Alexandria, Kom el-Dikka, season 2021

Abstract: Excavations of the central part of the Kom el-Dikka archaeological site in Alexandria have reached early Roman levels and the current investigations of the PCMA UW expedition are focused on completing the excavation of some of the partly uncovered architecture. The southwestern part of House FA was explored, uncovering two fragments of colourful mosaic floors. Building chronology was established based on finds from two deep stratigraphic probes dug inside the structure. The main phases of occupation of House FA turned out to be comprised in a period between the 1st and 3rd centuries CE.
The archaeological part of the program was accompanied by current preservation and maintenance work that the team is tasked with in different parts of the site; necessary preservation projects were undertaken this year in the theatre, the portico in front of the theatre and the early Roman buildings in the central part of the site. The mosaics on display in the mosaic shelter have also undergone cyclical conservation treatment.

Keywords: Egypt, Alexandria, Kom el-Dikka, Roman period, domestic architecture, floor mosaics, Roman pottery

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Following a forced, pandemic-induced disruption of the fieldwork in 2020, the expedition returned to the site with an annual multi-faceted programme of archaeological research and preservation work. The conservation programme is currently geared to needed repairs and maintenance work across the site, whereas archaeological excavations in the 2021 season were concentrated in the central part of the site (sector F) [*Fig. 1*].

Studies of the various corpora of artifacts from current and past excavations continued in full swing as well. Ancient bone carvings and objects were documented and studied by Jolanta Jabłonowska-Taracha, continuing her earlier research on this large collection which includes appliques, inlays, pins, dies and gaming pieces, as well as offcuts and waste scraps. Renata Kucharczyk pursued her research on the equally numerous corpus of glass finds from both present and past excavations, focusing on the early Islamic material excavated between the 1960s and the 2010s, which is the subject of a forthcoming monograph. The epigraphic material, encompassing

Fig. 1. Kom el Dikka archaeological site: areas of excavation and conservation work completed in the 2021 season (PCMA UW | drawing W. Kołątaj, updated D. Tarara)

inscriptions, graffiti and *dipinti*, was handled as usual by Adam Łukaszewicz. Anthropological investigation conducted by Robert Mahler focused on the human skeletal material originating from the medieval cemetery, excavated in the past throughout the site. The presence of anthropologists offered a unique opportunity to train SCA staff members in basic anthropology in addition to the regular basic field training course given by the PCMA expedition.

EXCAVATION OF EARLY ROMAN HOUSES

Limited, in-point research work was the focus of the short field season in 2021, concentrating on the early Roman architecture already uncovered earlier in the central part of the site [*Fig. 2*]. The objective was to collect more data on building chronology by completing a study of the still only partly excavated chambers in the southwestern part of House FA which had been investigated previously in the mid- and late 1990s (Majcherek 1995a; 1996; 1997; 1998). Likewise, research was undertaken in the eastern wing of the adjacent House FB, where investigations were temporarily suspended in the 2007 season (Majcherek 2010).

HOUSE FA: SOUTHWESTERN QUARTER

Two rooms: FA-9 and FA-10, the two of similar dimensions (2.30 × 3.25 m), were explored, removing a post-destruction fill of more than one-metre thickness to uncover the original mosaic floors in both chambers.

Early Roman phase

Fragmentary mosaic floors were discovered in the respective rooms at approximately 6.10–6.20 m asl, directly below the destruction layers. The smaller mosaic fragment (2045.21), in FA-9, measuring roughly 0.70 m by 1.50 m, featured a simple geometric design, composed of

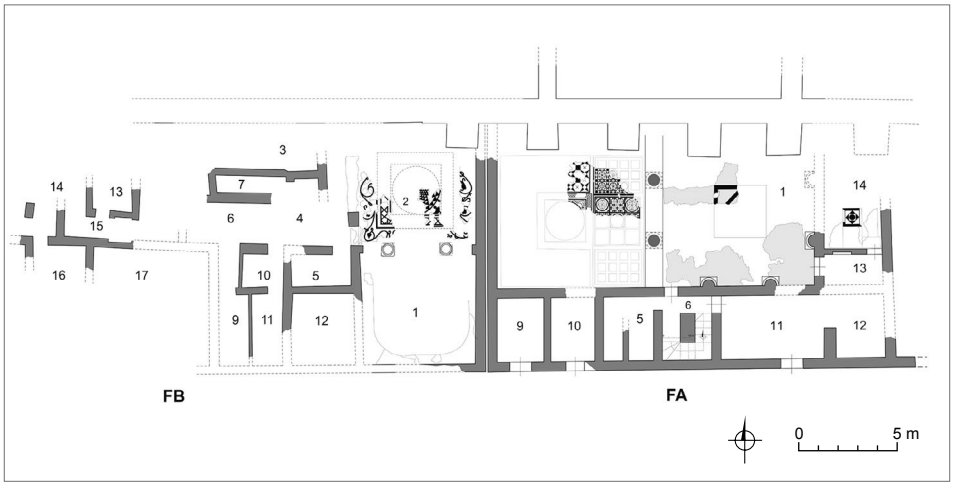

Fig. 2. Early Roman houses in Area F; state of exploration in 2021 (PCMA UW | drawing M. Sołtys and G. Majcherek, digitizing M. Puszkarski)

regularly set squares of black tesserae, surrounded with white ones and separated by black rectangles [*Fig. 3*].

The larger mosaic (2018.21) in the adjoining room FA-10 was far better preserved. The main tessellated field, formed a square, 2.90 m to the side, framed by a band of six rows of black cubes, enclosing a strip of inhabited acanthus scroll, on a white background [*Fig. 4*]. A single running scroll stems from an acanthus foot, located in the center of the eastern side of the panel. Inside each loop there are additional flower sprouts, buds, pomegranates and *hederae*. The vegetal ornament was made of tesserae in four principal colors: white for the background, and mostly black, orange-red and yellow for the scrolling pattern. A band of three rows of black cubes separated the scroll ornament from the central panel, which measured 2.00 m to the side. The panel had an inscribed shield of black-and-white interchanging scales. The spandrels were filled with a schematic vegetal scroll, featuring also pomegranates and *hederae*. There was a small central emblema (approximately 0.30 m in diameter), which has not survived. The mosaic was executed using medium-size tesserae, with a mean density of about 85–90 cubes per square decimetre (=100 cm^2). The tesserae were cut from common, widely available stone, such as basalt or greywacke, Proconnesian marble, *breccia corallina*, *giallo antico* and Egyptian limestone.

The mosaic is yet another example of the popularity of a specific artistic trend prevalent in Alexandrian mosaic art. The circle-in-square design is unquestionably one of the most widely attested (Daszewski 1996). And significantly, the presence of this design can be observed over a long period of time. Early examples of its use appear in mosaics from the Ptolemaic period (Guimiers-Sorbets 2019: 74). It is in

Fig. 3. Remains of a mosaic floor in room FA-9 (PCMA UW | photo G. Majcherek)

the Roman period, however, that it occupies a special position, becoming a staple of the composition of numerous mosaics known from Alexandria (Maamura, Chatbi, Canopus or the Cinema Diana site; Guimiers-Sorbets 2019: 75–85). Such a composition appears also to have been preferred in the houses uncovered at Kom el-Dikka and can be observed in the mosaic decoration of *triclinia* in the Roman houses FA-2, FB-1, FB-19