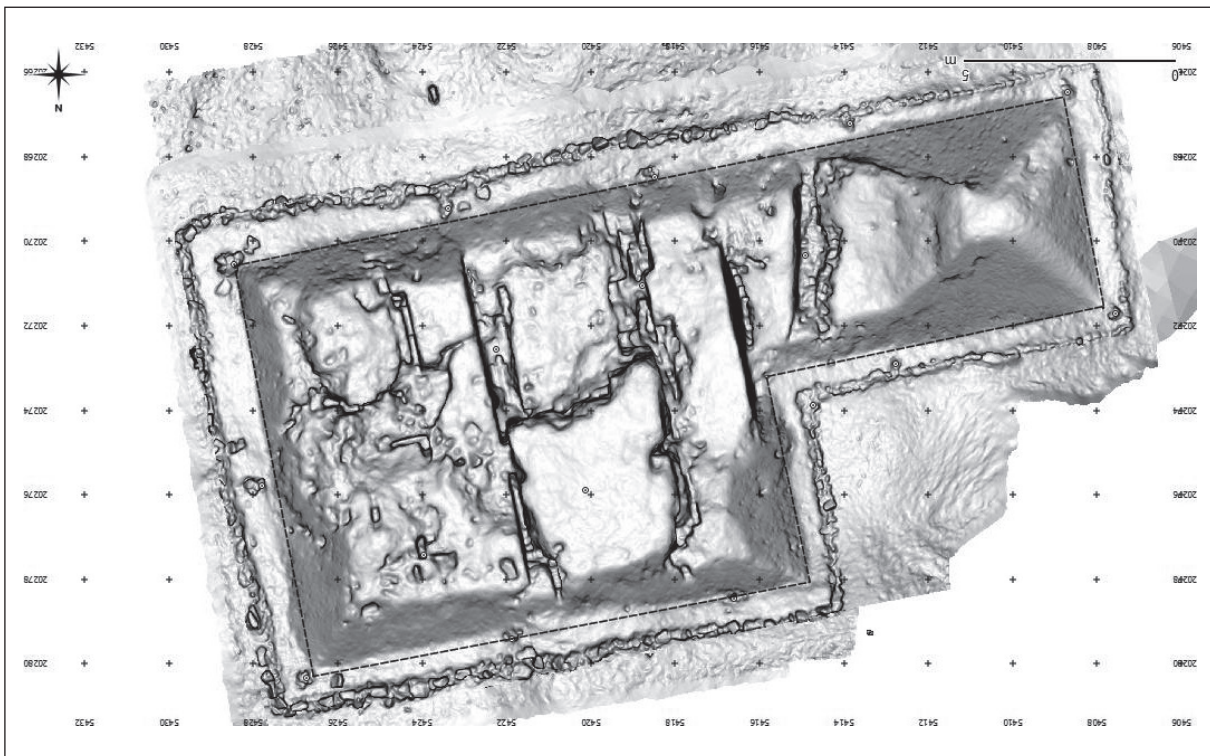


Fig. 34 SAV1 West, Square 1, 1W and 1NW at the end of the 2014 season



Fig. 36 SAV1 West, end of 2015 season

of the 18th Dynasty wall was traceable. A deep sandy pit cut off the New Kingdom enclosure wall in the southeastern corner of Square 2. From this sandy filling, reaching down to the foundation of the town wall, came one of the most interesting finds of the 2014 season: SAV1W 0532, a complete dummy brick, a cartouche shaped plaque with hieroglyphic inscription (see Chapter 4.3.2).⁴⁶³

In the northeastern corner of Square 2 a Post-Pharaonic feature was documented, comprising some mud brick walls and adjacent occupation levels, corresponding well to the findings in Square 1.

The western half of Square 2 was dominated by a glacis-like slope in front of the town wall, conforming to the findings in Square 1W. Excavating this area was almost impossible due to the large amounts of sand covering the ancient remains, including the three trench borders. At the top of the glacis some much eroded mud bricks were found. They compare well in composition and location with Feature 102 in Square 1W, suggesting a Post-New Kingdom date for these remains.

All in all, excavations at Square 2 confirmed the location of the western town enclosure and yielded very similar findings as Square 1, but in a less well-preserved state. No protrusion or gate was found for the enclosure wall, but traces of pitting and re-use.

Season 2015

One of the goals of the 2015 season was to investigate the New Kingdom remains on the inner side of the enclosure wall of the New Kingdom town in SAV1 West. In order to study a representative area, a new southern extension to the 2014 Square 1 was opened towards the south – Square 1S (10 × 10m, see Fig. 15). Based on the experience from 2014, the excavation method of a single surface documentation was continued. Every stratigraphical unit was documented by application of image-based modelling (SfM).

Square 1 South

Upon removing the upper debris levels of Square 1S, it soon became clear that its western half was occupied by the remains of the New Kingdom town enclosure, while its eastern part displayed large sandy pits with much 18th Dynasty pottery, loose mud bricks and many worked stone fragments. All of this corresponds to the findings in Square 1 in 2014.

Towards the east of the enclosure wall, thus within the New Kingdom town, large amounts of sandy backfilling of pits and collapsed mud bricks were removed. Below, remains of several mud brick buildings were found (Figs. 36–37, Pl. 52). All in all, seven features were documented in Square 1S (Fig. 38, Feature 117–123, see Chapter 3.3.4). Most promising was a small rectangular structure in the southeastern corner, Feature 123 – it was situated on debris and, therefore, possibly concealed an earlier phase of occupation, to be excavated in 2016.

Square 1

The work of the 2015 season in Square 1 focused on its eastern half, where in situ New Kingdom structures had already been visible in 2014. A total of seven features (Fig. 38, Features 110–116) were documented. In the southeastern corner, while cleaning the bottom part of a large sandy pit, a nicely preserved rectangular cellar with a vaulted ceiling was excavated (Feature 115). Several ceramic vessels were found on its base and these indicate a dating to the mid- to maximum late 18th Dynasty (see below, including a 14C date from the bottom of Feature 115).

Feature 111 is the remaining part of a building along the ‘wall street’ in the northern part of Square 1. It has several building phases and the earliest could be dated to the Thutmose era. Because of substantial deposits of ash and charcoal, Feature 111 can be interpreted as an oven room of a larger building unit (see below).

⁴⁶³ Budka 2015d, 66, fig. 10.



Fig. 37 Status in Squares 1 and 1S at SAV1 West, end of the 2015 season

For the stratigraphy of SAV1 West, it was highly interesting to find stratigraphic units holding mostly early Ramesside sherds – these layers were directly on top of the features tentatively assigned to the late 18th Dynasty (especially Feature 113). All in all, several floor levels, re-building phases and new sections of walls testify that this area was in use for a considerable time span during the New Kingdom, from Thutmose III (or slightly earlier) until Seti I/Ramesses II.

Season 2016

One of the goals of the 2016 season was to investigate the New Kingdom remains on the inner side of the enclosure wall of the New Kingdom town in SAV1 West. In order to study a representative area, a new eastern extension to the 2015 Square 1S was opened – Square 1SE (6 × 10m, Fig. 39). The excavation method as a stratigraphic excavation with single surface documentation continued (see above).

In the 2016 season work focused on this new eastern extension of Square 1S (Fig. 40). Upon removing the upper debris levels of Square 1SE, it soon became clear that it resembles the eastern part of Square 1S. Large sandy pits with much 18th Dynasty pottery, loose mud bricks and many worked stone fragments were documented in detail.

A small rectangular structure along the southern edge, stretching from Square 1S to Square 1SE (Feature 123) was completely exposed. Its layout differed from the other structures along the ‘wall street’ and an infant burial was discovered in its westernmost compartment – probably from a later phase of use, most likely the Christian period.

In Square 1NW, already investigated in 2014, a test trench was opened in front of the 18th Dynasty enclosure wall to check the foundation of the wall towards the western side (Fig. 40). After a solid pottery layer of later date, 19th and 18th Dynasty levels were documented. No tower feature was found but rather a solid, sloping mud surface resembling a glacis. It seemed as if the foundation layers of the town



Fig. 38 Features at SAV1 West, status of 2015

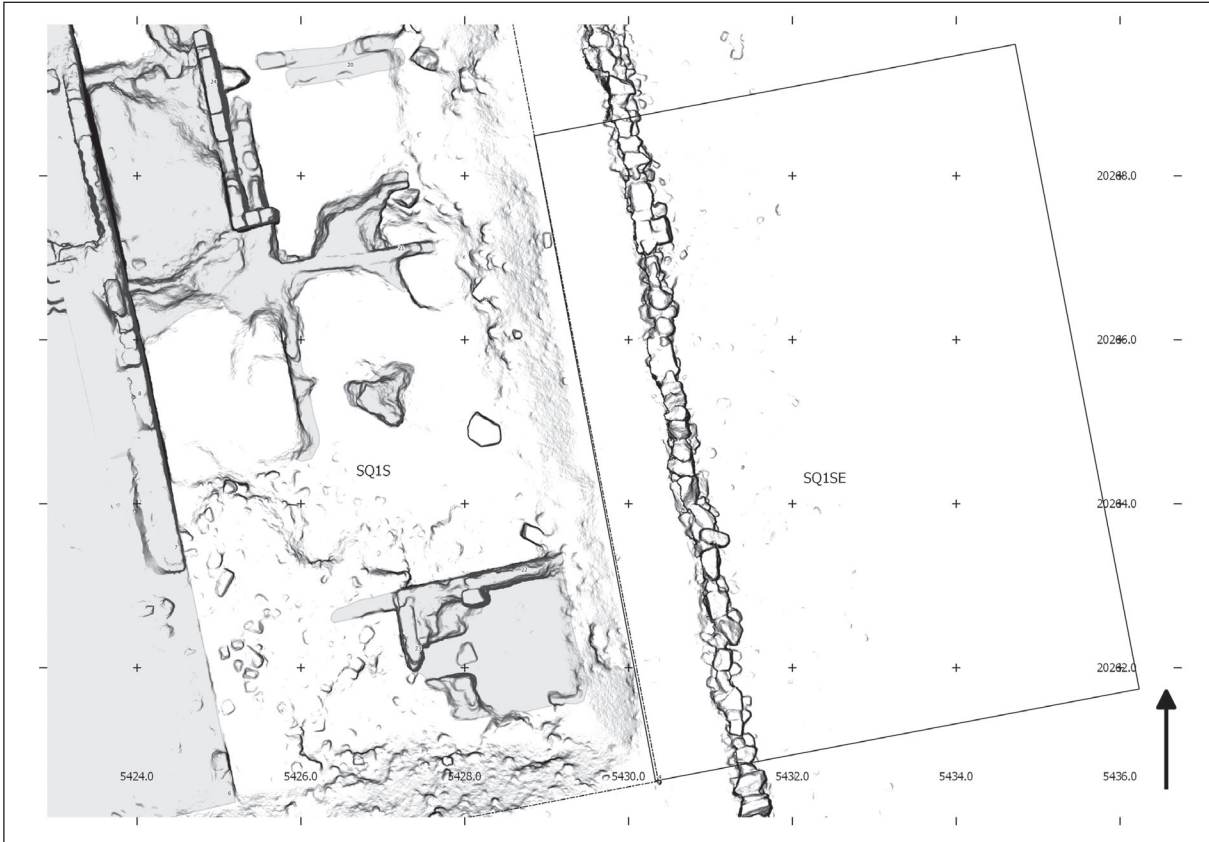


Fig. 39 SAV1 West, area of extension for Square 1SE, 2016 season

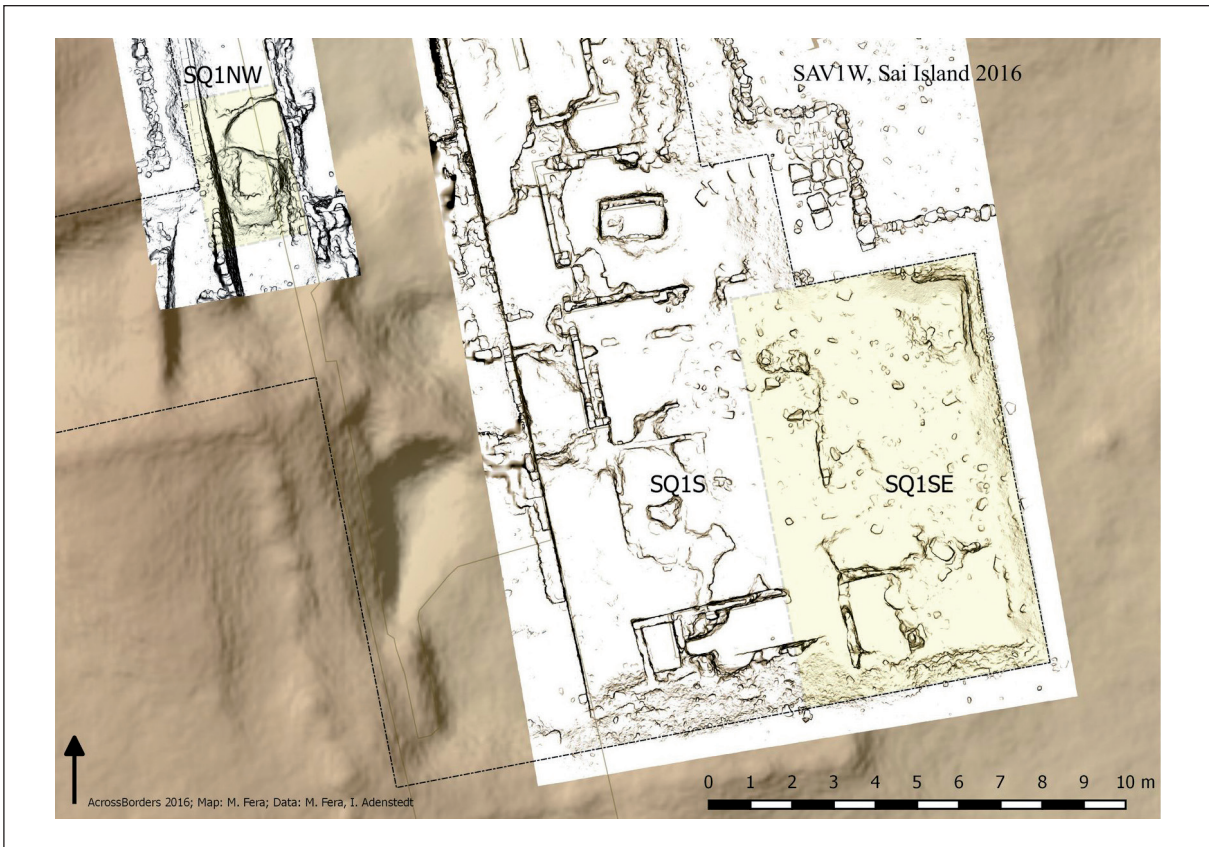


Fig. 40 Working areas at SAV1 West, 2016 season



Fig. 41 SAV1 West, status at the beginning of the 2017 season

enclosure were partly concealed on the other side by this glacis. This stresses again that Features 101 and 102 in Square 1W must postdate the New Kingdom (see above, 2014).

Related to the investigations in Square 1NW was, therefore, another testing of the slope and glacis-like structure in Square 1W. A sequence of augering transects, conducted by Sayantani Neogi and Sean Taylor, confirmed a sand-filled depression of at least 3.4m in depth. All in all, this seems to represent a ditch in front of the town enclosure, similar to findings at the main city gate by Azim (see Chapter 2.6).⁴⁶⁴

Season 2017

In 2017 remaining deposits in Squares 1S and 1SE (Fig. 41) were investigated to clarify the building sequences at SAV1 West. The discovery of a cellar in the northeastern corner of Square 1SE (Feature 152) made it necessary to make a small eastern extension (3 × 5m) labelled as Square 1SE_E (Fig. 42). This new square was dominated by mud brick debris, partly associated with the cellar and surrounding walls (Fig. 43), and sandy fillings with mixed material.

All in all, the remains of several small mud brick buildings were exposed and stratigraphic information was received from cleaning selected areas (Fig. 44), including deposits in the ‘wall street’ along the town enclosure. Most importantly, the earliest phase of occupation at SAV1 West seems to be contemporaneous to the one at SAV1 North – and clearly predates the building of the town wall under Thutmose III. Evidence for this was found in the ‘wall street’ of Square 1S (Pl. 53) and at Feature 121. Only scarce remains of this early 18th Dynasty occupation at SAV1 West have survived, with the major phase of the

⁴⁶⁴ Azim 1975, 121–122. See also Adenstedt 2018.

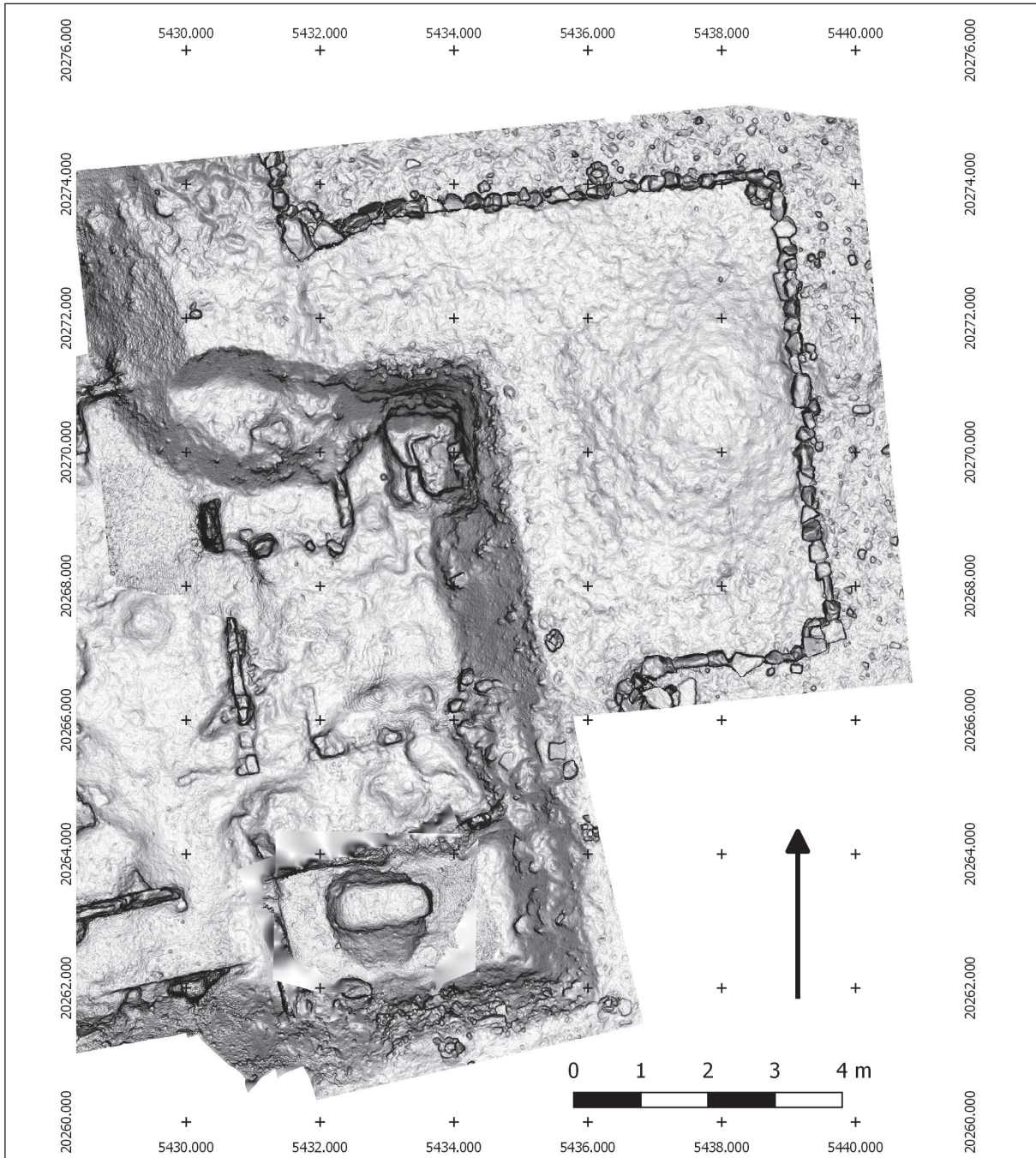


Fig. 42 SAV1 West, 2017 season, first traces of Cellar Feature 152 and extension area to Square 1SE

mid-18th Dynasty partly superimposing earlier structures and lasting well into the late 18th Dynasty (see below, Chapter 3.3.3).

Square 1 Southeast and Square 1 Southeast_East (Extension 2017)

In 2016, a substantial demolition layer with many mud brick fragments and large quantities of worked stones and pottery was left unexcavated in the eastern half of Square 1_SE. Removing this debris in 2017, earlier deposits and traces of mud brick structures were unearthed. Work focused in particular on a pile of bricks, debris and rubble in the southeastern corner. One of the large stones was situated on top of

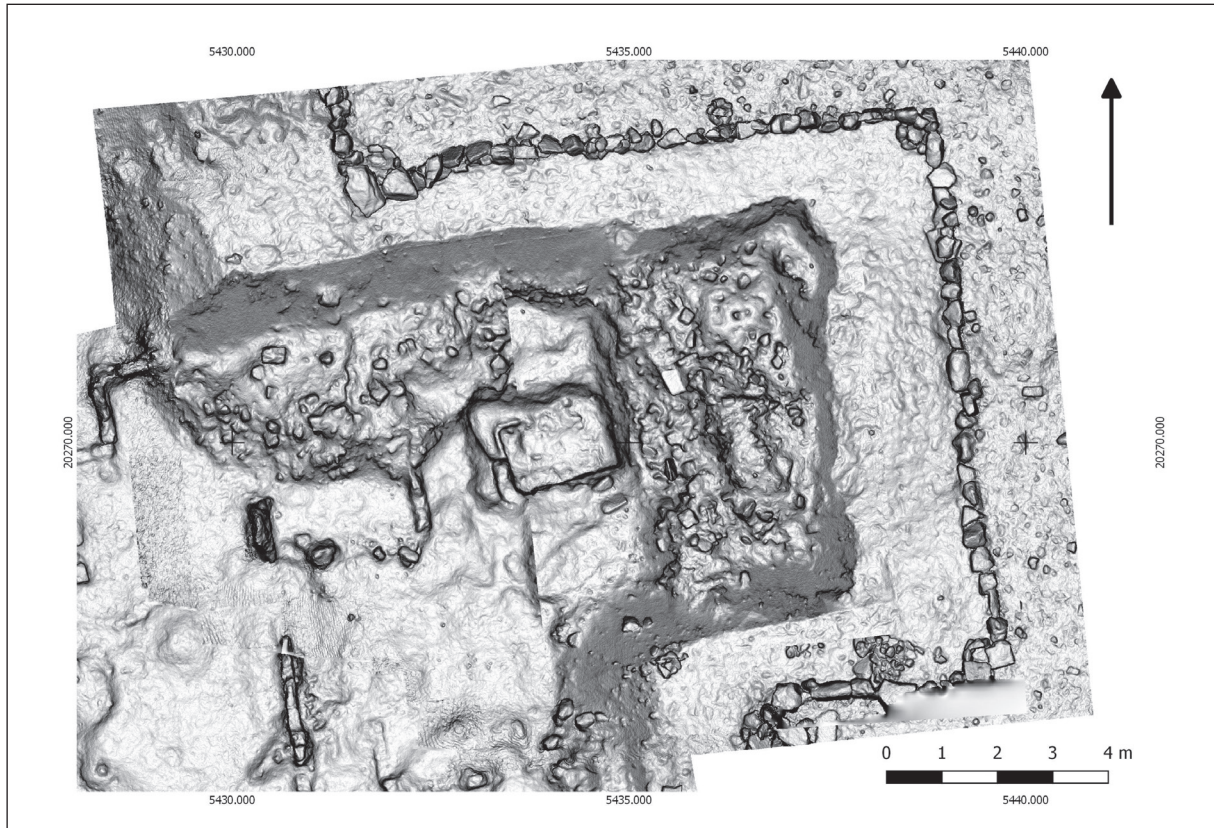


Fig. 43 SAV1 West, 2017 season, debris above Feature 152 and in extension SQ1SE_E

the debris filling the oval-shaped storage pit Feature 151 (Pl. 54). It turned out as a re-cut royal lintel of the mid-18th Dynasty (Pl. 55). Based on the filling of Feature 151, the storage pit was used and backfilled in Thutmoside times (see Chapter 4.5).

A similar storage installation was discovered with the rectangular cellar Feature 152 in the northeastern corner of Square 1SE and the extension 1SE_E. Like Feature 151, it belongs to the mid-18th Dynasty building phase at SAV1 West (Figs. 42–43) (see Chapter 4.5). Furthermore, several fragments of mud brick walls allow reconstructing the layout of several building units in this area which find close parallels in sector SAV1 North. Of special interest was Feature 159, aligned to the main east-west axis/lane exposed in sector SAV1 West and including a quern emplacement (Fig. 44).

3.3.2 Architecture

Both the New Kingdom town enclosure and the contemporaneous remains on the inner side of this wall were investigated in the four seasons of work at SAV1 West (Fig. 45). The general appearance of these architectural remains is very similar to sector SAV1 North, including the building technique (Pl. 56).⁴⁶⁵

Town enclosure

Despite much ancient destruction and disturbance, the complete thickness of the town wall (Feature 100) is visible (4.3–4.5m) on a length of *c.* 18m – its alignment follows exactly the plan as assumed

⁴⁶⁵ See Doyen 2017.

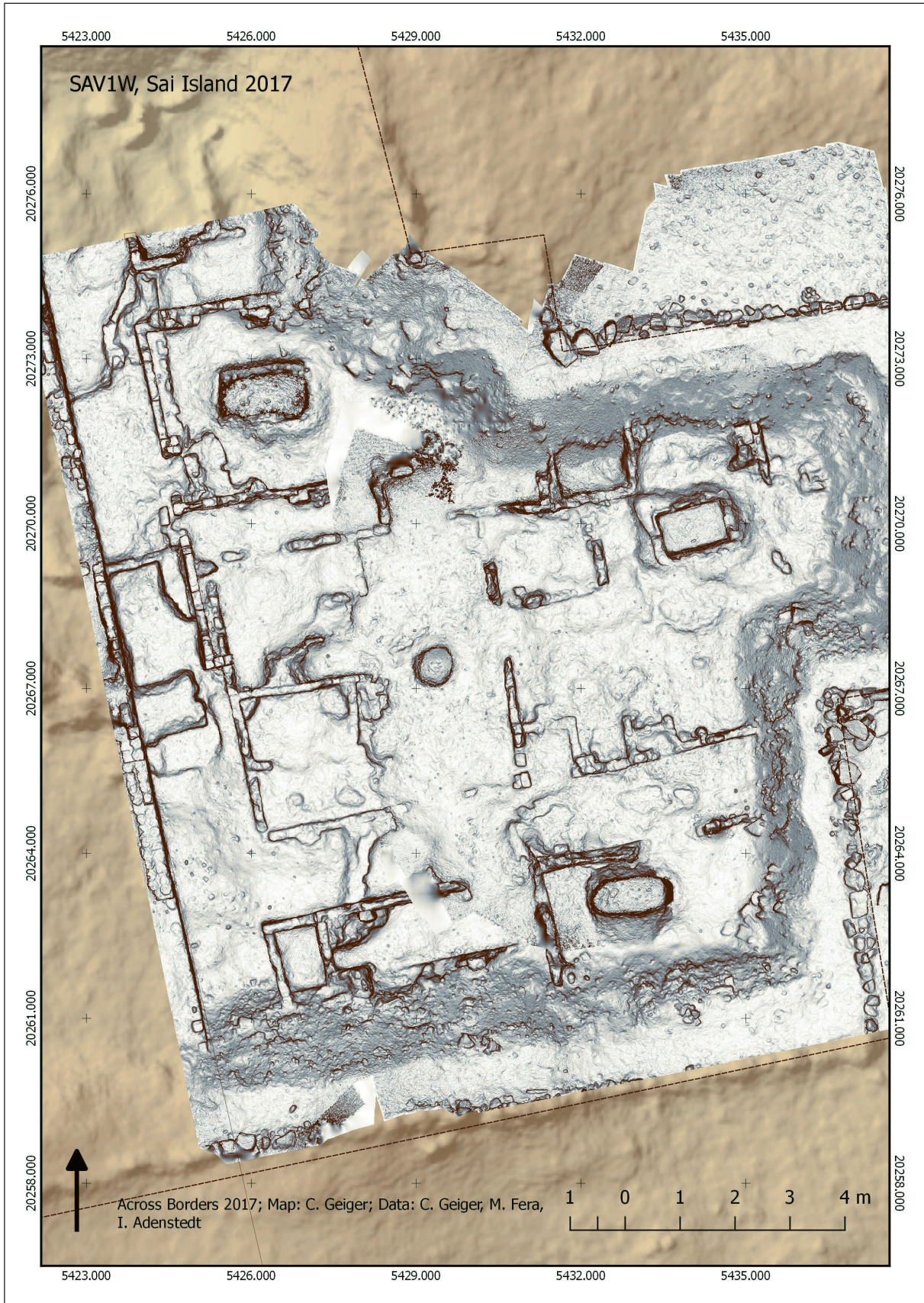


Fig. 44 SAV1 West, 2017 season, final status of excavation

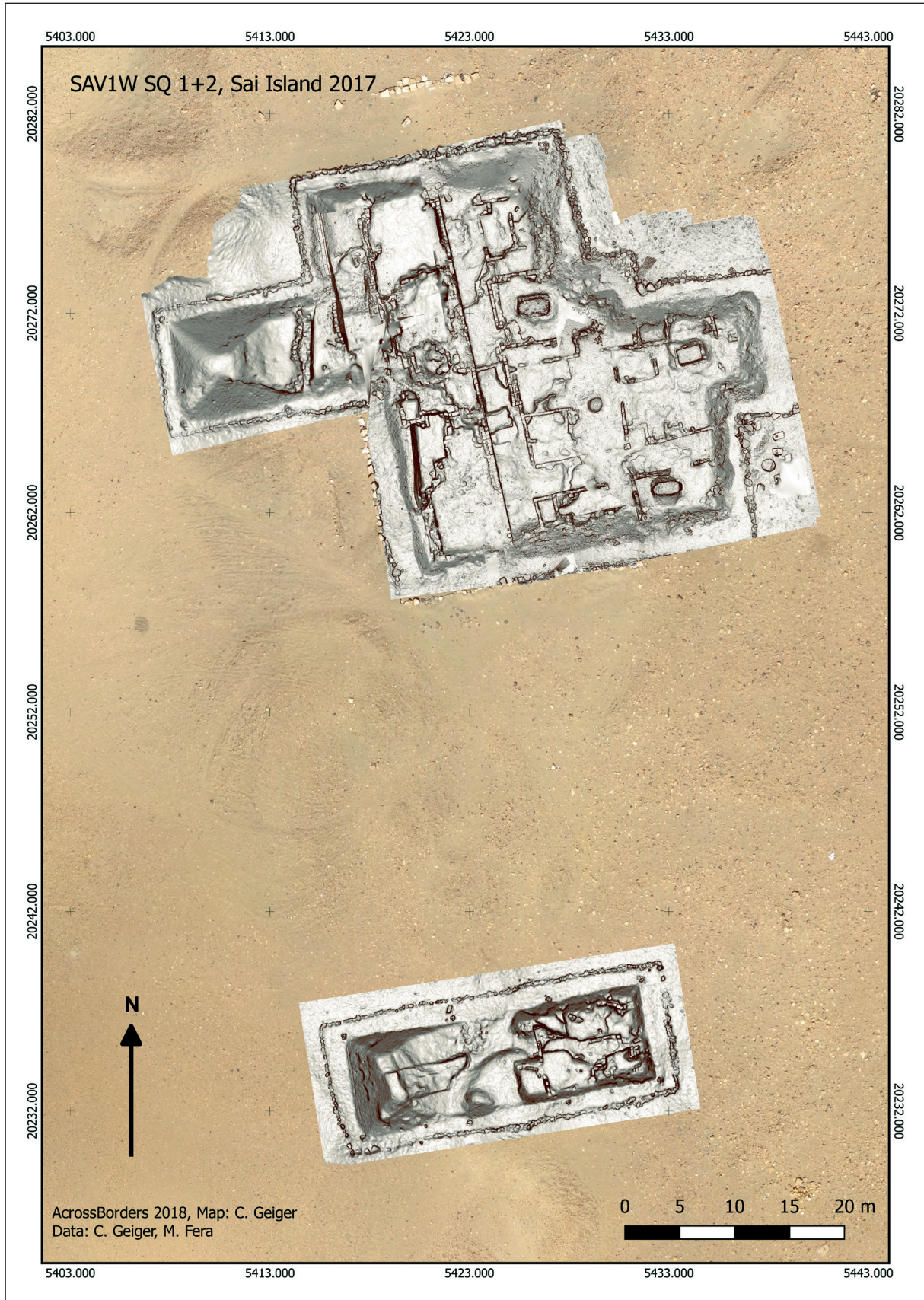


Fig. 45 SAV1 West, plan of all excavation seasons

by previous surveying of French colleagues.⁴⁶⁶ As in the south and the north, the enclosure wall is once again composed of 10 rows of mud brick headers, alternating with layers of stretchers. Other than in the northern and southern sections of the enclosure wall, no towers/protrusions were discovered along a length of about 20m of the western wall. Neither was an opening discovered, but later additions as well as *marog* digging activities.⁴⁶⁷

For the purpose of looking for structures on the outer side of the wall at a lower level, a test trench to the west of the enclosure wall revealed a solid, sloping mud surface that resembles a glacis. This glacis-like structure was unearthed underneath a layer of pottery of Post-New Kingdom date and 19th and 18th Dynasty levels. Maybe certain restoration phases of the town enclosure already occurred during the New Kingdom. Based on a series of augering transects at SAV1 West, the glacis is fronted by a “ditch”, a sand-filled depression of at least 3.4m in depth. A similar feature was already noted by Azim at the western city gate, thus towards the south of SAV1 West.⁴⁶⁸

All in all, the western town wall unearthed at SAV1 West corresponds to the other sections already uncovered in the south and the north in terms of size and building technique. It furthermore illustrates certain elements of a fortification character as the glacis-like slope and the ditch in front of the western side. It still remains unclear whether these features were stimulated by the topographical situation at the western side (see above, Chapter 2.6), or whether they represent underestimated or so far little understood elements of an Egyptian fortified town in Nubia.⁴⁶⁹

Wall street and internal structure

On the inner side of the town enclosure, in the eastern half of both Squares 1 and 1S, in situ New Kingdom structures were exposed at SAV1 West (see Fig. 37). The gap between the various north-south walls and the enclosure wall nicely corresponds to a suitable width for a ‘wall street’ running along the enclosure wall. Such a small lane was already noted by Azim⁴⁷⁰ in the southern part and by Doyen in the northern part.⁴⁷¹ Its width of *c.* 1.5m at SAV1 West corresponds to the measurements in the other sectors.⁴⁷²

As will be pointed out below, the domestic structures to the east of the ‘wall street’ at SAV1 West belong to different building phases. It is important to stress that the later walls reduce the width of the lane because they are not set directly on top of the older walls, but are half-brick shifted to the west (width was now *c.* 1.28–1.30m). Such a shifting of the alignment of later walls was already observed at SAV1 North.⁴⁷³

The ‘wall street’ is the only clear north-south lane at SAV1 West. That there once was a street system and the architecture followed a certain grid can be estimated from the layout of the structural units and in particular from the main east-west lane exposed in SAV1 West. It leads from the ‘wall street’ in Square 1S to Square 1SE, separating Features 161, 144 and 159 in the north (from west to east) from Features 123, 146 and 150 in the south (from west to east) (Fig. 46). The measurements of this lane are as follow: 9.5m east-west extension (but continuing, disappearing into the eastern baulk of Square 1SE); 1.34–1.38m in width. Its width is thus smaller than the ‘wall street’ and also of the main streets documented by Azim and Adenstedt in SAV1.⁴⁷⁴ It is roughly comparable to the 1.3m wide NS3 in SAV1, which was

⁴⁶⁶ See Azim 1975, 94, pl. 2, 120–122; also Adenstedt 2018.

⁴⁶⁷ These are comparable to SAV1 North; see Budka and Doyen 2013, 178.

⁴⁶⁸ Azim 1975, 120–122; Adenstedt 2018, 137.

⁴⁶⁹ No ditches are attested at other fortified temple towns in Nubia, see Kemp 1972, 651.

⁴⁷⁰ Azim 1975, pl. 6.

⁴⁷¹ Doyen 2014, 368, fig. 1.

⁴⁷² Doyen 2017, 49.

⁴⁷³ Doyen 2017, 104.

⁴⁷⁴ See Adenstedt 2016, 31–33.

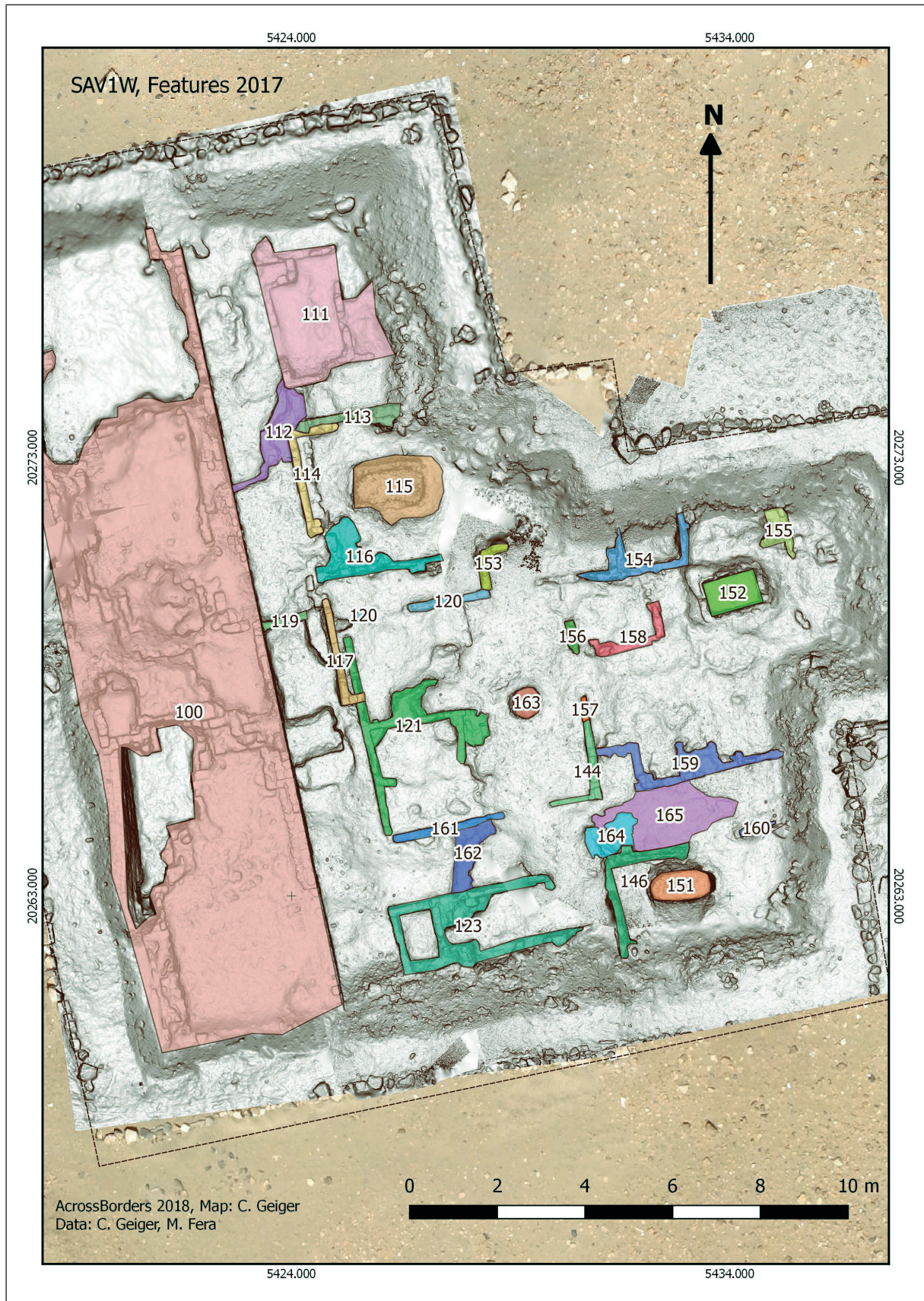


Fig. 46 Features at SAV1 West, status of 2017

labelled as “narrow corridor” by Adenstedt.⁴⁷⁵ With Features 162 and 145 some street deposits were documented within the east-west corridor at SAV1 East (see Chapter 3.3.4).

All in all, the arrangement of streets and structures at SAV1 West on the inner side of the enclosure wall is very similar to the situation at SAV1 North. Obviously, the town walls and their parallel ‘wall streets’ were major construction guidelines and a grid-system with a focus on an east-west orientation is traceable. As will be outlined below (Chapter 3.7), however, activity areas and footways within an Egyptian town may be altered over time and continuously modified, depicting the impact of the occupants on the built structures.

Domestic architecture

The modest walls of half-brick thickness at SAV1 West include open courtyard areas which enclosed small cellars and other installations, such as a quern emplacement (Fig. 46). For the 18th Dynasty phases of architecture at SAV1 West, a total of six domestic structures can be reconstructed (Structures A–F). The ground plan of all of these structures remains tentative because of the state of preservation and excavation, but can be reconstructed based on close parallels from SAV1 North.

Structure A is located in the southern part of SAV1 West in Square 1S, just east of the ‘wall street’, at the junction to the main east-west lane of the sector (Fig. 46). It finds a close parallel, also in terms of size in building unit N24 at SAV1 North.⁴⁷⁶ Structure A is delineated by Wall Feature 121 to the west and Walls Feature 156, Feature 144 and Feature 157 to the east, Feature 120 to the north and Feature 161 to the south. All of these perimeter walls were constructed using layers of mud brick stretchers in the traditional running bond pattern, generally half-a-brick thick. With the east-west section of Wall Feature 121, an internal wall is also preserved and corresponds to this building technique. All in all, Structure A covers a square area of approximately 26.31m².

Contrary to N24 at SAV1 North, no pilasters were documented in the brickwork of Structure A. However, in the northwestern inner corner of Feature 121 there is a small installation – several bricks form a roughly triangular bin-like structure. Such settings against inner corners of rooms were also found in the city of Kerma.⁴⁷⁷ Since Structure A seems to represent the earliest New Kingdom structure at SAV1 West, these parallels to indigenous Nubian mud brick architecture raise several questions. Similar to the structures excavated by Azim around Temple A, a circular storage pit/silo was found in the open-air part of Structure A (Feature 163).⁴⁷⁸ No other installations were observed within this building unit.

Structure B is located in the northeastern half of Square 1, directly at the ‘wall street’ (Fig. 46). It was only partially excavated and consists mainly of Feature 111, the oven room with c. 4.88m² described above, which represents a unit at the southwestern corner of Structure B. Parallels for oven rooms can be found in the town of Elephantine,⁴⁷⁹ but also at sector SAV1 North, within building unit N12.⁴⁸⁰ Unfortunately, the original size and ground plan of Structure B cannot be estimated.

Structure C is located in the southeastern corner of Square 1, just east of the ‘wall street’ (Fig. 46). Structure C is delineated by Wall Feature 116 to the west and the south and by Wall Feature 113 to the north. The eastern part of the structure disappears into the baulk of Square 1. All of its perimeter walls were constructed using layers of mud brick stretchers in the traditional running bond pattern, generally half-a-brick thick. Structure C closely resembles building unit N25 at SAV1 North. This unit is located next to N24 and this setup compares very well to the unit composed of Structure A and Structure C at SAV1 West. The structures are also of very similar dimensions; the preserved part of Structure C covers a square area of approximately 11.60m². The western part of Structure C represents a courtyard, but

⁴⁷⁵ Adenstedt 2016, 32.

⁴⁷⁶ Doyen 2017, 35–57.

⁴⁷⁷ Personal observation at the site; see also Bonnet 2014, 60–61 (e.g. installation in M238).

⁴⁷⁸ Cf. Azim and Carlotti 2012, fig. 6a, see structures G6 and G2.

⁴⁷⁹ See von Pilgrim 1996, 209–211; Budka 2015a, 46.

⁴⁸⁰ Doyen 2017, 80–81. Note, however, that in the case of N12A the ash deposits were a misinterpretation of articulated phytoliths, see Budka 2017f, 173–174.

presumably it was once an elongated structure with several rooms, maybe of a tripartite type. In the courtyard of Structure C a rectangular cellar, Feature 115, was set into the gravel. This cellar with mud coating and part of its vault still in situ is a miniature version of the large cellars in SAV1 East, Features 83 and 85 (see above). Remains of the mud pavement of the courtyard have survived in the inner corner of Feature 116.

Structure D occupies the eastern half of Square 1SE and extends into Square 1SE_E. Although several wall features are partly preserved (Features 154, 155, 158 and 159, Fig. 46), these small portions do not allow a proper assessment of Structure D's ground plan and size. It probably continued towards the north and was maybe directly adjacent to Structure A. Its southern side is delineated by Feature 159 as perimeter and the above mentioned east-west lane. Structure D finds certain parallels in building units N26 and N27 at SAV1 North. It is a large courtyard building with several side rooms/lateral units. Along the southern side, a quern emplacement represents an installation and Cellar Feature 152 was set into the northern part of the courtyard.

The northern part of Structure D is most likely formed by Features 154 and 155 as possible side rooms. In line with the north-south dividing Wall Feature 158, the installation along the east-west Wall Feature 159 can be named. This installation is a quern emplacement for a grindstone, abutting the southern inner face of the east-west aligned wall. It was probably used during the process of milling grain into flour,⁴⁸¹ serving as a pedestal for grinding activities using a quern stone. This type of grindstone would originally have been set into the depression of the once plastered upper surface, but none was found here in situ⁴⁸² and the pedestal itself is also badly preserved. Quern emplacements are regular installations in Egyptian houses.⁴⁸³ Within the New Kingdom town of Sai, the best parallel for this feature at SAV1 West can be found in building unit N12C at SAV1 North.⁴⁸⁴

If one calculates the northern rooms Feature 154 and Feature 155 as belonging to Structure D, its excavated part covers a square area of approximately 29.50m².

Structure E is located south of the main east-west street (or corridor) at SAV1 West in Square 1SE (Fig. 46). It occupies the southeastern corner of Square 1SE and lies opposite of Structure D. Its northern perimeter wall is partly preserved (Feature 146 and Feature 160) and the north-south section of Feature 146 forms its western perimeter wall. These small portions do not allow a proper assessment of Structure E's ground plan and size. The preserved part of Structure E covers a square area of approximately 8.18m². Despite its fragmented preservation, it seems to be similar to Structure C and is also east-west oriented, probably with an elongated shape and several rooms. It comprises Silo Feature 151 which was presumably set up in a courtyard of the building. A possible entrance into the building from the corridor in the north could have been in the space lacking brickwork between Feature 146 and Feature 160.

Structure F was partly excavated in the southern part of Square 1 (Fig. 46). It is located at the junction of the 'wall street' and south of the east-west lane, thus opposite of Structure A. The remaining deposits in the east-west lane, Feature 162, suggest an 18th Dynasty date for the structure. Its preserved parts comprise Feature 123: a northern perimeter wall, a western perimeter wall and a very small room unit to the west (0.95m²). Especially this small room without a preserved entrance finds certain parallels in building unit N26 at SAV1 North.⁴⁸⁵ However, since Feature 123 was re-used in the Post-New Kingdom period, uncertainties about the dating and building phases remain, which might be answered by means of future excavation of the southern part of this building. The excavated part of Structure F covers a square area of approximately only 4.40m².

All in all, the remains of the 18th Dynasty structures along the enclosure wall in SAV1 West are very similar to findings at SAV1 North.⁴⁸⁶ Both areas within the New Kingdom town are markedly different from the southern sector and SAV1 East – there are no large structures of a possible administrative

⁴⁸¹ See Samuel 2000, 561.

⁴⁸² A large number of grindstones were, however, found in filling contexts at SAV1 West, see Chapter 4.4.

⁴⁸³ Samuel 2009, 467 and related bibliography; see also Budka and Doyen 2013, 177 with parallels in notes 66 and 69.

⁴⁸⁴ Doyen 2017, 66–67, 81–82.

⁴⁸⁵ Doyen 2017, 96 (room N26/2).

⁴⁸⁶ Budka and Doyen 2013, 171–177; Doyen 2017.

function and no substantial magazines, but rather simple domestic buildings of small dimensions with oven installations, grindstone emplacements, small-sized cellars and storage bins (see also Chapter 3.4).

3.3.3 Building phases

Similar to SAV1 East and also comparable to SAV1 North, three main building phases within the 18th Dynasty can be distinguished at SAV1 West. These building phases are all associated with architecture. Like at SAV1 East, Ramesside activities at SAV1 West are attested by means of scattered pottery, but no architectural remains of the late New Kingdom were detected. Based on architecture and deposits, the following phases can be differentiated at the western sector of the New Kingdom town:

Phase A: early remains with unclear architectural shape, represented by settlement debris and midden deposits (early 18th Dynasty)

Phase B: town enclosure and first building units east of the enclosure wall, with storage installations (Thutmose III/mid-18th Dynasty); presumably several individual phases

Phase C: additions/modifications and new building units (mid-18th Dynasty to late 18th Dynasty)

All three main phases can be subdivided in various sub-phases; the strongest evidence for such sub-phases derives from Phase B. Phase A is in general a little problematic. In 2017, a building phase prior to the town wall was confirmed at SAV1 West. Midden deposits below the ‘wall street’ as well as scarce traces of simple mud brick structures comparable to finds in SAV1 North are clearly earlier than the town wall. The limited exposed sections do not allow detailed information about this early building phase in the western town sector, but the comparison with SAV1 North suggests some simple style buildings for housing and workshop purposes.⁴⁸⁷ This phase seems to slightly pre-date Structures A and B.

Regarding the six structures of 18th Dynasty date at SAV1 West, the following phasing within the main Phase B is possible. Structures A and B belong to the early phase within these building units, most probably attributable to Phase B or maybe to a transition phase between Phases A and B. They both seem to be contemporaneous with the town wall, but they might even be slightly earlier. Structures A and B could be contemporaneous to Level 4 at SAV1 North, which is associated with the early 18th Dynasty to Thutmose III times. Structure C of Phase B is definitely slightly later and could be dated to the mid-18th Dynasty, most likely the advanced reign of Thutmose III.⁴⁸⁸ Also belonging to Phase B are Structures D and E which are contemporaneous to each other and datable to the mid-18th Dynasty. These building units, Structures C, D and E, clearly represent the heyday of SAV1 West which is also associated with the town enclosure and is comparable to Phase B at SAV1 East and Level 3 at SAV1 North. Slightly later, possibly from Phase C, is Structure F with Feature 123. One wall, which was almost parallel to Feature 120 (northern perimeter of Structure A), Feature 118 (Fig. 47), might be attributed to the late 18th Dynasty or Ramesside period, but its precise chronological dating could not be clarified.

Other than the walls Feature 118 and Feature 123, Phase C is mainly represented by deposits, but not architectural remains. This can be best shown by Feature 112. The occupation layers labelled as Feature 112 testify to the multi-period use of a corner between 18th Dynasty buildings (Structure B and Structure C) and the ‘wall street’. According to the pottery, Feature 112 also comprises the Ramesside period. Since it partly overlies Feature 113 and Feature 114, this deposit also seems to attest a phase with standing ruins from the 18th Dynasty.

All in all, the earliest building unit at SAV1 West is Structure A. At present evidence, there must have been some kind of architecture already prior to the town enclosure, but apart from settlement debris no substantial remains were uncovered. Similar to SAV1 North, the best preserved building phase at SAV1 West is associated with the town wall (Phase B).

⁴⁸⁷ Budka 2017c, 73.

⁴⁸⁸ This corresponds with a 14C date from Feature 115, the cellar within Structure C: charcoal from the undisturbed filling of this cellar was dated to 3454–3345 cal BP, 1505–1396 cal BC (analysis was undertaken by Beta Analytic Inc).

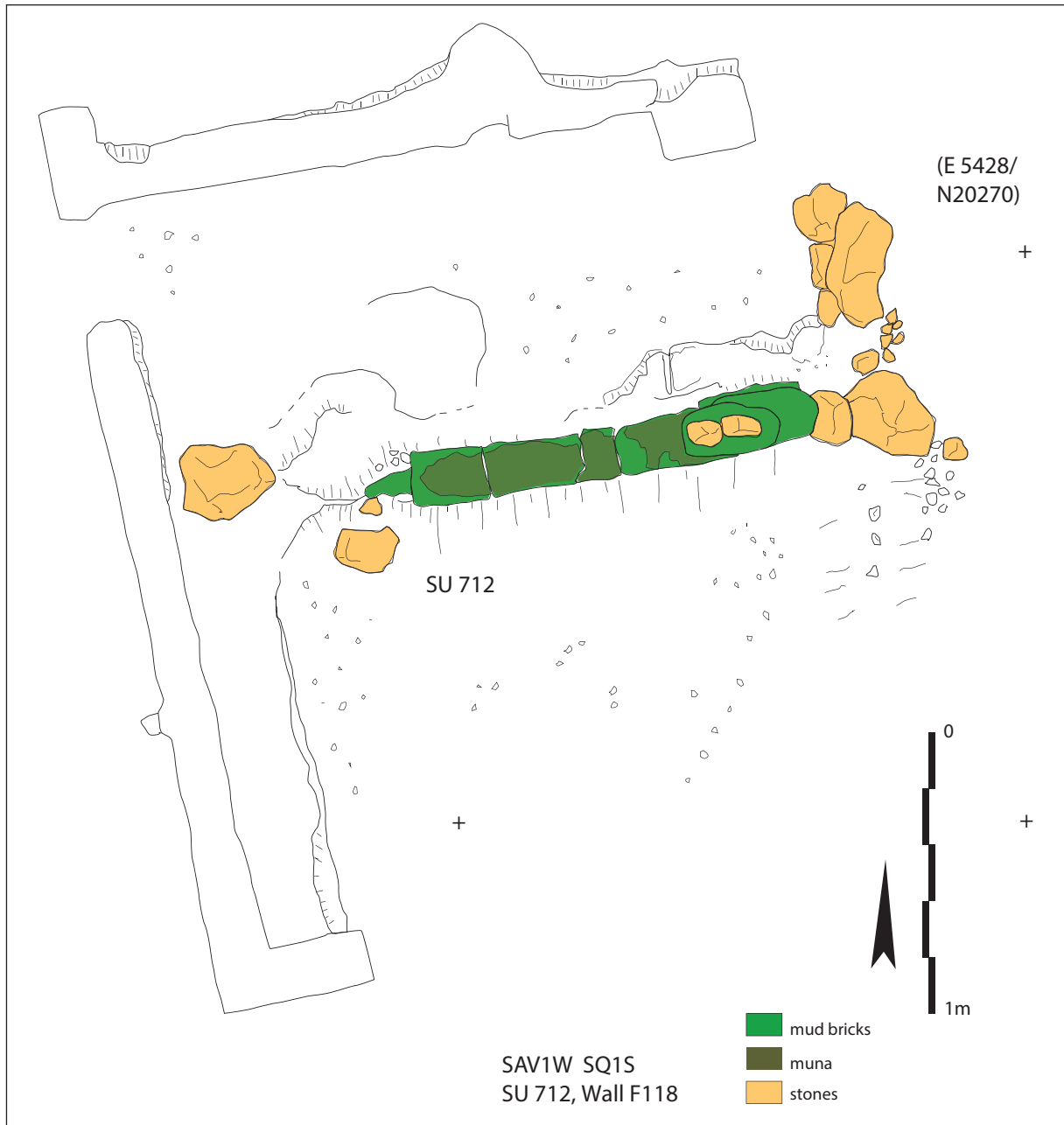


Fig. 47 Square 1S at SAV1 West with Wall Feature 118

3.3.4 List of features of SAV1 West⁴⁸⁹

Other than in sector SAV1 East, the numbers of the features were not always assigned simultaneously to the excavation at SAV1 West. The list of features in SAV1 West was rather completed after each season of excavation as well as in the post-excavation phase (while establishing the Harris Matrix; used especially for interfaces). This explains why several numbers starting from Feature 100 were not given to contexts at SAV1 West; the “empty” numbers (104–109 and 127–129) are not simply missing in the following catalogue, but were never used.

⁴⁸⁹ Based on the original field notes composed between 2014 and 2017 by Julia Budka, Martin Fera, Cajetan Geiger, Stefanie Juch, Fatma Keshk, Franziska Lehmann and Klara Sauter.

No. of feature: 100

Location of feature: SQ1 and SQ1S

Main category: Mud brick wall

Sub category: Town enclosure wall

Measurements of feature: Preserved L: 18m; W: *c.* 4.26m, max. 4.3m; H: max. 1.14m

Stratigraphy: See Harris Matrix

Description: Lower part of the western enclosure wall of the New Kingdom town. Despite much ancient destruction, the town wall could be uncovered in its entire thickness of *c.* 4.3m, in some parts the foundation level was reached. Note the glacis-like structure and the ditch to its western side. For the building technique and measurements, cf. SAV1 North. No tower/buttress was found; no further gate or entrance was noted here at the western side of the town.

Dating/Interpretation: Part of the western town enclosure of the New Kingdom town; Thutmoside (Thutmose III); corresponding to other excavated parts of the enclosure in the south and the north.

No. of feature: 101

Location of feature: SQ1W

Main category: Mud brick wall

Sub category: Post-New Kingdom structure

Measurements of feature: L: *c.* 2.45m; W: 0.45m

Stratigraphy: See Harris Matrix (cut by F148 and F150)

Description: Linear mud brick feature

Dating/Interpretation: Probably eastern wall of small stable/hut formed with F102; Post-New Kingdom, possibly Ottoman.

No. of feature: 102

Location of feature: SQ1W

Main category: Mud brick wall

Sub category: Post-New Kingdom structure

Measurements of feature: linear feature L: 3.38m; W: 0.45m; max. extension of feature L: 4.1m, W: 2.4m

Stratigraphy: See Harris Matrix; contemporaneous with F101

Description: Linear mud brick feature, N-S oriented, parallel to F100; mud bricks set at eastern side, but against western face just loose single bricks without bond; large areas covered with organic deposits full of doum fruits and dung (SU 554); situated on top of gravel SU 561.

Dating/Interpretation: Probably western wall of small stable/hut formed with F101, set against glacis of New Kingdom town Wall F100; Post-New Kingdom, possibly Ottoman.

No. of feature: 103

Location of feature: SQ1

Main category: Mud brick wall

Sub category: Post-New Kingdom structure

Measurements of feature: L: 3.5m; W: 0.40m

Stratigraphy: See Harris Matrix, older than F101; abutting F100

Description: Linear mud brick feature; directly abutting F100.

Dating/Interpretation: Remains from the re-use of F100; see F101 and F102; Post-New Kingdom, possibly Ottoman.

No. of feature: 110

Location of feature: SQ1, along E face of F100; NW part of E half of square

Main category: Occupation deposits

Sub category: Street horizons

Measurements of feature: L: 2.1m; W: 1.08m

Stratigraphy: Abutting F100 (SU 664, 556, 692, 693) – see SU 623 and Harris Matrix

Description: Remains of street horizons in ‘wall street’, contemporaneous to use of F100 (abutting the east face); all layers very compact, on top of ashy layer.

Dating/Interpretation: 18th Dynasty layers within ‘wall street’ – original phase of use of this lane along F100; disturbed by later re-use and cutting, see mixed material in SU 664 (see micromorphological Profile 11).

No. of feature: 111

Location of feature: SQ1, NW-corner of square

Main category: Mud brick wall/structure

Sub category: Domestic building

Measurements of feature: L: 2.5m; W: 1.43m

Stratigraphy: SU 684, 687, 699; based on SU 699 contemporaneous to F100

Description: Various partly preserved mud brick wall remains; rectangular form, with additional (?) wall in the N; very ashy deposits inside.

Dating/Interpretation: Most probably one room of a domestic building from the early-mid 18th Dynasty occupation; according to parallels in Elephantine and the nature of the deposits probably used as an oven room. Remaining structure was not excavated; to be located to the N and E.

No. of feature: 112

Location of feature: SQ1, in the centre of the square, between brick walls

Main category: Occupation layers

Sub category: Settlement stratification

Measurements of feature: L: 1.35m; W: 1.48m

Stratigraphy: SU 676, 677, 702; SU 686, 690 and 694

Description: Remains of preserved stratification between and above brick walls (F111, F113 and F114); different layers (debris, organic, ashy...).

Dating/Interpretation: Multi-period use of corner between buildings and ‘wall street’; earliest phase probably 18th Dynasty; but according to pottery also Ramesside period. With F112 partly overlying F113 and F114, it seems to attest a phase with standing ruins from the 18th Dynasty. F112 also comprises one or more phases when the ‘wall street’ was used as traffic route, with incidental deposition of anthropogenic debris typical for streets (see micromorphological Profiles 12 and 14). The earliest phase of Profile 14 attests that the structures and streets at SAV1 West were at least partly built directly on the natural surface, in this case the gravel terrace (see SAV1 North).

No. of feature: 113

Location of feature: SQ1, east of F112

Main category: Mud brick walls

Sub category: Domestic structure

Measurements of feature: L: 2.01m; W: 0.48m

Stratigraphy: Lies partly below F112

Description: Two parallel E-W running walls; the western end lies under F112; the eastern end is not determined (because of the border of the square).

Dating/Interpretation: Probably the northern wall of a mud brick structure with a courtyard, comprising F115.

No. of feature: 114

Location of feature: SQ1

Main category: Mud brick wall

Sub category: Western wall of domestic structure

Measurements of feature: L: 1.91m; W: 0.31m

Stratigraphy: Partly below F112

Description: Complex of walls running N-S; remains from F112 towards the S; along eastern border of the ‘wall street’; two parallel walls – probably of various phases.

Dating/Interpretation: Probably western wall of a structure encompassing the courtyard with F115; at eastern side of ‘wall street’. Two walls running parallel to Enclosure wall F100; western one preserved to approx. 30cm in height; eastern one to approx. 10cm; probably belonging to two phases in the 18th Dynasty; western wall seems the later one (mid-late 18th Dynasty); comprising occupational deposits, partly disturbed in upper part. Micromorphological Profile 16.

No. of feature: 115

Location of feature: SQ1, SE-corner of square

Main category: Storage installation

Sub category: Rectangular cellar

Measurements of feature: L: 1.41m; W: 0.98m

Stratigraphy: See Harris Matrix

Description: Rectangular cellar with part of vault still in situ; excavated in the gravel below the courtyard surface (see F116) encompassed by Walls F113, F114 and F116.

Dating/Interpretation: According to the finds, this cellar dates to the Thutmoside period. It probably belongs to Phase B at SAV1 West. This also corresponds to one 14C Sample: SAV1W 848/2015, charcoal, from SU 732 (lowest filling), interior of F115 – calibrated date: 1505–1396 BC, Amenhotep I–Amenhotep III.

No. of feature: 116

Location of feature: SQ1, southern part of square

Main category: Mud brick wall and floor remains

Sub category: Inner corner of domestic building

Measurements of feature: L: 2.5m; W: 1.1m (with floor)

Stratigraphy: Below SU 675; comprises SU 707, 709

Description: Floor remains to the N and E-W running part of brick wall; most probably inner corner (SW) of a domestic structure; parallel to 'wall street'.

Dating/Interpretation: Very well-preserved mud floor, abutting the mud brick wall; clearly 18th Dynasty; probably Phase B at SAV1 West. Micromorphological Profile 18.

No. of feature: 117

Location of feature: SQ1S, NW-corner of square

Main category: Mud brick wall

Sub category: Domestic structure

Measurements of feature: L: 2.01m; W: 0.5m

Stratigraphy: On top of F120

Description: Linear mud brick feature; parallel to Enclosure wall F100 in the northern part, in S-corner toward the E; corner of building with southern and western walls; at eastern side of 'wall street'. Well-formed bricks on top of F120 (32 × 16 × 8–9cm).

Dating/Interpretation: Probably a domestic structure from a later phase within the 18th Dynasty occupation at SAV1 West; half-brick thick wall.

No. of feature: 118

Location of feature: SQ1S

Main category: Mud brick wall

Sub category: Domestic structure

Measurements of feature: L: 1.45m; W: 0.21m

Stratigraphy: Younger than F117 and 116; above SU 712; below SU 658; comprises SU 715, 716, 723 and 724

Description: Linear mud brick feature, E-W running, adjacent to former trench border (now F116); four bricks long (32 × 18 × 8.10cm), four bricks high – had to be removed.

Dating/Interpretation: Most probably remains of a Ramesside or Post-New Kingdom structure. Micromorphological Profile 19.

No. of feature: 119

Location of feature: SQ1S

Main category: Occupation layers

Sub category: Street horizons/levels

Measurements of feature: L: 3.1m; W: 1.42m

Stratigraphy: Abutting F100; below SU 648; 701, 704, 710

Description: Floors/street remains in the N and S; along the inner face of Enclosure wall F100; an E-W running wall in the northern part of the feature; directly abutting F100. Micromorphological Profile 17.

Dating/Interpretation: Re-use of 'wall street'; most probably Post-New Kingdom; highly disturbed sediments according to micromorphology but some remains of stable surfaces, supporting the re-use of F100 as shelter in Post-New Kingdom times.

No. of feature: 120

Location of feature: SQ1S, northern part

Main category: Mud brick wall

Sub category: Domestic structure

Measurements of feature: L. max. 1.85m; W. 0.20m

Stratigraphy: Below SU 697, 712 (older than F118)

Description: E-W running wall, badly preserved, adjacent to F118 (removed; Profile 19); only the top of the bricks are visible.

Dating/Interpretation: Most probably the northern wall of a structure from the early phase at SAV1 West; due to the bad state of preservation unclear; 18th Dynasty.

No. of feature: 121

Location of feature: SQ1S

Main category: Deposit/floor

Sub category: Floor remains

Measurements of feature: Max. extensions L: 3.5m; W: 1.5m

Stratigraphy: Below F117; below SU 711, 718, 720; above SU 877

Description: Stratigraphic sequence below F117, parallel to it and in 90° towards the E; different floor remains; fin thick fillings between; also some badly preserved remains of walls visible.

Dating/Interpretation: Presumably connected with F120 – maybe the southern part of a structure/room; dating to the 18th Dynasty; domestic area, roofed part of a former building.

No. of feature: 122

Location of feature: SQ1S, central E part of square

Main category: Stratigraphical layers

Sub category: Occupational deposits

Measurements of feature: L: 0.80m; W: 0.65m

Stratigraphy: SU 681–683 (2015); SU 896, 888, 889, 890, 892, 893, 896, 897 (2016); below SU 896

Description: Finely preserved street deposits, stratigraphic sequence of silty and ashy layers.

Dating/Interpretation: Stratigraphical layers from the 18th Dynasty, see Harris Matrix 2015 (and micromorphological Profile 13) and 2016 (differentiation in F122.1–122.5); still unclear if street levels or rather occupational deposits from within a structure – the latter is more likely, see Structure A. Located below F142.

No. of feature: 123

Location of feature: SQ1S, SE-corner of square

Main category: Mud brick wall

Sub category: Domestic structure

Measurements of feature: L: 3.91m; W: 1.6m

Stratigraphy: SU 863, 866–868, 873–876, 893; below SU 705

Description: Different wall fragments which form a rectangular structure with preserved corners; low brick quality; fully excavated in 2016 – W of F146, E of F141, relation remained unclear.

Dating/Interpretation: Rectangular mud brick structure; date unclear. Its layout differs from the other structures along the ‘wall street’ and an infant burial was discovered in its westernmost compartment – probably from a later phase of use, most likely the Christian period; see, however F162 (street levels between F123 and Structure A of the 18th Dynasty). Cf. also similar structures from the 18th Dynasty at SAV1 North, e.g. N26.

No. of feature: 124

Location of feature: SQ1, N part of square

Main category: Destruction

Sub category: Traces of *marog* digging

Measurements of feature: L: 5.51m; W: 3.98m–4.12m

Stratigraphy: Later than F100

Description: Destruction of the inner part of Enclosure wall F100 – complete removal of mud bricks until the natural ground.

Dating/Interpretation: Definitely Post-New Kingdom destruction; unclear if already Ottoman or most probably more recent *marog* digging (re-use of bricks as fertilizer).

No. of feature: 125

Location of feature: SQ1S, NW-corner of square – in Enclosure wall F100

Main category: Destruction

Sub category: Traces of *marog* digging

Measurements of feature: L: 4.12m; W: 2.57m

Stratigraphy: Later than F100

Description: Deep hole within the New Kingdom enclosure wall.

Dating/Interpretation: Definitely Post-New Kingdom destruction; unclear if already Ottoman or most probably more recent *marog* digging (re-use of bricks as fertilizer).

No. of feature: 126

Location of feature: SQ1S, E of Enclosure wall F100

Main category: Destruction

Sub category: Traces of *marog* digging?

Measurements of feature: L: 4.01m; W: 2.43m

Stratigraphy: Later than F100

Description: Huge pit with sandy filling on top of broken bricks/the remains of the enclosure wall; destruction of standing Pharaonic architecture.

Dating/Interpretation: Definitely Post-New Kingdom destruction; unclear if Ottoman or more recent (deep pit with sandy filling, similar to other pits in north-western part of the New Kingdom town).

No. of feature: 130

Location of feature: SQ1SE, N of F131, E of F136
Main category: Feature interface
Stratigraphy: SU 822, 840; above SU 823, 841; below SU 847
Description: Feature interface of oval shaped pit.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 131

Location of feature: SQ1SE, in southern part, delimited by baulk of square
Main category: Feature interface
Stratigraphy: below SU 831; above SU 839
Description: Feature interface of almost oval shaped pit.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 132

Location of feature: SQ1SE, in SE part, delimited by E-border of square
Main category: Feature interface
Stratigraphy: SU 803; below SU 807; above SU 809
Description: Feature interface of pit; arch shaped.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 133

Location of feature: SQ1SE, in centre of E part, delimited by E-border of square
Main category: Feature interface
Stratigraphy: Below SU 821; above SU 817, 832
Description: Feature interface of pit in N of F132; almost oval shaped.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 134

Location of feature: SQ1SE, in centre of W part, towards N-part of square
Main category: Feature interface
Stratigraphy: Below SU 824; above SU 826, 827, 833
Description: Feature interface of pit, N of F136 and F130, W of F138, S of F135; irregular shape.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 135

Location of feature: SQ1SE, in NW-corner of square
Main category: Feature interface
Stratigraphy: Below SU 825; above SU 833, 850
Description: Feature interface of pit; irregular shape.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 136

Location of feature: SQ1SE, in SW part of square
Main category: Feature interface
Stratigraphy: SU 823; below SU 841; above SU 828
Description: Feature interface of pit; almost oval shape, between W-border of square and F130.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 137

Location of feature: SQ1SE, in centre of square
Main category: Feature interface
Stratigraphy: Below SU 830; above SU 817, 832
Description: Feature interface of pit; almost circular shape; in NW of F138, in NE of 133, in SE of F140.
Dating/Interpretation: Post-New Kingdom.

No. of feature: 138

Location of feature: SQ1SE, in centre of square

Main category: Feature interface

Stratigraphy: Below SU 827, above SU 844

Description: Feature interface of trampling horizon SU 827, cut by F130, 134, 137; irregular shape.

Dating/Interpretation: New Kingdom?

No. of feature: 139

Location of feature: SQ1SE, in NE-corner of square

Main category: Feature interface

Stratigraphy: Below SU 817; above SU 845

Description: Feature interface of trampling horizon SU 817; irregular shape; N of F137 and F133.

Dating/Interpretation: Post-New Kingdom? unclear – F140 below cuts into F152 (18th Dynasty cellar).

No. of feature: 140

Location of feature: SQ1SE, in NE-corner of square

Main category: Feature interface

Stratigraphy: Below SU 845; above SU 851

Description: Feature interface of pit filled with sand almost of triangular shape; below F139.

Dating/Interpretation: Post-New Kingdom? F140 cuts into F152 (18th Dynasty cellar) and was filled with mixed material.

No. of feature: 141

Location of feature: SQ1S, in SW of square, next to F100

Main category: Trampling horizon

Stratigraphy: Below SU 863; above SU 870

Description: Last remains of a trampling horizon in W of F123, but relation unclear, just E of F100.

Dating/Interpretation: Post-New Kingdom? Definitely younger than F100, but precise chronology unclear; feature with mixed material.

No. of feature: 142

Location of feature: SQ1S, central E part of square, surrounding F122

Main category: Stratigraphical layers

Sub category: Occupational deposits

Measurements of feature: L: 2.48m; W: 2.71m

Stratigraphy: SU 877; below SU 882, 878, 870; above SU 896

Description: Irregular shape of cut off occupation layers, in N of F123 (to which the relation remains unclear).

Dating/Interpretation: Stratigraphical layers surrounding F122 from the 18th Dynasty, see Harris Matrix 2016; dating unclear, possibly late 18th Dynasty or Ramesside.

No. of feature: 143

Location of feature: SQ1S, in E of square; SQ1SE, in W of square

Main category: Mud brick wall (collapsed)

Sub category: Domestic building

Measurements of feature: L: 0.95m; W: 0.65m

Stratigraphy: Below SU 865; above F156

Description: Fallen/collapsed mud brick wall and some stones; destruction part of Structure D.

Dating/Interpretation: Collapsed part of F156; probably belonging to 18th Dynasty domestic architecture of SAV1 West, Structure D.

No. of feature: 144

Location of feature: SQ1SE, W border of square, N of F145 and 146

Main category: Mud brick wall

Sub category: Domestic building

Measurements of feature: L: 2.4m; W: 0.31m

Stratigraphy: Below SU 880, 884

Description: Remains of a mud brick wall of a structure; N-S fragment in line with F156; including faint traces of E-W running wall, in line with F161 (2 bricks); probably SE-corner of Structure A; half-brick wide wall.

Dating/Interpretation: Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; only a small part of the structure is preserved; probably belonging to F156 (and F120, 121, 161), forming Structure A; northern extension of this wall was excavated in 2017 (F157).

No. of feature: 145

Location of feature: SQ1SE, W part, next to F146 and F147

Main category: Feature interface

Stratigraphy: Below SU 881

Description: Feature interface of cut off stratigraphy; traces of occupational layers to the N of F146.

Dating/Interpretation: Material below the interface is definitely from the 18th Dynasty (see F146 and also F164 and 165).

No. of feature: 146

Location of feature: SQ1SE, south-eastern part

Main category: Mud brick wall

Sub category: Domestic building

Measurements of feature: E-W wall: L: 2.12m; W: 0.31m; N-S wall: L: 2.4m; W: 0.30m

Stratigraphy: Below SU 860

Description: Remains of a mud brick wall of a structure; running E-W, in line with F123 and F160; towards the western end the corner and the N-S running wall are preserved; belonging to rectangular structure encompassing F151 (Structure D); half-brick thick; S of F145 and SW of F147.

Dating/Interpretation: Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; NW-corner of Structure D.

No. of feature: 147

Location of feature: SQ1SE, south-eastern part, E of F146

Main category: Mud brick collapse

Sub category: Collapsed building

Measurements of feature: L: 1.5m; W: 0.98m

Stratigraphy: Below SU 860

Description: Fallen mud bricks and larger stones; covering northern wall of Structure D, east and above of F146.

Dating/Interpretation: Collapse of Structure D and debris; below F147 the wall F160 was unearthed in 2017. The collapse is probably from Post-New Kingdom times.

No. of feature: 148

Location of feature: SQ1NW, in centre of square, between F100 and F101

Main category: Interface

Stratigraphy: Below SU 883; above F101

Description: Cut off feature/interface of possible prepared surface/loamy silt; installation on outer face of F100; N of F149 and 150.

Dating/Interpretation: Post-New Kingdom; younger or contemporaneous to F101.

No. of feature: 149

Location of feature: SQ1NW, in southern part of square, between F100 and F101

Main category: Interface

Stratigraphy: SU 886; below SU 894; above F103

Description: Cut off feature/interface of installation on outer face of F100; S of F148, N of F150.

Dating/Interpretation: Post-New Kingdom; older than F101; younger or contemporaneous to F103.

No. of feature: 150

Location of feature: SQ1NW, between F100 and F101

Main category: Installation

Measurements of feature: L: 1.01m; W: 0.95m

Stratigraphy: Below SU 887; above F101

Description: Installation on outer face of F100.

Dating/Interpretation: Post-New Kingdom; younger or contemporaneous to F101; younger than F103.

No. of feature: 151

Location of feature: SQ1SE, S part of square

Main category: Storage installation

Sub category: Cellar/silo

Measurements of feature: L: 1.60m; W: 1.50m (top); 0.70m (base)

Stratigraphy: SU 907, 908 and 909

Description: Complete silo in the S part of Square 1SE; oval shape, lined with mud coating, no brick setting.

Dating/Interpretation: mid-18th Dynasty; Thutmoside

No. of feature: 152

Location of feature: SQ1SE + SQ1SE_E

Main category: Storage installation

Sub category: Cellar

Measurements of feature: L: 1.51m; W: 1.1m (top); 0.75m (base)

Stratigraphy: SU 917, 947 and 952

Description: Almost rectangular cellar, very similar to F115, with mud brick setting; located between Squares 1SE and extension 1SE_E.

Dating/Interpretation: Cellar within only partly preserved Structure C; mid-18th Dynasty; Thutmoside.

No. of feature: 153

Location of feature: SQ1, southern part of square and SQ1SE

Main category: Mud brick wall

Sub category: Domestic building

Measurements of feature: E-W part L: 1.01m; 0.20m; N-S part L: 0.90m; W: 0.21m

Stratigraphy: Maybe contemporaneous to F120

Description: Mud brick wall remains; probably a corner of a room or structure; E-W running part of brick wall in line with F116; at the western end two bricks are aligned N-S, connected as a corner; southern end up to F120.

Dating/Interpretation: Clearly 18th Dynasty; most probably Phase B at SAV1 West; later than F120.

No. of feature: 154

Location of feature: SQ1SE, northern part of square

Main category: Mud brick walls

Sub category: Domestic building

Measurements of feature: L: 2.51; W: 1.41m

Stratigraphy: Contemporaneous with F120?

Description: Remaining walls of a structure; E-W line of bricks in line with F120: two N-S adjoining fragments preserved; creating a small room, probably a domestic structure of which the northern part was not excavated.

Dating/Interpretation: Belonging to 18th Dynasty domestic architecture of SAV1 West; only a small part of the structure was excavated.

No. of feature: 155

Location of feature: SQ1SE/SQ1SE_E

Main category: Mud brick walls

Sub category: Domestic building

Measurements of feature: L: 1.1m; W: 0.20m (N-S fragment); L: 0.60m; W: 0.41m (E-W fragment)

Stratigraphy: Contemporaneous to F154

Description: Remaining walls of a structure; N-S fragment in line with N-S extensions of F154; maybe belonging to F154; E-W running wall/corner only preserved with 2.5 broken bricks; N of F152.

Dating/Interpretation: Belonging to 18th Dynasty domestic architecture of SAV1 West; only a small part of the structure was excavated.

No. of feature: 156

Location of feature: SQ1SE

Main category: Mud brick wall

Sub category: Domestic building

Measurements of feature: L: 0.80m; W: 0.21m

Stratigraphy: Below F143

Description: Remains of a mud brick wall of a structure; N-S fragment in line with F157; probably eastern wall of Structure A; half-brick wide wall. Isolated fragment.

Dating/Interpretation: Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; only a small part of the structure is preserved; probably belonging to F157 (and F120, 121, 161), forming Structure A.

No. of feature: 157**Location of feature:** SQ1SE**Main category:** Mud brick wall**Sub category:** Domestic building**Measurements of feature:** L: 0.85m (total: 1.65m); W: 0.20m (without southernmost bricks calculated as corner in F144)**Description:** This is the northern extension of Wall F144 which was covered with some debris in 2016.**Dating/Interpretation:** Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; only a small part of the structure is preserved; probably belonging to F156 (and F120, 121, 161), forming Structure A.**No. of feature: 158****Location of feature:** SQ1SE**Main category:** Mud brick wall**Sub category:** Domestic building**Measurements of feature:** L: 0.90m; W: 0.18m (N-S wall); L: 1.38m; W: 40.45m (E-W wall)**Stratigraphy:** Contemporaneous to F156?**Description:** Remains of a mud brick wall of a structure; N-S fragment parallel to F156; probably western wall/interior wall of Structure C; half-brick wide wall. Isolated fragment; in line with the corner of the quern emplacement of F159. E-W fragment parallel to F159.**Dating/Interpretation:** Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; probably small part of Structure C (courtyard house).**No. of feature: 159****Location of feature:** SQ1SE**Main category:** Mud brick wall**Sub category:** Domestic building**Measurements of feature:** L: 3.51m; W: 0.90m**Stratigraphy:** Contemporaneous to F158**Description:** Remains of a mud brick wall of a structure; running E-W, in line with F161; probably southern wall of Structure C; half-brick wide wall (width: 0.20m). Remains of a quern emplacement attached to the northern side of the wall (max. 1.01m × 0.52m). A possible entrance area is preserved at the western end of the E-W wall, faint traces of a N-S extension towards the N (1.10m) with a corner at the end.**Dating/Interpretation:** Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; only small parts of Structure C are preserved; probably belonging to F158 and F152; street façade of courtyard house with installations.**No. of feature: 160****Location of feature:** SQ1SE, southern part**Main category:** Mud brick wall**Sub category:** Domestic building**Measurements of feature:** L: 0.91m; W: 0.19m**Stratigraphy:** Below F147; belonging to F146**Description:** Remains of a mud brick wall of a structure; running E-W, in line with F123 and F146; probably eastern extension of F146 and thus belonging to the rectangular structure encompassing F151 (Structure D).**Dating/Interpretation:** Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; only a small part of Structure D is preserved; one corner with N-S and E-W walls; some street levels still attached to the north-western corner (outside the structure).**No. of feature: 161****Location of feature:** SQ1SE**Main category:** Mud brick wall**Sub category:** Domestic building**Measurements of feature:** L: 2.51m; W: 0.17m**Stratigraphy:** Contemporaneous to F162**Description:** Remaining part of a mud brick wall of a structure; running E-W, in line with F159; probably southern wall of Structure A; half-brick wide wall. Some stratigraphic layers preserved at the southern side – street layers F162.**Dating/Interpretation:** Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; only a small part of the structure is preserved; probably belonging to F157 (and F120, 121, 156), forming Structure A.**No. of feature: 162****Location of feature:** SQ1SE

Main category: Occupational layers

Sub category: Street horizons

Measurements of feature: L: 1.4m; W: 1.01m

Stratigraphy: Contemporaneous to F161

Description: Street layers attached to the mud brick wall of F161; fine silty layers; cut at both sides, but most probably adjacent to F123 – thus bridging the complete distance of the main E-W street at SAV1 West.

Dating/Interpretation: Belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; remains of the main lane running towards the E at SAV1 West; connected with ‘wall street’; separating (and possibly connecting) Structure A with F123.

No. of feature: 163

Location of feature: SQ1SE

Main category: Installation

Sub category: Storage pit

Measurements of feature: Diam. 0.70m

Stratigraphy: Contemporaneous to F121?

Description: Small circular pit dug into the natural gravel.

Dating/Interpretation: Installation, most probably storage pit, belonging to early-mid 18th Dynasty domestic architecture of SAV1 West; located in courtyard/open space of Structure A.

No. of feature: 164

Location of feature: SQ1SE

Main category: Cultural surface

Sub category: Street layer

Measurements of feature: L: 1.1m; W: 0.89m

Stratigraphy: Below F145; younger than F165

Description: Street layers attached to the mud brick wall of F146; mud surface, silty layers; cut towards the N and to the E and W.

Dating/Interpretation: Small patch of remains of street surface in the E-W lane between Structures D and E.

No. of feature: 165

Location of feature: SQ1SE

Main category: Cultural surface

Sub category: Street layer

Measurements of feature: Max. L: 3.3m; W: 1.35m

Stratigraphy: Older than F164

Description: Street layers covering the complete width of the E-W lane in SQ1SE; attached to the mud brick wall of F146 and F159; mud surface, silty layers; cut towards the E and W.

Dating/Interpretation: Remains of an older street surface in the E-W lane between Structures D and E.

3.3.5 The Harris Matrix of SAV1 West⁴⁹⁰

As outcome of the stratigraphic excavation at SAV1 West, the complete Harris Matrix of the sequences was established for the excavations in 2015 (Plan 4) and 2016 (Plan 5). The results of the other seasons, in particular the relations to the stratigraphy, was incorporated into the catalogue of features (Chapter 3.3.4).

3.4 COMPARISON BETWEEN SAV1 EAST AND SAV1 WEST

The comparison between the sites excavated by AcrossBorders in the town area will focus on the sectors SAV1 East and SAV1 West. Sector SAV1 Northeast is not suitable for an assessment in this respect because it only represents a test trench for tracing the town wall (see Chapter 3.5). The evaluation of similarities and dissimilarities between SAV1 East and SAV1 West shall start with highlighting the correspondences: both sectors yielded abundant material from the 18th Dynasty; both attest by means

⁴⁹⁰ Composed by Klara Sauter for the years 2015 and 2016 with the software HarrisMatrixComposer.

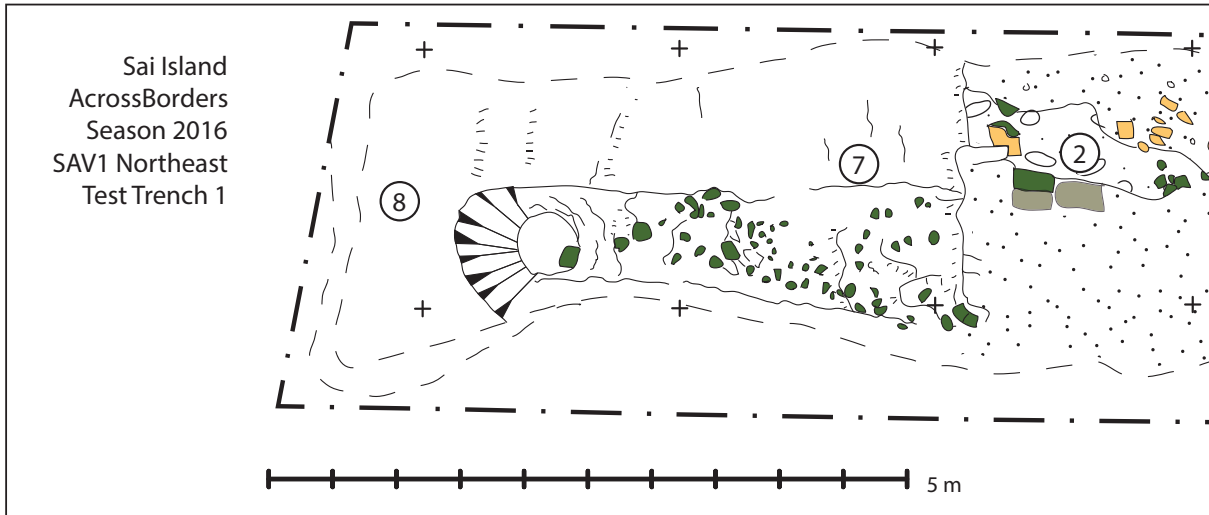


Fig. 48 Excavation results in Trench 1

of scattered Ramesside sherds to a use of the areas in the later New Kingdom, missing, however, clear architectural remains. SAV1 East and SAV1 West have both experienced Post-New Kingdom activities and have suffered from pitting and *marog* digging, partly destroying the stratigraphic evidence. Both sectors held remains of modest domestic mud brick buildings with storage installations.

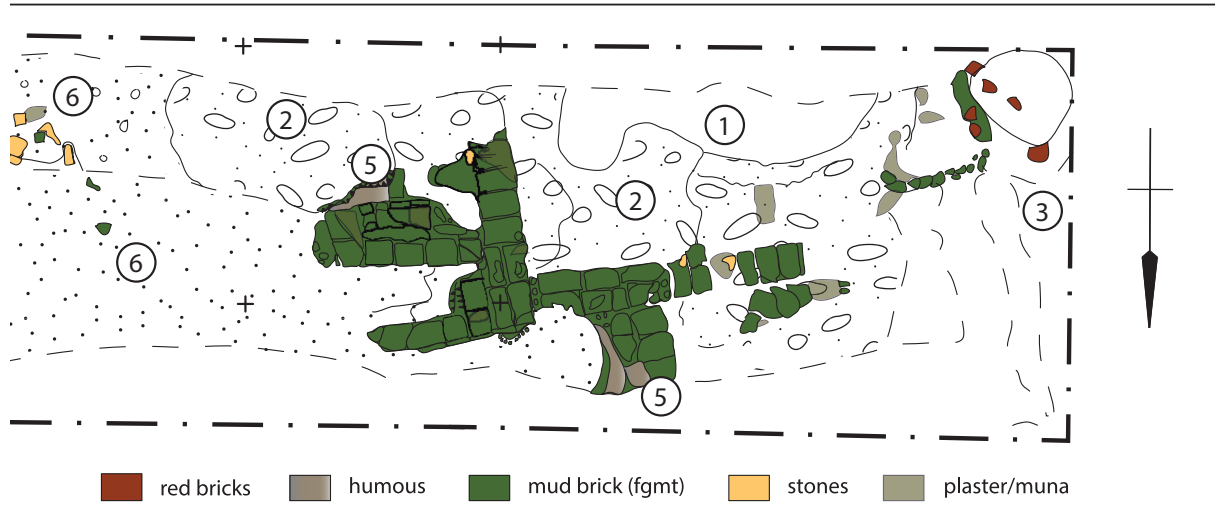
The differences between SAV1 East and SAV1 West first concern the topographical situation: SAV1 East lies above the sandstone cliff, the area is sloping in this part and the preserved deposits were in general quite shallow. The best preserved remains at SAV1 East were the subterranean cellars. SAV1 West is fronted by a ditch towards the west but shows a rather even topographical surface in its eastern half. The main feature at SAV1 West is the town enclosure and this substantial structure seems to have protected adjacent mud brick structures which are much better preserved, despite of *marog* digging, than at SAV1 East. The town enclosure at SAV1 West compares well to SAV1 North, as does the general outline as well as the sequence of the site. A narrow wall street and houses of half-brick thickness were documented at SAV1 West east of the town enclosure wall and are very similar to the remains in the northern sector, also including storage installations/silos.⁴⁹¹

SAV1 East is slightly different in character; it best compares in its early phase to the area excavated by Azim around Temple A. Its later phase, however, markedly contrasts from both SAV1 West and SAV1 North and in its architectural layout finds close parallels at SAV1. Like the southern part of the town, SAV1 East comprises with Building A a large, probably administrative building as well as large magazines and substantial cellars. Comparable buildings and magazines are missing at SAV1 West; the cellars found there are much smaller and of a less sophisticated type.

All in all, although the general phasing and the dating of the occupation at SAV1 East and SAV1 West are very similar, there are substantial differences in the general organisation and structure of the sites. These alterations can best be explained with New Kingdom Sai as an Egyptian town with several distinct sectors: whereas SAV1 North and SAV1 West obviously represent domestic areas with household and workshop activities like milling and bread baking, the character of SAV1 East changed in Phase B of the site. Contemporaneous with the erection of the town wall, the stone temple and the representative buildings in the southern part including the large magazines, SAV1 East was constructed according to the orthogonal layout of the southern part and was obviously associated with the temple and storage facilities connected with the so-called *ḫnw*.⁴⁹² SAV1 East can be regarded as part of the official/administrative Sai closely con-

⁴⁹¹ Cf. Budka 2015b; Budka 2017f.

⁴⁹² On these *ḫnw*, the so-called tributes from Nubia, see Morkot 1991; Morkot 1995; Smith 2003a, 70–73 with further references; cf. also Fiandra 2002 for the administrative procedures at storehouses in Egypt and Nubia.



at sector SAV1 Northeast, 2016 season

nected with the main function of an Egyptian temple town, whereas the western and northern sectors have more of a domestic character connected with crafts, household activities, stabling and possibly dwelling.

3.5 SECTOR SAV1 NORTHEAST

One of the main questions about the setting of the New Kingdom town of Sai was the position of its eastern town enclosure. It was assumed that this part of the former city wall had collapsed into the Nile.⁴⁹³ Geological surveys of the sandstone cliff by AcrossBorders allowed a modification of this assessment, evaluating severe erosion in this part of the island as highly unlikely (see above, Chapter 2.2.1). It was suggested that the eastern perimeter wall was located further towards the west and might be traceable after all above the sandstone cliff along the eastern side of the island. In this respect, “negative linear anomalies” visible on the geophysics survey map from 2011 and tentatively identified as a possible extension of the north-south street, Rue NS1 of Azim⁴⁹⁴ were of interest. In 2016, a 15 × 3m test trench labelled Trench 1 of site SAV1 Northeast was opened by AcrossBorders above these anomalies on the slight slope of the east side close to the presumed northeastern corner of the town (see Fig. 3 and Fig. 48).

Excavation work at SAV1 Northeast was conducted with a group of workmen according to the stratigraphical excavation technique applied at SAV1 East and SAV1 West. Unsurprisingly, the surface layers were found as very much disturbed and mixed. However, already on the surface the percentage of 18th Dynasty pottery was notable and compared well to SAV1 East. The deposits were very sandy and the steep slope of the site towards the east made excavation challenging.

Between some pits with sandy backfilling along the western edge of the trench, a few bricks were documented which were still in situ (Fig. 48). The brickwork faded towards the west. The central part of Trench 1 was dominated by a gravel surface and a thin mud horizon, possibly some kind of floor or surface preparation. Fragmented bricks in this area were difficult to interpret and could belong to a later phase or maybe a tower-like structure.

A steep slope was noted towards the west of Trench 1; its surface had similar properties as the glacis-like structure excavated at SAV1 West. The deposits at the bottom of the trench, along its western edge,

⁴⁹³ Geus 2004a, 115, fig. 89, based on the reconstruction by Azim 1975, 94, pl. 2.

⁴⁹⁴ Crabb and Hay 2011, 16; on this street, see most recently Adenstedt 2016, 32.

were dominated by a massive amount of pottery sherds, indicating that waste and debris has accumulated throughout the ages in this part of the island.

Although only scarce remains of brickwork were found, it is safe to assume that Trench 1 yielded the remains of the eastern city wall of Sai. The reconstruction of the eastern side of the town walls with a width of *c.* 4.3m was possible and would thus correspond to the previously unearthed parts of the town enclosure. Associated pottery suggests a dating of the remains in SAV1 Northeast to the mid-18th Dynasty (Thutmoside). Based on this new discovery, the east-west extension of the New Kingdom town measured only 118–120m.⁴⁹⁵

3.6 URBAN PLANNING AND BUILDING PHASES

Despite of clear evidence of urban planning, there are several different sectors within the town, which contrast regarding their layout and dating⁴⁹⁶ and will be presented in the following.

The Egyptian temple town of Sai can now be safely reconstructed as taking up a width of *c.* 120m, with traces of the eastern town wall located in sector SAV1 Northeast. Of the fortification walls surrounding the town, remains on the north and south sides were known prior to AcrossBorders fieldwork.⁴⁹⁷ With the newly discovered brickwork at SAV1 Northeast, an interpretation of the steep cliff at the northeastern corner of the town, site 8-B-522, as Pharaonic landing place (or one of the landing places) seems likely.⁴⁹⁸

Urban planning and orthogonal layout of the New Kingdom town of Sai is evident in the southern part and can also be traced in SAV1 East. However, a comparison of all excavated parts of the town area nicely illustrates that there are considerable differences between the individual sectors. Although this may partly be explained by a slight variance in dating, it seems to be a distinct feature of the site. Sai Island can, therefore, be taken as another example for an Egyptian walled town in which real developments may differ significantly from theoretical urban planning. A dissonance of houses from “standard types” was also recorded at the neighbouring site of Amara West and was in general probably actually common in Egyptian towns.⁴⁹⁹ Sectors SAV1 North and SAV1 West of Sai particularly exemplify short-term buildings and complicated processes within one complex town area which was part of a very dynamic world with remarkable changes during the New Kingdom.⁵⁰⁰

The evolution of Sai Island in Pharaonic times and especially its development from the early 18th Dynasty to the Ramesside era can now be traced in its most important phases. As suggested by textual evidence and finds from the contemporaneous pyramid cemetery SAC5, Sai Island was the administrative centre of Upper Nubia (Kush) during the Thutmoside Period and the predecessor of Soleb and Amara West.⁵⁰¹ Sector SAV1 East seems to markedly illustrate the change of occupation with the long-term installation of the Egyptian administration on Sai after the defeat of the Kerma Kingdom by Thutmose III. Whereas in the early levels the sector has parallels with SAV1 North, probably associated with the role of a simple landing place, the character of the site changed in Thutmoside times. Building A and large-sized cellars testify a close connection to the stone temple and can only be explained by the function of the town itself as administrative headquarter of the Egyptian occupation in Kush.⁵⁰² For the understanding of the internal structure of the town, it is important that the remains at SAV1 East allow a reconstruction of the orthogonal layout known from the southern part of the town as extending further towards the north, beyond Temple A. As mentioned above, sectors SAV1 North and SAV1 West illustrate the dynamic elements within Egyptian town planning with slight alternations from standard plans of buildings.

⁴⁹⁵ Adenstedt 2016, 24, fig. 7; see also Adenstedt 2018.

⁴⁹⁶ Budka 2015b; Budka 2017b.

⁴⁹⁷ Adenstedt 2018.

⁴⁹⁸ For the Christian use of the site, see Hafsaas-Tsakos and Tsakos 2012, 85–87. See also Chapter 2.5.

⁴⁹⁹ Spencer 2015, 201–202.

⁵⁰⁰ See Budka 2017f.

⁵⁰¹ Minault-Gout and Thill 2012, 415, fn. 27; Budka 2013a, 78–87; Budka 2015b, 74–81; Budka 2015d, 57.

⁵⁰² Budka 2017c, 80.

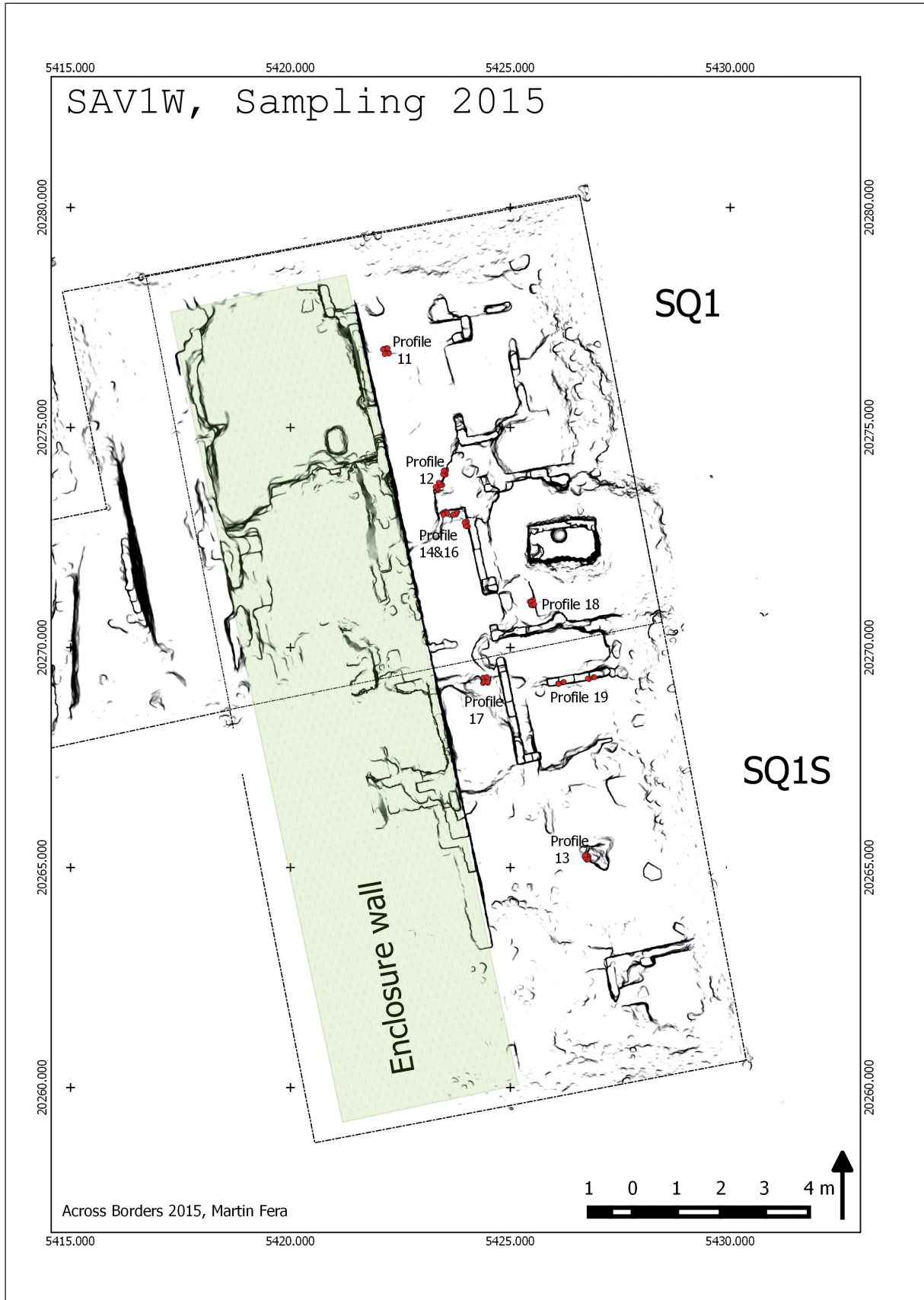


Fig. 49 Locations of micromorphological sampling at SAV1 West, 2015 season

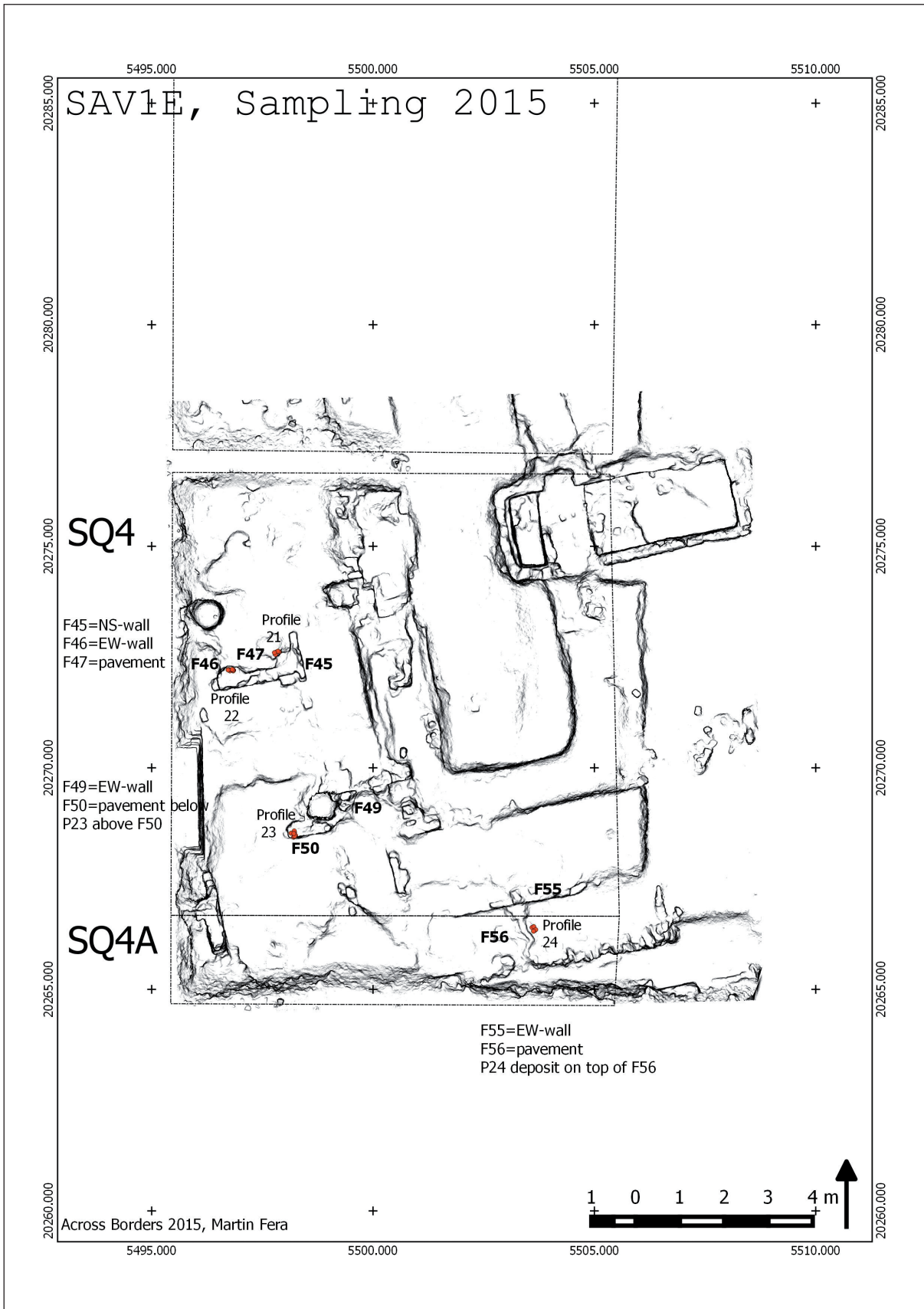


Fig. 50 Locations of micromorphological sampling at SAV1 East, 2015 season

3.7 MICROMORPHOLOGICAL SAMPLING PROGRAMME⁵⁰³

During the 2015 season a micromorphological sampling programme was implemented within the AcrossBorders project and developed further in 2016.

3.7.1 The 2015 sampling season: introduction

During the 2015 season sampling in the New Kingdom town focused on the 18th Dynasty occupation in SAV1 West (Fig. 49) and SAV1 East (Fig. 50).⁵⁰⁴ The aim was to examine the formation processes of various cultural depositional sequences in selected contexts in order to investigate how daily life activities contributed to the creation and use of space in the town. One of the objectives was to detect and characterise traces of space use as indicators of social behaviour. The approach taken for the investigation of daily life activity is a micromorphological analysis of the formation processes of floors in buildings and street surfaces.⁵⁰⁵ A total of 18 profiles were taken within all areas of excavation by Miranda Semple and Sayantani Neogi (9 profiles in SAV1 West; 4 in SAV1 East; 5 in SAV1 North).⁵⁰⁶

The sampling methodology began with careful cleaning of the contexts to be sampled. Martin Fera photographed and sketched the context at 1:5. A micromorphological description was completed for each profile based on macroscopic visual examination of each deposit or sequence of deposits, including the colour (Munsell), texture and structure⁵⁰⁷ of the sediments and the presence of anthropogenic inclusions, pottery, bone and organics (charcoal). All significant architectural associations with the sedimentary contexts were carefully identified and recorded in order to link occupation phases with the cultural chronology. Samples were taken using plaster bandages and occasionally Kubiëna tins. A few well-compacted samples were carved as blocks, covered with plastic wrap and securely taped. Bulk samples were taken for each sample for geochemical testing e.g., EC, pH and P. Each sample was given a profile number and points were taken using a Leica Total Station to identify the precise location of each soil block within the contexts and the square.

The micromorphological sampling program implemented during the 2015 field season of the New Kingdom town on Sai provided an initial set of soil blocks for thin section manufacture and micromorphological analysis. The various contexts that were sampled had potential to shed fresh light on the organisation and use of space while elucidating some aspects of social practice within the community of 18th Dynasty Sai.

3.7.2 Results from 2015 samples taken in the ‘wall street’ of SAV1 West⁵⁰⁸

Five profiles (Profiles 11, 12, 14, 16 and 17) were taken at SAV1 West from the context of the street adjacent to the enclosure wall Feature 100, the so-called ‘wall street’. The profiles are here described sequentially from the northernmost sampling location, Profile 11 to Profile 17 in the south (see Fig. 49). A total of thirteen block samples were taken to investigate the depositional contexts and associated features for this traffic route along the town wall in the New Kingdom town. Based on the archaeological record, Profiles 11, 12, 14 and 16 should be associated with New Kingdom activities, whereas Profile 17 clearly belongs to the re-use of the area in Post-New Kingdom times.

⁵⁰³ This chapter is based on the field reports by Miranda Semple, Sayantani Neogi and Sean Taylor.

⁵⁰⁴ Report by Miranda Semple; see Semple 2015.

⁵⁰⁵ Matthews et al. 1997; Boivin 2000.

⁵⁰⁶ For an assessment of the samples from SAV1 North, see Budka 2017f, 173–174.

⁵⁰⁷ Bullock et al. 1985; Stoops 2003.

⁵⁰⁸ Based on the report by Miranda Semple; Semple 2018.

Methodology

In field, the block samples were removed from pedestals or sections by gentle carving and then wrapped in plaster bandages. The sampling contexts were photographed and the sampling locations recorded using a total station. Field descriptions of the sampling locations were completed including Munsell colour, macroscopic descriptions of the sedimentary context and any significant associated features or installations.

The samples were transported to the University of Cambridge and the sections were manufactured at the Thin Sectioning Facility of the McBurney Geoarchaeology Laboratory University of Cambridge by Tonko Rajkovaca, Chief Research Laboratory Technician (Geoarchaeology).

The thin sections were first examined at a scale of 1:1 and then analysed with petrographic microscopes at magnifications ranging from x4 to x400 using plane-polarised light (PPL), crossed-polarised light (XPL) and oblique incident light (OIL). Micromorphological descriptions are based on the internationally accepted terminology outlined in Peter Bullock et al. and George Stoops.⁵⁰⁹ The interpretation of the thin sections was aided by the McBurney Laboratory reference collection.

Thin section analysis

The analysis of the sediments that comprise Profiles 11, 12, 14, 16 and 17 identified a group of constituent materials that are present and shared by all the deposits, creating a series of common characteristics. These constituents are described first to avoid repetition in the descriptions.

The coarse fraction comprises approximately 15% to 30% of the total deposits with the coarse mineral component consisting of moderately to poorly sorted very fine to medium quartz sand with inclusions of coarse silt sized quartz sand ($>25\mu\text{m}$), traces of chert and limestone lithoclasts derived from the parent material (Tab. 11 for size classes of mineral grains).

The fine fraction includes any element $\leq 25\mu\text{m}$, being a silty, sandy (coarse quartz silt) clay and organic punctuations. The coarse/fine related distribution is mainly enaulic with several examples of a porphyric-related distribution. The birefringence fabric is commonly weakly calcitic crystallitic.

The organic material consists mainly of plant remains including tissue and cell residues. Occasionally, well-preserved large tissue fragments ($\leq 10.5\text{mm}$) are present. Amorphous organic fine material is present in most profiles as is organic pigment. The organic material is predominantly humified with examples of desiccated remains. Semi-quantitative estimates for the organic material and the types present, in conjunction with the range of anthropogenic inclusions, contribute to the interpretation of the use of the 'wall street'.⁵¹⁰

The deposits that comprise most of the profiles are throughout characterised by a similarity in coarse and fine mineral material indicating similar background processes of accumulation. Contributions of aeolian origin are predominately coarse quartz silt, very fine and fine quartz sand with additional inputs

Size Range for Mineral Grains Standard Range	
Silt	2 \leq 20 μm
Coarse silt	20–50 μm
Very fine sand	50–100 μm
Fine sand	100–200 μm
Medium sand	200–500 μm
Coarse sand	500–1000 μm
Fine gravel	$>2000\mu\text{m}$
Relative Abundance	
Very Few	$<5\%$
Few	5–15%
Common	15–30%
Frequent	30–35%

Tab. 11 Key to size classes, abundance and descriptive terms. After Stoops 2003, Tabs. 4.1 and 4.2

⁵⁰⁹ Bullock et al. 1985; Stoops 2003.

⁵¹⁰ Kaufman et al. 1985; Macphail 2010; Matthews 2010.

Aggregates	Shape	Inclusions	Colour
Type A – surface material of fine silt, sand and clay	Variable subangular to sub-rounded	Amorphous organic material, vegetal voids and punctuations, quartz sand, occasional small nodules of micrite or iron	Medium brown
Type B – fine silt and clay/alluvial silt often laminar (crusting)	Sub-angular to sub-rounded commonly laminated	Coarse quartz silt, occasional punctuations, fine comminuted organic material	Pale brown to red-brown (iron rich)
Type C – organic-rich with biomineral inclusions	Sub-rounded to rounded	Cell residues, amorphous material, punctuations, phytoliths (articulated and disarticulated), coarse quartz silt to fine quartz sand, variable porosity	Yellow to dark brown (iron rich)
Type D – burnt aggregates to unidentifiable aggregates	Rounded to sub-rounded	Variable	Various

Tab. 12 Overview of characteristics of aggregates types

of organic material. Deposits exhibiting significant variation in microstructure, organisation and post-depositional alteration are discussed in each section or unit description.

Profile 11

This section consists of a highly disturbed sediment exhibiting a granular microstructure with zones of bioturbation and traces of vegetal voids. The coarse mineral component is dominated by randomly distributed unsorted quartz sand. The organic material ($\leq 10\%$) includes a range of strongly humified material including tissue fragments ($\leq 10.5\text{mm}$ in size) and elongated cell residues scattered in the groundmass. Anthropogenic inclusions are minimal, being traces of ash. Several Type A aggregates (aggregates of surface material) and Type B aggregates (fragments of fine, laminar silt) dot the groundmass (Tab. 12 and Pl. 57a).

Profile 11: deposition and formation processes

Profile 11 was taken within Feature 110, which represents the original New Kingdom use of the ‘wall street’ which was disturbed by later re-use and cutting. Through the thin section of the sample it became obvious that the depositional and post-depositional processes had been almost completely erased by random mechanical mixing. This is likely the result of the Ottoman excavation of the area, effectively reworking the sediment to produce a chaotic fabric.

Profile 12

Profile 12 is comprised of a sequence of six depositional units with partial capture of the basal deposit.

Section 12.1 consists of two units. Unit 12.1/1 is characterised by a vesicular to vughy microstructure with moderately sorted, medium quartz sand dominating the coarse mineral component. The organic material is limited ($\leq 10\%$) and consists mainly of randomly scattered cell residues with occasional tissue residues and several Type C aggregates (rich in organic matter).

Unit 12.1/2, in contrast to 12.1/1, exhibits a granular to vughy microstructure with traces of vegetal voids. The coarse mineral component is mainly unsorted quartz sand. The abundance of organic material ($\leq 30\%$) includes tissue fragments ($\leq 20\text{mm}$) and elongated cell residues with traces of silicified material. Anthropogenic inclusions consist of occasional fragments of mud brick (Pl. 57b) and charcoal. Several organic-rich Type C aggregates are also present in the groundmass.

Section 12.2 is a thick, disturbed deposit exhibiting a weakly separated granular microstructure with crumb domains and occasional vughs. The coarse mineral component is mainly unsorted quartz sand. Similar to 12.1/2, the deposit includes a range of organic material ($\leq 20\%$) and randomly distributed tissue fragments ($\leq 8\text{mm}$) but is dominated by cell residues. Micritic infillings/coatings are preserved in the lower half of the section. Anthropogenic inclusions consist of fragments of abraded mud brick that include a vegetal temper not present in Unit 12.1/1; a large piece of bone (clearly visible in section) and Type C aggregates were also identified. Below the large bone fragment the deposit is relatively richer in organic cell residues and includes several well-preserved pockets of ash and fragments of charcoal (Pl. 57i).

Section 12.3 consists of a thick, disturbed deposit exhibiting a weakly separated granular microstructure with crumb domains and occasional vughs. The coarse mineral component is mainly unsorted quartz sand. The deposit includes a range of organic material ($\leq 10\%$), traces of tissue residues and cell residues with amorphous fine material dominating the organic component. Micritic infillings/coatings are present throughout the section. In addition, several randomly oriented Type B aggregates dot the groundmass as well as Type C aggregates and fragments of mud brick (Pl. 57c).

Section 12.4 consists of two units. Unit 12.4/1 is a moderately disturbed deposit exhibiting a granular microstructure with extensive excremental domains and a diffuse lower boundary. The coarse mineral component is dominated by moderately sorted fine quartz sand. The organic material ($\leq 20\%$) includes trace amounts of tissue fragments ($\leq 1.5\text{cm}$) with cell residues and amorphous organic material exhibiting various stages of humic decomposition. Disarticulated phytoliths and silicified material are present in small quantities within the groundmass. The anthropogenic inclusions comprise several clearly visible pottery fragments with a semi-horizontal orientation. Several Type B and Type C aggregates are randomly scattered in the groundmass.

Unit 12.4/2 consists of a granular to vughy microstructure including occasional random, coarse sized irregularly shaped vughs with a slightly undulating upper boundary. The coarse mineral component is dominated by moderately sorted fine quartz sand and the organic component ($\leq 10\%$) includes tissues residues ($\leq 1\text{mm}$), cell residues and amorphous organic material. A few abraded Type B aggregates are scattered in the groundmass.

Profile 12: deposition and formation processes

Profile 12 was taken together with Profile 14 at Feature 112, layers of settlement stratification with clear multi-period use at the corner between mud brick walls and the 'wall street' (between Structures B and C). Within the deposits of Profile 12, a number of significant features were identified that indicate episodes of depositional and post-depositional alteration resulting from predominantly anthropogenic activity. These events characterise Profile 12 as a sequence of occupation deposits with one exception, Unit 12.1/1.

In contrast to the rest of the deposits in Profile 12, Unit 12.1/1 exhibits a compact structure with a relatively homogenous distribution of the coarse fraction with the void space being commonly vesicular. These characteristics indicate that the unit is an intentionally prepared plaster mix. The preparation of the soil mix by kneading, "pugging", results in vesicles and the inclusion of organic aggregates and traces of anthropogenic debris indicate a locally-sourced sediment, likely from the settlement itself.

For most of Profile 12, Units 12.1/2 to 12.4/1, the deposits are similar in microstructure presenting variations in the quantities of organic material, the quantity of anthropogenic inclusions and the occasional pedofeatures. The degree of bioturbation resulting in excremental zones indicates that initially, significantly, greater quantities of organic material were present than have been preserved. This is highlighted in Unit 12.4/1 in which extensive excremental zones emphasise the activity of soil fauna.

While organic material is present throughout Profile 12, larger quantities of particularly amorphous fine material are present in Unit 12.1/2, and in Section 12.2 greater amounts of cell residues ($\leq 20\%$). Additionally, large tissue fragments (ranging from 20mm to 3cm) are randomly distributed in the groundmass. The preservation of large fragments and larger quantities of organic material sug-

gests rapid burial, delaying the humification process.⁵¹¹ The anthropogenic material includes several pottery sherds (Unit 12.4/1) and a large piece of bone (Section 12.2) with trace amounts of charcoal (Unit 12.1/2), bone fragments and several pockets of ash (Section 12.2).

The main pedofeatures identified in Profile 12 are a range of aggregates and infillings/coatings. Features that indicate surface processes are ephemeral due to depositional and post-depositional anthropogenic disturbance, these include Type A aggregates of surface material (Pl. 57d) while Type B consists of fine laminar silt indicating fragments of surficial crusting, suggesting a disruption of weakly stable surfaces. Both types are the result of disruption and mechanical mixing. Type C aggregates are also present. These aggregates are commonly sub-rounded and rich in plant remains (Pl. 57e). Infillings and/or coatings of micrite are identified in Sections 12.2 and 12.3, indicating a post-depositional alteration of the sediments by pedogenic processes.

As proposed by the field archaeologists, the sequence that constitutes Profile 12 presents a series of occupation deposits that were intermittently disrupted and reworked. The upper deposits suggest a mechanical disturbance and tumble from eroding wall material present in 12.1 and 12.2 which are probably related to a late 18th Dynasty/Ramesside activities at SAV1 West. The lower half of the Profile, Sections 12.3 and 12.4, exhibit less disturbance with the incorporation of laminar crusts and surficial aggregates indicating weak surfaces that were disrupted by traffic through the street. The preservation of organic material suggests that airborne debris was continually being deposited in the street and buried. Domestic activity is indicated throughout the deposits by the anthropogenic debris. However, the limited quantities suggest incidental deposition rather than intentional discard. This corresponds to the function of the ‘wall street’ as a routeway at SAV1 West during the original phase of use of Structures B and C.

Profile 14

Profile 14 is comprised of a sequence of five depositional units, taken at Feature 112.

Section 14.1 consists of a thick sediment with a vughy to vesicular microstructure overlain by horizontal planar voids. The coarse mineral component exhibits a relatively homogenous distribution dominated by well sorted very fine quartz sand. Vegetal voids preserve traces of disarticulated phytoliths and exhibit a semi-horizontal orientation visible at the macroscale. The organic material ($\leq 30\%$) includes desiccated plant remains (glumes/awns-inflorescence), fragments of organ and tissue residues (4–6.5mm), strongly humified amorphous organic material and punctuations. The anthropogenic inclusions are sparse, consisting of traces of decalcified ash and several Type C aggregates.

Section 14.2 is a highly disturbed sediment with a crumb microstructure and some welding of small aggregates. Occasional dense domains exhibit planar voids and randomly oriented vegetal voids. The coarse mineral component is randomly distributed and comprises of moderately sorted very fine and fine quartz sand. The organic material ($\leq 20\%$) consists of tissue residues, amorphous fine material and punctuations. Anthropogenic inclusions are minimal, but varied, and include fragments of charcoal, traces of ash, unburnt bone (fish vertebra?) and a large piece of pottery. Occasional Type C aggregates dot the groundmass. These aggregates exhibit variation, a few with limited organic material and several that are organic-rich being embedded with phytoliths and faecal spherulites.

Section 14.3 Unit 14.3/1 exhibits a moderately disturbed sediment with a predominately granular microstructure and occasional vegetal voids. The lower boundary is clear but undulating. Moderately sorted randomly distributed fine and medium quartz sand is the main coarse mineral component. Clearly visible at the macroscale is a biogallery that extends into the earliest unit (14.3/3). The organic material ($\leq 10\%$) includes moderately to strongly humified elongated strands, tissue and cell residues with amorphous fine material scattered through the unit. The organic material also exhibits strong birefringence. Anthropogenic inclusions are sparse, being traces of charcoal and bone fragments.

Unit 14.3/2 exhibits a moderately separated granular microstructure and occasional vegetal voids. The upper boundary is clear. The coarse mineral component consists of moderately sorted randomly

⁵¹¹ Babel 1975; Courty et al. 1989.

distributed fine quartz sand. The organic material ($\leq 10\%$) includes moderately to strongly humified strands as well as elongated silicified strands of tissue and cell residues with amorphous fine material scattered through the unit. Traces of anthropogenic inclusions include charcoal and bone fragments.

Unit 14.3/3, in contrast to the two upper units, exhibits a weakly developed sub-angular blocky microstructure with traces of vegetal voids and an undulating but clear upper boundary. The coarse mineral component is mainly moderately sorted fine quartz sand and the organic material ($\leq 5\%$) consists of traces of tissue and cell residues with strongly humified amorphous organic material. No anthropogenic inclusions were identified.

Profile 14: deposition and formation processes

Within the deposits a number of significant features were identified that indicate episodes of depositional and post-depositional alteration, mainly the result of anthropogenic activities and comparable to Profile 12.

Section 14.1 presents a stark contrast to Sections 14.2 and 14.3. The vuggy to vesicular microstructure in conjunction with horizontal planar voids and the relatively homogenous distribution of the coarse fraction with the mineral component dominated by coarse silt-sized quartz sand suggests an intentional collection and processing of locally-sourced sediment. The organic inclusion suggests temper used to manufacture a plaster mix.

Section 14.2 is a highly disturbed occupation deposit exhibiting a chaotic mix of infill and anthropogenic debris. The debris is domestic in nature: pottery, ash, charcoal, bone and Type C aggregates. Of these aggregates several are composed of organic material and phytoliths embedded with faecal spherulites, indicating herbivore dung (Pl. 57f). In other Type C aggregates the organic material exhibits varying degrees of decomposition or desiccation, little or no silt and an absence of faecal spherulites, indicating possible fragments of human coprolite.⁵¹² The biogalleries indicate soil fauna activity and the welding of small aggregates suggests a reforming sediment by heavy reworking.⁵¹³

Section 14.3 Of the three units identified in Section 14.3, Unit 14.3/1 is similar to Section 14.2 with the unit exhibiting three significant differences, those being that the unit exhibits less disturbance. The blunt ended, elongated strands of organic material exhibit strong birefringence and there is a reduction in the total organic inclusions. Further, the lower boundary is clearly defined. The elongated organics indicate that once deposited the material was quickly buried, reducing breakage, while the clear boundary suggests a rapid infilling on a compacted surface.

Unit 14.3/2 is similar to 14.3/1 with several exceptions in regards of the quantity of organic material and anthropogenic inclusions. The inclusions within the deposit are sparse. However, the vegetal voids present an overall horizontal orientation, indicating minimal disturbance once deposited prior to decomposition.

In Unit 14.3/3 there is a sharp contrast to the overlying units, exhibiting a weakly developed blocky microstructure. The organic material is minimal, being mainly amorphous fine organics, and there is an absence of anthropogenic debris. The lack of organics and anthropogenic debris in conjunction with the compaction of the sediment suggests a non-cultural deposit of natural infill.

As the context of Profile 14 is the street adjacent to the wall of a structure, the sequence suggests a series of episodes that indicate various changes in activities and/or space use (see above, Features 112 and 116). The sediment of the latest section (14.1) exhibits many of the characteristics of a mud plaster mix. The vughs and vesicles are characteristic of pugging during plaster preparation. At the base of the unit the vegetal voids exhibit a general horizontal orientation, however above these vegetal voids the upper voids exhibit a sub-horizontal orientation, indicating plastering with a sweeping motion suggesting an installation. Subsequent mechanical compaction resulted in planar voids creating cracks.

Below this unit is a highly disturbed occupation deposit (Section 14.2), consisting of reworked sediment rich in cultural debris. Beneath this disturbance is a series of units (Section 14.3) that indicate rapid infilling with natural inputs and deposition of minimal quantities of cultural debris which frequently char-

⁵¹² Shillito et al. 2011a, Figure 4, Images C, E and F.

⁵¹³ Mermut and Jongerius 1980.

acterise occupation deposits. However, in the earliest deposit (Unit 14.3/3) there is an absence of cultural debris, indicating an aggrading surface.

Profile 16

Profile 16 consists of two deposits and was taken right next to Profile 14.

Section 16.1 exhibits a granular microstructure with occasional dense domains and generally horizontal vegetal voids. The coarse mineral component consists of moderately sorted randomly distributed medium quartz sand. The organic material includes horizontally oriented, elongated fragments of tissue residues ($\leq 5\text{mm}$) with moderately humified cell residues and amorphous fine material. Articulated and disarticulated phytoliths are occasionally embedded with faecal spherulites and one or two pieces of charcoal are present. The anthropogenic inclusions are sparse, being traces of bone, several Type A and Type C aggregates embedded with faecal spherules, all scattered in the groundmass.

Section 16.2 consists of a granular to vughy microstructure with dense domains exhibiting planar voids. The coarse mineral component is dominated by moderately sorted very fine quartz sand. Horizontally oriented, elongated stands of tissue residue ($\leq 1\text{mm}$) together with cell residues and amorphous organic material comprise the organic component. Traces of disarticulated phytoliths and silicified material (Pl. 57h) and occasional Type A aggregates dot the groundmass.

Profile 16: deposition and formation processes

Within the deposit several features were identified that indicate depositional and post-depositional alteration resulting from anthropogenic events. The similarities for Sections 16.1 and 16.2 indicate a rapid infilling with inclusions of anthropogenic debris, resulting in an occupation deposit. However, contrasts in microstructure, coarse mineral component and size of organic fragments provide indicators of difference in the post-depositional processes. In Section 16.1 the deposit is disturbed and mainly granular with a randomly sized and sorted coarse mineral component, mainly quartz sand, while Section 16.2 exhibits less disturbance, vughy domains and incipient planar voids with moderate sorting of very fine quartz sand. These contrasts in structure and quartz sand suggest the re-deposition of sediment towards the edge of the street against the wall (Feature 116). The size variation in elongated organic material, ($\leq 5\text{mm}$ and $\leq 1\text{mm}$) indicates a fragmentation of the organics and a probable re-deposition of the smaller fragments from the central area of the street to the area against the wall.

Overall, the variation in these two sections indicates that Profile 16 is an occupation deposit consisting of infilling with inclusions of anthropogenic debris. The size reduction in organics and the inclusion of very fine quartz sand at the edge of the street suggests a repetitive deposition while disruption near the centre of the street and re-deposition towards the wall results in smaller organic fragments and very fine quartz sand being transported likely by feet as people walked along the street. Furthermore, the inclusion of Type A aggregates (aggregates of surface material) and the Type C aggregates, mainly herbivore dung exhibiting various stages of decay (Pl. 57g) near the centre of the street (scattered in Section 16.1), suggest an ongoing disruption of a moderately compacted but weakly stable surface, effecting a mixing which results in disturbance.

Profile 17

Profile 17 consists of three sections and is the southernmost sample within the ‘wall street’.

Section 17.1 is a disrupted sediment exhibiting a complex microstructure of crumb to granular domains and large sub-angular blocky peds with reduced void space. The coarse mineral component consists of randomly distributed unsorted very fine to medium quartz sand. The organic material is limited but varied in type, being organ residues ($\leq 2\text{mm}$), traces of tissue and cell residues and amorphous fine material. Traces of articulated phytoliths are dotted in the groundmass. Anthropogenic inclusions consist of traces of bone, mud brick or plaster fragments and several abraded pottery sherds with traces of fragmented Type A aggregates rich in organic material all scattered in the groundmass.

Section 17.2 is a highly disturbed sediment with a crumb to granular microstructure. The coarse mineral component consists of randomly distributed unsorted fine to medium quartz sand. The organic material is limited to long strands of cell residues ($\leq 2.6\text{mm}$) and amorphous fine material as well as traces of disarticulated phytoliths. Anthropogenic inclusions are sparse, being traces of charcoal and several pockets of ash. Fragmented Type A aggregates rich in organic material are scattered in the groundmass.

Section 17.3 is also a highly disturbed sediment with a weakly separated granular microstructure with domains exhibiting a crumb structure. The coarse mineral component consists of randomly distributed unsorted very fine to medium quartz sand. Several biogalleries are clearly identifiable in the section. The organic material includes lenses of strand-like, strongly birefringent, horizontally oriented cells and tissue residues. Humified amorphous fine material and punctuations are randomly distributed throughout the section. The anthropogenic debris consists of two pottery sherds with different fabrics and traces of bone (fish?). Fragmented Type A aggregates embedded with organic material dot the groundmass.

Profile 17: deposition and formation processes

Within the deposit, which belongs to Feature 119 and is of clear Post-New Kingdom date, a number of features were identified that indicate depositional and post-depositional alterations resulting from anthropogenic episodes. The three deposits show varying degrees of disturbance with Sections 17.1 and 17.2 exhibiting extensive reworking. All three deposits include fragments of pottery of varying fabrics with the larger sherds in Section 17.1 being worn and abraded. Sections 17.2 and 17.3 include Type A organic-rich aggregates, some of which suggest fragmentation, indicating a disruption of weakly stable surfaces. The main contrasts are found in the partially disturbed Section 17.3 with the inclusion of horizontally oriented lenses of stranded organics and Type A aggregates.

These three deposits exhibit an ongoing cycle of deposition, disruption and reworking with Profiles 17.1 and 17.2 likely the result of the Ottoman/recent excavation in the area, while Section 17.3 retains some remnants of the original surface sediment and anthropogenic inclusions.

Summary and conclusion

As the scale of sampling within the ‘wall street’ at SAV1 West was restricted and stratigraphic control was partly incomplete, the range of inferences allowed by the sedimentary evidence is limited. However, two inter-mixed cycles of continuous natural and cultural deposition, accumulation and post-depositional alteration formed weakly stable surfaces in the street. Such surfaces are comparable with non-constructed floors frequently occurring in streets and open spaces at Amara West.⁵¹⁴ The post-depositional cycle of the ‘wall street’ samples from SAV1 West included mineral weathering, occasional dissolution and reprecipitation of carbonates, and humification or desiccation of organic matter in the form of plant material.

The human impact included the large-scale Ottoman excavation that erased much of the depositional history in several areas of the street while the less disturbed deposits present a different type of impact: the moderate compaction of exposed surfaces by trampling and the re-deposition of debris in the kick zone. The debris is domestic in nature including potential crop processing waste, fuel debris, such as charcoal and ash, with pottery sherds, fragments of herbivore dung and possible omnivore coprolites marking incidental deposition.⁵¹⁵ The quantities and range indicate casual discard with much of the organic debris being likely airborne and the balance being accidentally deposited, carried on the soles of feet or sandals of the 18th Dynasty occupants.⁵¹⁶ All in all, the ‘wall street’ at SAV1 West experienced a number of uses and changes of its use as space within the New Kingdom town of Sai.

⁵¹⁴ See Dalton 2017, 360.

⁵¹⁵ Typical debris for informal surfaces, see Dalton 2017, 383.

⁵¹⁶ Bare adult and infant footprints at Amara West testify that within houses, shoes or sandals were also taken off; see Dalton 2017, 361. Within streets like the ‘wall street’ at SAV1 West footwear may have been worn more often, but this remains hypothetical.

3.7.3 Results from other 2015 samples from SAV1 West⁵¹⁷

The three samples taken at SAV1 West outside of the ‘wall street’ in 2015 (Fig. 49) were processed by Taylor.⁵¹⁸ The profiles are described here sequentially from the northernmost sampling location, Profile 18, to Profile 13 in the south. All samples are associated with the 18th Dynasty use of SAV1 West and the domestic architecture from the inner part of the town east of the ‘wall street’.

Profile 18

This profile was sampled in two blocks (Profile 18.1 and 18.2), but only Profile 18.1 was processed. Sample Profile 18.1 was collected from Square 1, SU 707 within Feature 116, thus from the inner, southwestern corner of Structure C. The excavator had described it as “mainly thin deposits with the uppermost deposit very thick”. The sample was described to have “sequences of deposits with uppermost thick grey-white layer, then alternating thicker/thinner layers”. The Munsell colour for these grey-white layers is 7.5YR4/2 and the texture is silt sand clay. The profile was expected to show ash/charcoal. The charcoal was sampled from Profile 18 by Frits Heinrich as botanical sample (CH4, see Chapter 5.1).

The thin section exhibits channel and spongy microstructures. It is a predominantly fine sediment with a c/f50µm ratio of 20:80. It shows evidence for sedimentation. The finer organic rich banded fabrics are overlaid with sand lenses. It has abundant pseudomorphs within the matrix, although less porous (20–25%) than the last sample. As well as organic fines there is abundant fine charcoal. There is evidence for physical and biological turbation as there are both fabric pedofeatures of disrupted organic rich crust and channel infillings of sand. The organic component is mainly charcoal, roots and tissue fragments and fine material which is highly degraded. Mineral grains are mostly quartz with few rock fragments including limestones. There are small bone fragments which are highly altered. The fabric has pedofeatures of re-precipitated CaCO₃ stained with iron. Apart from in the micritic fabrics, birefringence is undifferentiated. There are also fabric pedofeatures within zones of fine material and with crack microstructure.

Interpretation of Profile 18.1

The channel and spongy microstructures have developed through physical and biological turbation.⁵¹⁹ The characteristic features of this horizon from SU 707 as part of Feature 116 are extensive soil fauna activity but not to such an extent that bioturbation destroys evidence for sedimentation expressed as horizontally banded sedimentary facies.⁵²⁰ There has been the wholesale incorporation of organic matter into this horizon and it has experienced pronounced alteration due to chemical and biological diagenesis.⁵²¹ The undifferentiated b-fabrics indicate how much organic matter there is in this archaeological context.⁵²² There is evidence for the addition of well-sorted sand mineral grains with a few rock fragments including limestones. These have either blown in as aeolian additions or have been incorporated through the breakdown of alluvial sediments. There is ample evidence for anthropogenic residues. The textural pedofeatures of re-crystallised sparitic CaCO₃ within carbonate nodules (Pl. 58a) are suggestive of the amount of ash derived from the burning of wood. That at last some of this sediment is derived from weather building material which in itself has come from an alluvial context is suggestive of the highly organic and well-sorted groundmass (Pl. 58b). The crack microstructures have developed because of the large quantity of riverine clays present in such material.⁵²³ There are many bone fragments

⁵¹⁷ Based on the report by Sean Taylor and Sayantani Neogi; see Neogi and Taylor 2016b.

⁵¹⁸ As team member of the AcrossBorders project, at the McBurney Geoarchaeological Laboratory; see above, Chapter 3.7.2, also in terms of methodology.

⁵¹⁹ Stoops et al. 2010.

⁵²⁰ Brewer 1972.

⁵²¹ Babel 1975.

⁵²² Stoops 2007.

⁵²³ Smith and Rogers 1999.

and a high proportion of charcoal (Pl. 58c). These and the presence of pseudomorphs are characteristic of midden type deposits where the main input are domestic organic residues (Pl. 58d).⁵²⁴

Taken from the stratigraphic remains within the inner corner of Feature 116, an interpretation of the upper sample, Profile 18.1, as midden deposit corresponds well to the archaeological context. The unprocessed lower Profile 18.2 would have included floor levels within Feature 116.

Profile 19

This profile was sampled in two blocks (Profile 19.1 and 19.2). Sample Profile 19.1 was collected from SQ1S, SU 716, associated with deposits below Feature 118. During excavation it was described as a series of deposits underlying the mud brick Wall Feature 118 – thus, the deposit predates Feature 118 and no associated mud brick structure or wall was found. The sample was labelled to have “silty sand clay deposits with ashy pockets”. The Munsell colour for this is 7.5YR5/3 brown and the texture is silt sand clay. It was expected to show ash/charcoal.

Sample Profile 19.1 is very similar in properties to Profile 18.1. It is more heterogenous, with large carbonate rock fragments (<1cm). This thin section shows clear evidence for sedimentation and has aggregates of mud brick (<500µm) within the groundmass. Textural pedofeatures of striated b-fabrics are associated with these aggregates. The microstructure is complex, comprising intergrain-microaggregate and platy microstructure with compound packing voids being the dominant void. In common with the other thin sections, there is abundant organic matter (10–300µm) of humified plant tissue, bone (250–1500µm) and charcoal (250–500µm). The most common pedofeatures are CaCO₃ fabric pedofeatures exhibiting crystallitic bi-fabrics, iron nodules (<300µm), passage features and infillings. The c/f50µm is 20:80. Mineral grains are mostly quartz.

Interpretation of Profile 19.1

In many respects, the interpretation of this thin section corresponds to the one of other samples from SAV1 West. There is plenty of evidence for residues of a domestic nature.⁵²⁵ This can be exemplified by the many large fragments of weathered bone (Pl. 59a and Pl. 59b). The micritic fabrics have developed as a combination of the diagenesis of wood ash⁵²⁶ and bone⁵²⁷ but also carbonate rocks.⁵²⁸ The localised platy microstructures are indicative of alluvial material that has entered this sedimentary context through allochthonous aggregates of mud brick.⁵²⁹ There is stratigraphy which is preserved with horizontal bands of organic rich micro-facies and exhibiting a parallel referred distribution pattern (Pl. 59c). Within this aggrading anthropogenic matrix are to be found large fragments of charcoal (Pl. 59d), proxies for domestic refuse.⁵³⁰

All in all, the thin section analysis corresponds to the original archaeological interpretation: Profile 19.1 represents accumulations of domestic refuse on which Wall Feature 118 was built. Similar building techniques can also be observed at SAV1 North.⁵³¹ Since Feature 118 is probably of late 18th Dynasty or even Ramesside date, Profile 19.1 is likely to represent remains of the main occupation phase of SAV1 West (Phase B, associated with the use and discard of Structure A).

Sample Profile 19.2 was collected from SQ1S, SU 715 including parts of Feature 120. It is thus clearly from an earlier context than Profile 19.1 and should attest the early phase of Structure A in the early/mid

⁵²⁴ Ostericher 2015.

⁵²⁵ Milek and Roberts 2013.

⁵²⁶ Karkanas et al. 2004; Karkanas et al. 2007.

⁵²⁷ Hedges 2002.

⁵²⁸ Bathurst 1975.

⁵²⁹ French 1984.

⁵³⁰ Simpson et al. 2006.

⁵³¹ Cf. Doyen 2017, 67.

18th Dynasty. The Munsell colour for the sample is 7.5YR4/3 brown and the texture is silt sand clay. It was expected to show ash/charcoal. Although the structure seemed similar to Profile 19.1, it was hoped that it showed differences because of the distinct phasing between the samples.

Indeed, this thin section has considerably different properties to the others. It is apedal with a pronounced channel and platy microstructure, and much less porous (20%). The main voids are channels (100–200µm), chambers (100–200µm), planes (50–100µm) and few vughs. There are coatings and hypo-coatings of CaCO₃ on the channels. The fine fabric is almost entirely composed of ‘flakes’ of humified organic matter (2–100µm) and extremely well-sorted quartz mineral grains. The fine fabric of the groundmass is undifferentiated. It is very brown and clearly is derived from organic matter and fragments of charcoal. There is CaCO₃ within the matrix. Common fabric pedofeatures are accumulations of CaCO₃, associated with strong crystallitic b-fabric and are distributed throughout the groundmass.

Interpretation of Profile 19.2

This thin section collected from SU 715 and associated with Feature 120 exhibits pronounced characteristics of a sedimentary environment. There are extremely well-sorted minerals, silt-sized and fine sand and, together with the humified organic matter, are completely alluvial in nature. The bulk density and sorting indicate that this is derived from river sediments (Pl. 60).⁵³² As too, is the platy microstructure.

All in all, Profile 19.2 can be interpreted as supporting the archaeological phasing of Structure A as the oldest building at SAV1 West. Other than Wall Feature 118, Wall Feature 120 as northern perimeter of Structure A sits on alluvial sediments and thus belongs to the earliest building phase.

Profile 13

Sample Profile 13 was collected from Feature 122 in Square 1S and comprised the SUs 681, 682 (ashy layer), and 683. Feature 122 is located within the presumed courtyard of Structure A (see Chapter 3.3.2) and consists of a partially preserved series of deposits which can be safely dated to the 18th Dynasty and the early building phase at SAV1 West. The Munsell colour for different layers of Profile 13 were described as Layer 1 7.5YR5/3, Layer 2 7.5YR4/1 and Layer 3 7.5YR5/3; all of these layers are of “silt-sand”. The sample was expected to include ash and charcoal, which was sampled from SU 682 by Heinrich as botanical sample (CH3, see Chapter 5.1).

This thin section can be characterised as very porous (50%) and very sandy. There is abundant charcoal, bone fragments and humified organic matter (300–500µm). Many of the larger fragments of plant tissues are well-preserved but the major portion of the organic fraction is highly degraded and humified fines (2–50µm). Many of these organic residues are horizontally bedded, elongated ‘fibres’ (<250µm). The groundmass has a high proportion of organics and the dominant pedofeature are textural, most notably passage features. Within the micromass are fragments of crusts which are composed of very fine organics and to a lesser extent fine silt. Many of these sedimentary crusts appear as stacked horizontal dark bands, because of the high volume of micro-charcoal charcoal and organics with their matrix. These bands commonly alternate with sand lenses. The sand is medium, fine and silt-sized (10–200µm) and relatively well-sorted.

The thin section exhibits an apedal fabric and the structure is defined as intergrain-microaggregate microstructure. The vast majority of voids are compound packing voids. The *c/f*50µm ratio is 30:70. There are occasional rock fragments which include quartz, gravels, limestones and mudstones.

Interpretation of Profile 13

This thin section (Pl. 61) is predominantly biologically degraded and homogenised organics that have incorporated windblown material.⁵³³ It has a complex microstructure. Voids are predominantly planes,

⁵³² Miall 2014.

⁵³³ Muhs 2013.

vughs and compound packing voids. Many of the plant tissues are well-preserved within a porous organic groundmass and are almost certainly domestic residues accumulated within archaeological deposits. The horizontally bedded organic fragments and crusts of the in wash of windblown sand and silts and water are notable. The fine component is silt-sized mineral grains, fragmented organic matter and clay-sized organic residues. Within a porous organic groundmass are well-preserved lignin-rich plant tissues. Soil fauna are the prime movers in the breakdown of organic matter⁵³⁴ and have developed passage features in the sample. Passage features with their characteristic crescent-like pattern mark the movement of these animals through the soil.⁵³⁵ Also, the loose continuous and discontinuous infillings of groundmass material which fill many of the channels are indicative of the activities of soil animals. Clusters of spheroidal and ellipsoidal excrements are located in channels, adjacent to humified and iron replaced plant tissue. The activities of these soil fauna, however, are insufficient to obliterate evidence for sedimentation.⁵³⁶ This implies that the sedimentation progressed rather quickly, preserving the stratigraphy.

All in all, Profile 13 corresponds to the archaeological interpretation of Feature 120 as remains of domestic deposits within Structure A, presumably covering several phases of use and being of typical occupational character.

3.7.4 Results from 2015 samples from SAV1 East⁵³⁷

Four samples were collected at SAV1 East in 2015 and processed by Taylor (Profiles 21, 22, 23 and 24) (Fig. 50).⁵³⁸ They are presented here according to their location in Square 4 from north to south (Profiles 21, 22, 23) and in Square 4A (Profile 24).

Profile 21

Sample Profile 21 was collected from Square 4 of SAV1E above the pavement Feature 47 and associated with Feature 46. It was interpreted as cultural deposit/debris under a wall dating to the 18th Dynasty. The context is a thin deposit of sand silt clay sediment overlying a sandy silt pebble deposit with a Munsell Colour of 7.5YR3/3 and the texture is sand silt.

The thin section generally has a fine, compact composition and appears homogeneous without magnification. It has a porphyric related distribution. However, under magnification, the microstructure is complex, with zones being spongy, platy and channel microstructures. There are sharp boundaries between horizontally bedded microfacies. The voids are channels (70–700µm), chambers (<600µm), planes (100–200µm) and vughs and there are many compound and complex packing voids. It is moderately porous (20–50%). The micromass comprises very fine material of brown fines which are organic residues. There are abundant horizontally bedded pseudomorphs which have residual lignified organic matter remaining in the voids (50–70µm). There are fragments of charcoal and similar material that may be alternatively humified organics together with rounded aggregates stained with a similar organic pigment. The c/f50µm ratio is 70:30.

The dominant characteristic of the thin section is that of organic fine material comprising clay and silt-sized humified fragments (50–80µm). There are larger root fragments often associated with channels (250µm) and pseudomorphs (50–70µm). In addition, there are abundant well-sorted mineral grains of silt and sand-sized particles of quartz (10–130µm). These are all angular in shape. There are crystalline pedofeatures of CaCO₃ in the form of nodules with superimposition of iron compounds (2000–2500µm). Many of the rock fragments have clay-enriched fabrics, such as mudstones, which give the

⁵³⁴ Darwin 1881.

⁵³⁵ Gerasimova and Lebedeva-Verba 2010.

⁵³⁶ Stein 1983.

⁵³⁷ Based on the report by Sean Taylor and Sayantani Neogi; see Neogi and Taylor 2015.

⁵³⁸ For the methodology, see above, Chapter 3.7.2.

impression of being textural pedofeatures. Fabric pedofeatures are iron accumulations (1000–1500 μm). The micromass is humified brown with undifferentiated b-fabric.

Interpretation of Profile 21

This thin section (Pl. 62) shows clear sedimentation of alluvial and predominantly organic material with anthropogenic components such as ash and charcoal. This is consistent with the field report suggesting that this was a surface deposit of debris, located under a wall dating to the 18th Dynasty. The groundmass is generally compact with abundant CaCO₃, almost certainly derived from the input of ash as a result of domestic activities. Many of the ashy fabrics are stained with humic compound derived from the breakdown of organic matter.

The thin section shows sharp boundaries between horizontally bedded microfacies. Some of these, however, have been affected by post depositional bioturbation through the action of flora and fauna. This has led to the development of complex microstructures reflecting different genetic pathways of the soil properties. The localised spongy microstructures are characteristic of these processes. There are also horizontally bedded pseudo-morphs representing completely decayed organic matter. A component of the organic matter has been transformed into humic compounds which have been able to move within the sediment, ultimately coalescing into concentrations known as redoximorphic nodules. Despite the dry conditions of Sudan, moist hydrological conditions must pertain for these processes to take place. The CaCO₃ has similarly been affected by post-depositional processes controlled ultimately by groundwater and forming fabric pedofeatures comprising accumulation of calcium carbonate derived from wood ash often stained with humic compounds.

The variations with the fabric are usually a function of sedimentary and post-depositional processes. There are relatively dense zones, all with horizontally bedded pseudo-morphs. And yet there is a great variation with contrasting fabrics of highly porous fabrics comprising humified and fragmented organic plant tissues with pores consisting of complex packing voids. These are yet again evidence for the persistent action of soil fauna adapted to these predominantly dry conditions. Microbes have been responsible for the total destruction of organic matter and its transformation to undifferentiated brown amorphous compounds. Bioturbation processes have not completely erased evidence for the sedimentary nature of some of the fabrics. The evidence for well-sorted rounded quartz grains is characteristic of alluvial environments, but they have subsequently been subject to anthropogenic and diagenetic transformations. There is the persistent presence of larger rock clasts, most notably mudstones which also derive from a fluvial origin.

Profile 22

Sample Profile 22 comes from the uppermost deposit underlying an 18th Dynasty wall located in Square 4 (Feature 46). The context is silt sand, loose and soft. The Munsell Colour is 7.5YR 3/1 and the texture is silt sand with a few pebbles.

The thin section exhibits a heterogeneous fabric. It has sedimentary properties. The lower part of the thin section expresses distinct sedimentation with light and dark horizontally bedded micro-facies. The colour difference between these is due to the degree of organic content and humic pigmentation. Near the top there are large aggregates (1500–2500 μm), rounded and darker in colour (more organic in nature) within a lighter structure.

The overall microstructure is complex, comprising platy and channel microstructures. It is porous (40%) with a heterogeneous assemblage of abundant sand and fine silts, mainly quartz (10–100 μm) but other mineral species too. Voids are mainly chambers (<500 μm). The c/f50 μm ratio is 20:80. The b-fabric is undifferentiated and crystallitic. There are very large accumulations of CaCO₃ within the organic rich sediments as well as abundant wood charcoals (2000–3000 μm) exhibiting well-preserved transverse sections with well-preserved internal cellular structures (100 μm). A spatial relationship exists between the CaCO₃ rich fabrics and the location of the charcoals. Abundant small bone fragments (<100 μm) are distributed throughout the groundmass. In addition to the large quantities of melanised plant tissue (<600 μm)

comprising a range of sizes, there are pseudomorphs indicating the transformation of much of the organic component to humic compounds seen in the brown fine fraction of the micromass. Fragments of residual plant tissue are present in many of the pseudomorphs (100–150 μm). These are often genetically related to the amorphous and fabric pedofeatures of iron concentrations within the groundmass.

Interpretation of Profile 22

The heterogeneous fabric and sedimentary properties indicate that this thin section (Pl. 63) represents accumulations of anthropogenic and natural residues in Square 4. The large aggregates are weathered mud brick that have been fragmented and transported into this sedimentary environment. As such, they may be safely regarded as allochthonous components of the matrix. The fabrics of these aggregates are composed of highly humified and fine organic matter which has been obtained from alluvial deposits of the Nile. Their platy microstructure and planar voids are defining characteristics of alluvium. In addition, the mineral components of quartz grains and humified fragmented organic matter are well-sorted providing further evidence of their alluvial origin. Within the lower portion of the thin section, horizontally bedded micro-facies indicate that sedimentation has been the dominant process. The colour difference between these is due to the degree of organic content and humic pigmentation which changes over time. The contribution of anthropogenic agency is clearly to be seen. A heterogeneous assemblage of sand and fine silts and rounded aggregates within an organic-rich environment is indicative of human residues. The organic component, which has been subject to diagenetic biological decay, accounts for the undifferentiated b-fabrics when observed in XPL. Since these are also crystallitic, they reflect the very large accumulations of CaCO_3 within the organic-rich sediments due to the input of wood ash.⁵³⁹ Genetically related to these properties are the abundant wood charcoals. They are clearly derived from trees as they exhibit well-preserved transverse sections, maybe from the most common tree on Sai (see Chapter 5.1), the Nile acacia.

The platy and channel microstructures reflect not only sedimentary processes but post-depositional influence of biological processes as well. The large quantities of melanised plant tissue and pseudomorphs are suggestive of the transformation of much of the organic component to humic compounds. The amorphous and fabric pedofeatures of iron concentrations within the groundmass reflect the mobility of organo-mineral components, most notably iron, when the hydrological conditions are suitable. The fine humic compounds associated with the undifferentiated brown matrix are indicative of the effect of microbial decay. In addition, biological activity is indicated by the platy structures commonly associated with passage features attributed to soil fauna. The organic matter has, however, not entirely been rendered to humic compounds. There are abundant well-preserved tissue fragments, which have been resistant to decay because of their lignin-rich cells. The porous fabric comprising mainly humified organic matter and sub-angular mineral grains associated with aeolian processes of sedimentation reflect post-depositional processes relating to bioturbation. There are many small bone fragments distributed throughout the groundmass interpreted by the authors of the input of domestic residues. The organic and ashy properties within the matrix are suggestive of post-depositional decay and diagenesis. The close spatial relationship between the CaCO_3 -rich fabrics and charcoals and the dominantly crystallitic b-fabric indicates that this thin section has a high degree of calcium carbonate derived from wood ash.

Profile 23

Sample Profile 23 collected from Square 4 was taken from Pavement Feature 50, within an anthropogenic debris underlying the preserved end of Wall Feature 49. The context is sand silt with pebbles. The Munsell Colour is 7.5YR4/2 and the texture is sand silt with pebbles. The thin section is predominantly fine and organic. The latter is mainly humified plant tissue (5–1000 μm) which pervades the whole thin section. It has channel microstructure and, in some places, spongy microstructure.

⁵³⁹ Canti 2003.

The matrix can be characterised with components comprising charcoal (50–100µm), pottery (250–500µm) and rounded and sub-rounded aggregates of organic stained fabric (100–300µm) and gravels. The potsherds have been tempered with quartz, mica and organic material (typical Nile silt ware). The fine fabric comprises highly birefringent b-fabric associated with 2:1 sheet silicate clays. The coarse component of these aggregates is poorly sorted quartz mineral grains (10–200µm) and large amounts of mica. As with the previous sample (Profile 22), there is ample evidence for sedimentation, although the mineral grains are rather less sorted, ranging from fine silts to medium sands. The entire thin section is quite porous (30%). The brown micromass has a speckled birefringence when observed in XPL. The c/f50µm ratio is 20:80. Amorphous pedofeatures of dendritic iron oxide nodules are found throughout the matrix.

Interpretation of Profile 23

The predominantly fine and organic nature of this sediment above Floor Feature 50 reflects the origin for the material which is Nile alluvial muds.⁵⁴⁰ The highly birefringent b-fabric is due to the 2:1 sheet silicate clays that are present. The coarse component is poorly sorted quartz mineral grains (Pl. 64). This has entered the system through the weathering and transformation of manufactured mud brick to sediments with properties not that different from the locations where this material was procured. This material can be characterised as a dense fabric of poorly sorted mineral grains and highly humified organic matter. It has a darker colour and relatively high organic content consistent with an alluvium.⁵⁴¹ The dark brown colour of the structure reflects the accumulation of humic compounds, indicative of melanisation, as are the organic punctuations observed throughout the groundmass.⁵⁴² Bioturbation has been a dominant process⁵⁴³ which has in places produced a porous spongy microstructure. In places there is evidence of microstratigraphy due to the in wash of material, but in general biological processes have obscured this evidence.

There is plenty of anthropogenic material that has been incorporated within these archaeological contexts. Domestic refuse is reflected by the presence of charcoal, pottery and rounded and sub-rounded aggregates of mud brick. The potsherds and possibly the mud brick had been tempered with quartz, mica and organic matter which have been subject to biological decay. There is a high proportion of wood ash which is reflected in the micrite crystals observed through the matrix. Micrite is a form of calcium carbonate which has been re-precipitated through particular hydrological soil conditions. These latter conditions have been the controlling factor in the development of the amorphous pedofeatures of dendritic iron oxide nodules which are found throughout the matrix. It can be speculated that when soil moisture was sufficient, plant tissues could be rendered into fine organic residues by the resident microbial communities and larger soil fauna would have been able to decrease the bulk density by creating complex packing voids.

Profile 24

Sample Profile 24, taken from Square 4A from the top of Floor Feature 56, is sedimentary in nature with a channel microstructure. It is a heterogeneous fabric consisting of organic matter ranging in preservation from tissue fragments (<500µm) to highly melanised organic residues (<10µm) associated with brown colours. The coarse fraction comprises poorly sorted medium sands and there are large potsherds (2–20mm) and sub-rounded aggregates of mud brick (100–250µm). The entire fabric is a heterogeneous mixture of fine sand-sized mineral grains to larger gravels (predominant mineral), some mica and gravel-sized limestone clasts. The c/f50µm ratio is 60:40 and although this is a courser matrix it is quite porous, with pores mainly channels, chambers (400–600µm) and planes. Towards the bottom of the thin section there are large fragments of humified plant tissues. Adjacent to these are abundant pseudomorphs. The fine fraction is a fine organic iron-stained fabric and appears as a brown clay. The CaCO₃ accumulations

⁵⁴⁰ Hennekam et al. 2014.

⁵⁴¹ Buol et al. 2011.

⁵⁴² Schaetzl and Anderson 2005.

⁵⁴³ Davidson 2002; Gabet et al. 2003; Lavelle et al. 2006; Wilkinson et al. 2009.

derived from ash give this thin section a weakly crystallitic b-fabric.⁵⁴⁴ The dominant pedofeatures are the amorphous dendritic iron nodules (1000µm).

Interpretation of Profile 24

This is a heterogeneous fabric consisting of organic matter ranging in preservation from tissue fragments to highly melanised organic residues associated with brown colours. The thin section (Pl. 65) has sedimentary properties through the in wash of allochthonous mineral and organic materials. The channel microstructure has developed as a result of the complete decay of organic tissues with the creation of pseudomorphic fabrics.⁵⁴⁵ Chambers have developed as a result of soil fauna and the planes are associated with the cracks that develop in clay rich sediments as a result of shrinking and swelling due to hydrological conditions. The heterogeneous-sized organic matter has differential preservation due to the variation of the lignin content and water content. That this sediment has been affected by water is confirmed by the presence of dendritic iron nodules within a fabric derived from alluvium.⁵⁴⁶ There is a significant anthropogenic component. This is expressed micromorphologically with the heterogeneous fabric of calcium carbonate mixed with domestic residues. There are large potsherds, suggestive of rubbish disposal and the rounded aggregates of mud brick associated with fine organics show the process of brick disintegration due to weathering.⁵⁴⁷ This material is virtually indistinguishable from alluvial deposits.

3.7.5 The 2016 sampling season: introduction⁵⁴⁸

A total of twenty block samples (soil/sediment) were collected during the course of the geoarchaeological survey in the New Kingdom town (Fig. 51). Intact soil blocks were extracted from the archaeological deposits and wrapped with cling-film in order to maintain the internal relationships between all components. In addition, two plaster samples from Tomb 26 were analysed (see Tab. 13; see Chapter 4.6).

Within the town area, sampling focused on SAV1 East in 2016 (Fig. 52). Some of the samples were taken to better understand the complex stratigraphy of the New Kingdom settlement. Others were taken to investigate the precise nature of the deposit, e.g. in Feature 15. A priority was to characterise the anthropogenic sediments in order to comprehend the use of the structures during the New Kingdom.

3.7.5.1 Results from thin section analysis

The following results based on thin section analysis of the 2016 samples are of preliminary character.⁵⁴⁹ The only sample from SAV1 West is described first; the samples from SAV1 East follow according to contexts.

SAV1 West

Only one micromorphological sample was taken in 2016 at SAV1 West (Fig. 53). Sample 63 (SM 04) was collected in Square 1S from the east-west lane just north of Feature 123 (Structure F). Under the petrographic microscope (Pl. 66), it compares to samples from SAV1 East, especially SM 03, which is a pavement below the schist floor. The sample represents a highly organic sediment with aggregates and mud bricks with stone fragments and quartzite rock. There are bone fragments and abundant phytoliths which are horizontally orientated. Humified plant tissues are present as are rounded mudstone fragments. A lot of bioturbation is also reflected in the pelitic microstructure. All in all, the sample compares

⁵⁴⁴ Durand et al. 2010.

⁵⁴⁵ Stoops et al. 2010.

⁵⁴⁶ Vepraskas and Lindbo 2012.

⁵⁴⁷ Adderley et al. 2010.

⁵⁴⁸ Based on the report by Sean Taylor; see Neogi and Taylor 2016a; Neogi and Taylor 2016b.

⁵⁴⁹ Based on some notes by Sean Taylor.

quite well with other samples from SAV1 West within the ‘wall street’, especially Profiles 12 and 14 (see above, Chapter 3.7.2). Thus, Sample 63 confirms that similar deposits accumulated on the east-west corridor like on the street along the enclosure wall, testifying to the occupational use and domestic refuse on top of informal street surfaces at SAV1 West.

SAV1 East

19 block samples were collected from clear 18th Dynasty contexts at SAV1 East in 2016 (Fig. 52). All of the samples exhibit strong organic components as will be outlined in the following. Three samples were taken below/from schist pavements (SM 01, SM 03 and SM 08). One sample was taken from a mud brick wall and adjacent floor (SM 09). The area with the baking plate was also sampled (SM 02). Connected with this sample are profiles taken in the nearby storage pit, Feature 76 (SM 06 and SM 10). The similar storage pit Feature 75 was also sampled (SM 11) as was the small storage bin Feature 14 (SM 12). Finally, the deposit within the large cellar Feature 15 was also investigated by means of a block sample.

Schist pavement foundations/deposits

Sample SM 01 from Square 4C, Feature 66 below Feature 73, comprises three thin sections. Thin section 56 (SM 01 [A], Pl. 67) is very fine material and organic in nature, including especially humified plant tissue. The structure is vughy, iron oxide nodules are present as well as mud bricks pseudomorphs. It is a highly organic sample which is sedimentary in nature.

Sample No	Micromorph number	Type	Location	Northing	Easting
56	SM 01 (A)	Soil	SAV1 East, SQ4C	20°44.243′	20°44.243′
57	SM 01 (B)	Soil	SAV1 East, SQ4C	20°44.243′	20°44.243′
58	SM 01 (C)	Soil	SAV1 East, SQ4C	20°44.243′	20°44.243′
59	SM 02 (A)	Soil	SAV1 East, SQ4C	20°44.245′	30°19.904′
60	SM 02 (B)	Soil	SAV1 East, SQ4C	20°44.245′	30°19.904′
61	SM 03 (A)	Soil	SAV1 East, SQ4B1	20°44.248′	30°19.903′
62	SM 03 (B)	Soil	SAV1 East, SQ4B1	20°44.248′	30°19.903′
63	SM 04	Soil	SAV1 West, SQ1 South	20°44.244′	30°19.868′
64	SM 05	Mortar	Southern wall, south of SAF5, south of M1, west of southern gate	20°44.191′	30°19.912′
65	SM 06	Soil	SAV1 East, SQ4C, Feature 76		
66	SM 07 (A)	Soil	SAV1 East, Feature 15		
67	SM 07 (B)	Soil	SAV1 East, Feature 15		
68	SM 07 (C)	Soil	SAV1 East, Feature 15		
69	SM 08	Soil	SAV1 East, SQ4B1, Feature 69	20°44.249′	30°19.902′
70	SM 09	Soil	SAV1 East, SQ4C, Feature 64/63	20°44.244′	30°19.903′
71	SM 10	Soil	SAV1 East, SQ4C, Feature 76	20°44.244′	30°19.904′
72	SM 11	Soil	SAV1 East, SQ4, Feature 75	20°44.246′	30°19.907′
73	SM 12	Soil	SAV1 East, SQ2, Feature 14	20°44.246′	30°19.917′
74	SM 13	Mortar	Tomb 26, Feature 2 (SU 104)		
75	SM 14	Mortar	Tomb 26, Feature 2 (SU 105)		
76	SM 15	Soil	From palaeo Nile alluvium (30–40cm)	20°44.173′	30°19.555′
77	SM 16	Soil	From palaeo Nile alluvium (70–80cm)	20°44.173′	30°19.555′

Tab. 13 Micromorphological samples from the 2016 season analysed with thin section

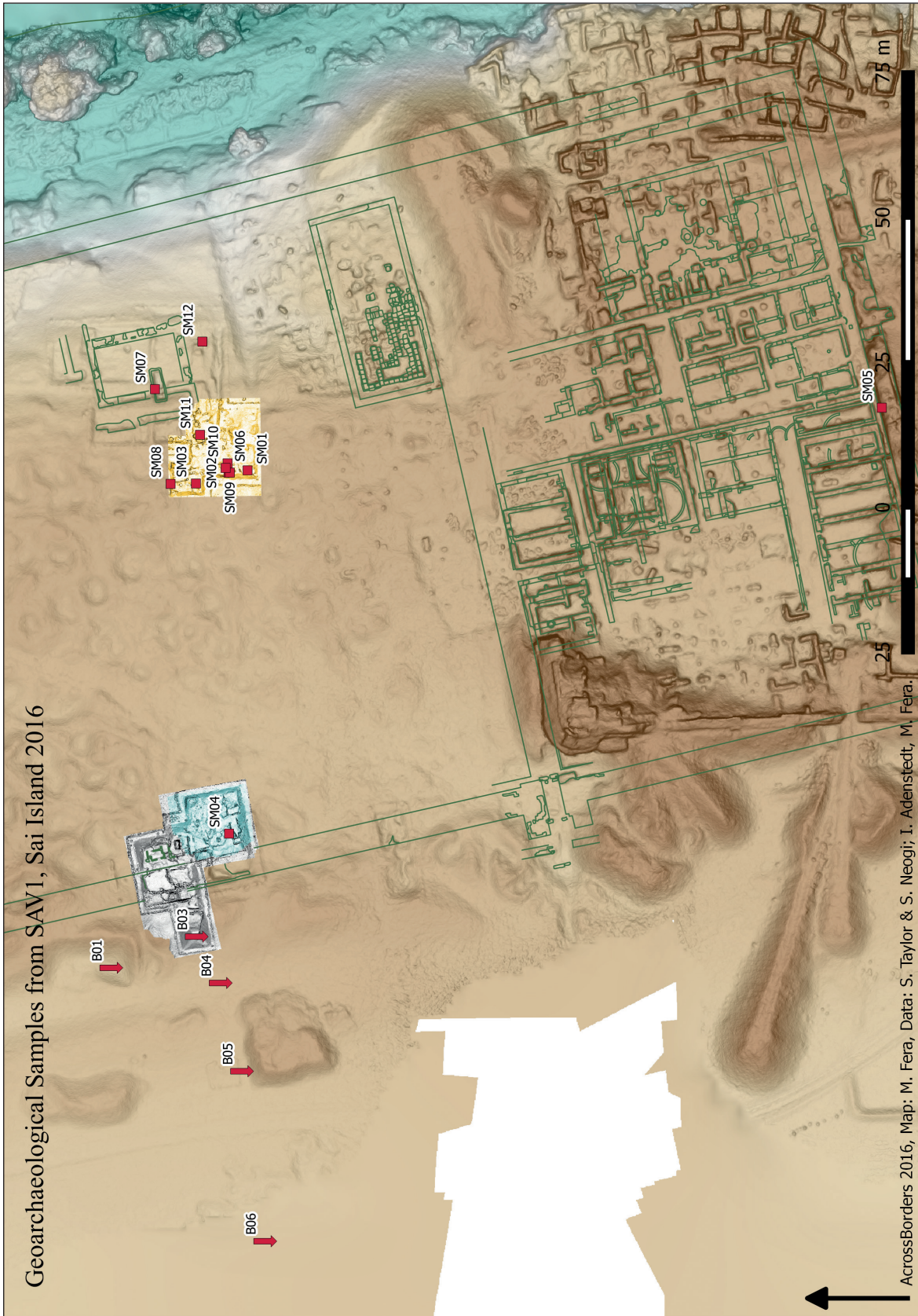


Fig. 51 Overview of locations of geoarchaeological sampling at the New Kingdom town, 2016 season

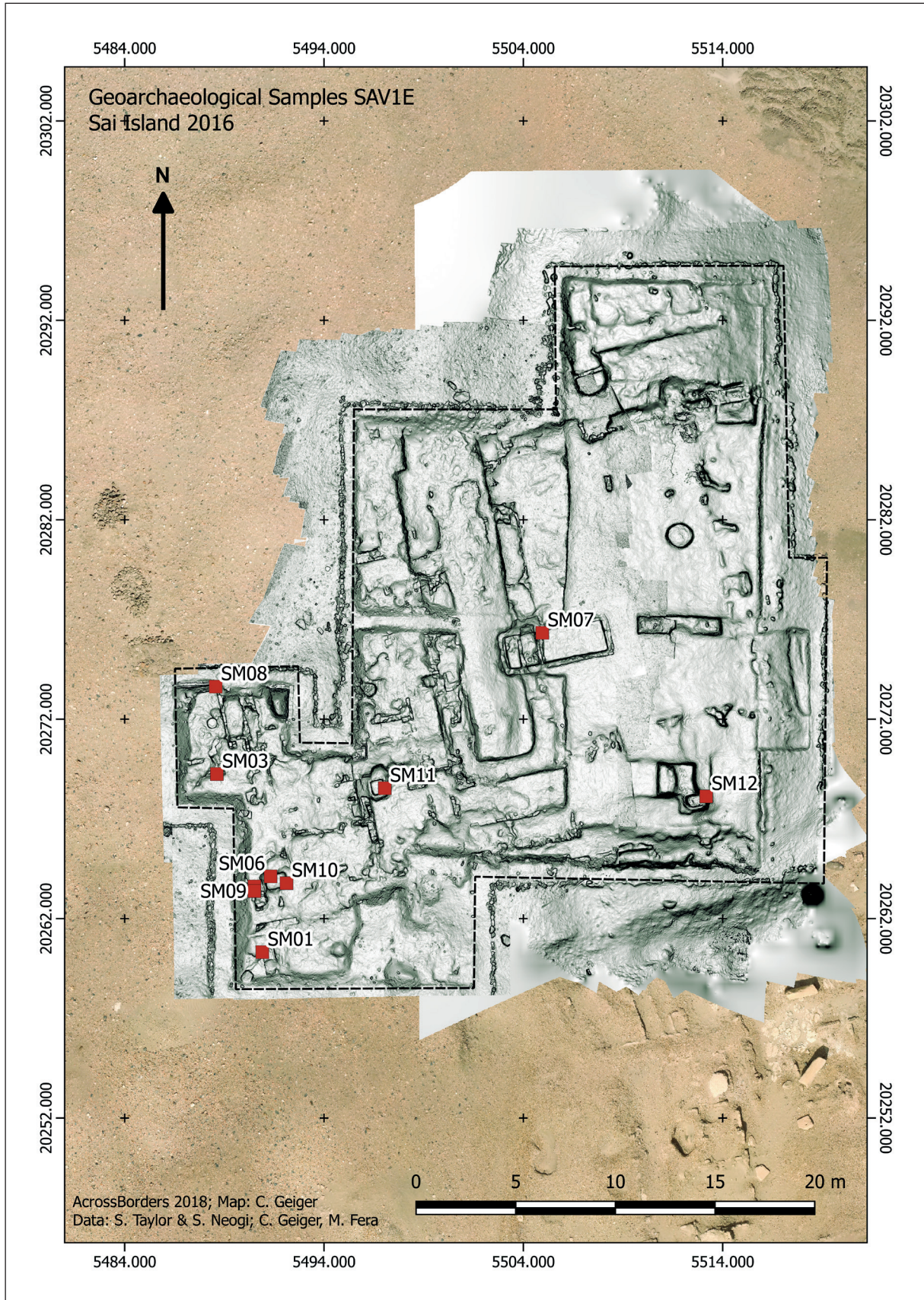


Fig. 52 Locations of micromorphological sampling at SAV1 East, 2016 season

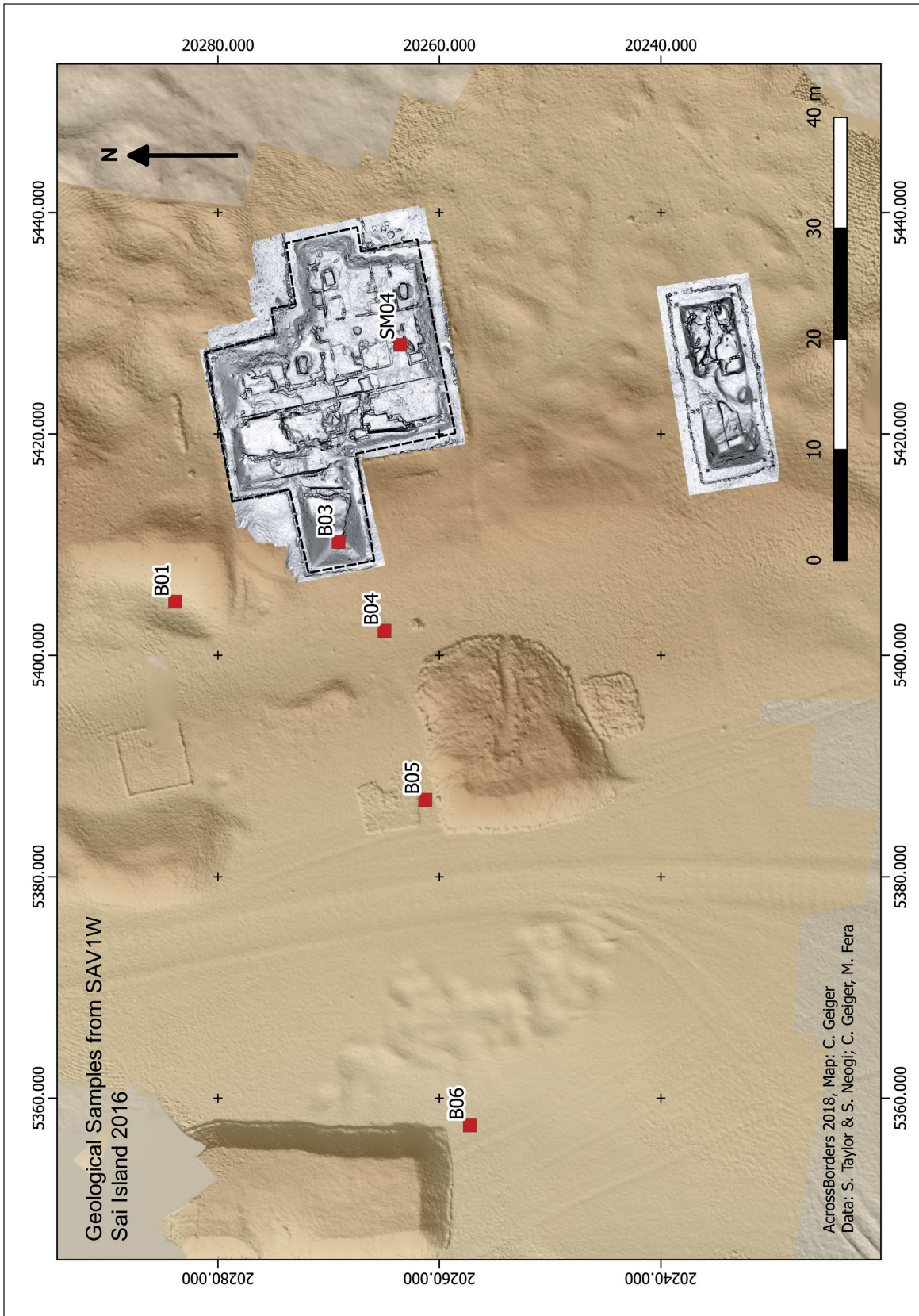


Fig. 53 Locations of geoarchaeological sampling at SAV1 West, 2016 season

Thin section 57 (SM 01 [B], Pl. 68) shows lots of vughs and pseudomorphs of plant tissue. It is also a highly organic sample with very fine material and some nodules of calcium carbonate. The ashy fabric shows very fine remains of highly humified organic matter which infilled the vughs and channels.

Thin section 58 (SM 01 [C], Pl. 69) shows very large clasts up to 1cm of rounded mud brick. Similar to the other samples from SM 01, it is highly organic with lots of phytoliths, humified plant tissue and also abundant bone and charcoal fragments within the aggregates. This is likely to be a midden near a degraded mud brick building. The thin section analysis thus confirms the observation during excavation that the foundation of this schist pavement seems to have two phases. The lowest part was obviously set just above degraded structures or an abandoned area where garbage had accumulated. Since Feature 66 is associated with the mid-18th Dynasty Feature 73, this also confirms the general phasing at SAV1 East.

Sample SM 03 comprises two thin sections and was taken from Floor Feature 72 below the schist pavement in SQ4B1. Thin section 61 (SM 03[A]) is very similar to Thin section 56 with its platy microstructure showing it is sedimentary in nature. It is highly organic and comprises very fine bones, mud bricks, rounded bone and charcoal and there are dung fragments entirely composed of humified organics and phytoliths. There are also a lot of large potsherd fragments.

Thin section 62 (SM 03[B]) has again a platy microstructure with lots of humified organic matter. The very fine plant tissue includes pseudomorphs, smashed mud bricks and some tissue remains that are larger in size than 1cm. It is highly organic and humified and contains calcium carbonate as well as large fragments of mud brick. All in all, Floor Feature 72 seems to correspond nicely to Feature 66 with degraded mud bricks and large amounts of organics, implying that midden deposits from earlier times were incorporated.

SM 08 is the last sample from a schist pavement (Feature 69). Thin section 69 was described as smashed mud bricks composed of pseudomorphs in various states of preservation. It is very organic and compares well to the other two profiles.

Mud brick wall/floors

Mud brick wall Feature 64 and Floor Feature 63 were sampled with SM 09 (Thin section 70, Pl. 70). It is finely organic with clasts of mud brick and a platy microstructure, exhibiting a lot of bioturbation. Pellety fragments are very much churned over humified plant tissue; lots of mud bricks and plant tissue are present as well as little charcoal and bits of bone. The sample looks sedimentary in nature, but with heavy bioturbation. Lots of phytoliths are present.

Activity areas and storage installations

The sample from the baking area Feature 64 (SM 02) comprises two thin sections. Thin section 59 (SM 02[A], Pl. 71) has lots of organic matter and is of fine material. Vughs and channel clasts of mud brick plant tissue remains are most poorly preserved; smashed mud brick with pseudomorphs of plant tissues were noted. All in all, it is a fine organic matter which is sedimentary in nature and included accumulated mud bricks.

Thin section 60 (SM 02[B], Pl. 72) is organic in nature. There are fragments of mud bricks, tissue fragments and probably humified charcoal. The bioturbational features are bow-like. There are lots of plant tissue and organic matter. Definite fragments of mud bricks and charcoal were noted. As interpretation of this section the use of lots of plants debris can be proposed, which is consistent with the interpretation of the area as baking zone.⁵⁵⁰

From the storage pit next to the baking area, Feature 76, two profiles were taken. SM 06 (Thin section 65) comprises sedimentary crusts which are not in situ but have been redeposited. Lots of fragments of all sizes of mud bricks were recognized, being illustrative of the coating of the pit, Feature 76. Lots of quartz particles are included which are homogenously organised. Fine calcium carbonate nodules with

⁵⁵⁰ For similar evidence from cooking areas at Amara West, see Dalton 2017, 383.

amorphous stains are present. Towards the top of the thin section there is the aggregation of material in the form of sedimentary crusts – this is again very well in line with the coating of this storage pit.

The second sample from Feature 76, SM 10 or Thin section 71 shows huge quartzite clasts with channels and vughs and nodules of micrites. Some superimposition of iron oxide can be seen as well as the mixture of fine material with lots of micrites and some pseudomorphs. Plant tissues are present and the sample is very micritic in nature.

The nearby and very similar storage pit Feature 75 yielded SM 11 or Thin section 72. This sample is very fine and organic with lots of pseudomorphs. Large chambers suggest that there has been some bioturbation. Lots of mud brick fragments were recognised, again fitting to the coating of a pit like Feature 75. Infilled channels of the sample show very many pseudomorphs which have an angular shape resembling stem plants. Very fine organics are present as are lots of phytoliths and highly humified abundant charcoal. The quartzite mineral component derives from fine, well-sorted sand.

From the smaller storage bin, Feature 14, a sample was taken (SM 12, Thin section 73) as well. It shows again a complex microstructure and the channels are mostly filled with plant tissue in various stages of preservation. The sample is homogenous. Part of its micromass is micritic in nature with iron oxide and well-preserved dendritic tissue.

Deposits within the largest cellar at SAV1 East, Feature 15, were also sampled. SM 07 derived from the deposit against Wall Feature 44 in the western part of the cellar (see Fig. 52) and represents the lowest filling of Feature 15. The sample comprises three thin sections. Thin section 66 (SM 07 [A]) is very fine and organic, full of charcoal, quartzite rock sand and gravels with mud brick clasts. It is sedimentary in nature with lots of pseudomorphs and also full of phytoliths with areas which have been bioturbated. The sample is full of large pseudomorphs; essentially it is organic in nature.

The microstructure of Thin section 67 (SM 07 [B]) is complex. There are lots of channels and vughs with platy microstructure. The sample is composed of fine organic matter and is mostly fine grained; there are mud brick fragments of various sizes, most of them are very humified. Plant tissues in the form of pseudomorphs are present. There are bones, charcoal and fragments of mud brick, corresponding to the archaeological interpretation of this deposit.

Finally, Thin section 68 (SM 07 [C]) is highly bioturbated and shows very large fragments of charcoal, fragments of mud brick and bone. It is highly calcareous. All in all, the thin sections from Feature 15 support the archaeological interpretation of the deposit of this cellar as an organic-rich layer with many bone fragments, charcoal, ash and other plant tissues.

3.7.6 Conclusive remarks about the micromorphological sampling programme at SAV1 East and SAV1 West

The micromorphological sampling within the AcrossBorders project at sectors SAV1 East and SAV1 West aimed to illustrate aspects of the organisation and use of space and potentially some facets of social practice within the community of 18th Dynasty Sai. Thus, a special focus was laid on 18th Dynasty contexts and here in particular on floors and deposits associated with walls. The big advantage of the micromorphological method is that formation processes can be assessed on the micro scale, including post-depositional processes which often remain unclear during excavation. Natural and cultural deposition, diverse accumulation and various post-depositional alterations could be investigated with the samples from SAV1 East and SAV1 West.

Especially significant for understanding aspects of the use of space within the New Kingdom town of Sai were the samples from the ‘wall street’. Thin section analysis clearly showed that this street was used as traffic route during some time of the 18th Dynasty and only at a later stage also as midden area. The original street levels seem to be informal surfaces rather than constructed ones and this corresponds well to findings at Amara West.⁵⁵¹ Furthermore, the samples from the ‘wall street’ at SAV1 West nicely

⁵⁵¹ Cf. Dalton 2017, 360–361.

illustrated the significant Post-New Kingdom destruction activities and pitting, since these profiles were taken close to the enclosure wall which suffered a lot from later re-use and demolition.

One of the most important findings of the thin section analysis from soil samples taken within the town area of Sai is the importance of organic materials in the life of the 18th Dynasty occupants (see also Chapter 5.1). The samples collected from SAV1 East and West show that the sediments are composed of material that can be primarily characterised as waste of a domestic nature. Cooking is indicated by ashy fabrics and sediments rich in charcoal; in one case, Feature 64, baking is also attested. A large proportion of the component for the sediments of the samples analysed comes from lignified organics and humified amorphous residues. This shows the dominance of organic materials within both sectors. There are a number of scenarios for the origins of this organic matter, producing large quantities of phytoliths within archaeological deposits.⁵⁵² Food waste and the feeding and stabling of animals come to mind. Grain storage, threshing floors, remains of matting and bedding, roofing or thatch and bark and chaff-mud plaster are just a few of the possible scenarios and are all likely for the New Kingdom town of Sai.

In this respect, an important question is whether the accumulation of organic-rich sediment represents the use life of the buildings or whether the sediments are related to the post-depositional filling of the buildings with refuse. Bioturbational features, along with other elements, suggest in many cases post-depositional decomposition and reworking of the sediments by fauna.⁵⁵³ It was, therefore, important to date these deposits and correlate the archaeological material such as pottery with the sampling areas and thin section profiles. In our case, most of the samples from SAV1 West and SAV1 East can be clearly associated with the use life of the respective sectors in the New Kingdom town. Profile 12 from SAV1 West is in this respect particularly important because it comprised various phases of use, including a degraded status of the 18th Dynasty buildings. It is well known from Egyptian settlements in Egypt and Nubia that during abandonment phases and/or reconstruction phases, older buildings were convenient places to deposit waste.⁵⁵⁴

To conclude, much potential for the functional analysis of complicated sites with multiple formation processes, like the New Kingdom town of Sai, lies in the implementation of a micromorphological sampling programme. This line of research should, therefore, be further strengthened in the future at settlement sites in Egypt and Nubia.⁵⁵⁵

3.8 TEAM MEMBERS OF FIELD SEASONS

Funds for fieldwork on Sai from 2013 to 2017 were granted to Julia Budka by the European Research Council (ERC Starting Grant no. 313668) and the Austrian Science Fund (FWF START project Y615-G19). Thus, the list of team members includes ERC as well as FWF collaborators.

2013

The 2013 mission of AcrossBorders on Sai Island was carried out from January 4 to March 8, 2013. Fieldwork with workmen under the supervision of Rais Imad SHORBAGI MOHAMED FARAH was conducted from January 6 to February 14. From January 28 to February 14, 2013 the architectural survey in the southern part of the New Kingdom Town was realised. The inspector of NCAM of the 2013 season was Huda MAGZOUB.

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⁵⁵² Cf. Albert and Weiner 2001.

⁵⁵³ Kooistra and Pulleman 2010.

⁵⁵⁴ Cf. Schiffer 1987. For waste management in Egyptian settlements, see, e.g., Shaw 2013; Arnold 2015.

⁵⁵⁵ As one of the best examples for a rich outcome, see the research at Amara West: Dalton 2017; Dalton and Ryan 2018.

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2014

The 2014 mission on Sai Island was carried out from December 31, 2013 to March 1, 2014. Fieldwork with workmen under the supervision of Rais Imad SHORBAGI MOHAMED FARAH was conducted from January 4 to February 13. The inspector of NCAM of the 2014 season was Huda MAGZOUB.

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2015

The 2015 mission of AcrossBorders on Sai Island was carried out from December 31, 2014 to March 13, 2015. Fieldwork with workmen under the supervision of Rais Imad SHORBAGI MOHAMED FARAH was conducted from January 3 to March 11. The inspector of NCAM of the 2015 season was Huda MAGZOUB.

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2016

The 2016 mission of AcrossBorders on Sai Island was carried out from December 31, 2015 to March 12, 2016. Fieldwork with workmen under the supervision of Hassan DAWD was carried out from January 2 to March 11. The inspector for NCAM in the 2016 season was Huda MAGZOUB. AcrossBorders also welcomed Roa ABDELAZIZ as trainee from NCAM (January 1 to January 24, 2016).

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2017

The 2017 mission of AcrossBorders on Sai Island was carried out from December 31, 2016 to March 11, 2017. Fieldwork with workmen under the supervision of Hassan DAWD was carried out from December 31 to January 26 and from February 18 to March 10. The inspector for NCAM in the 2017 season was Huda MAGZOUB.

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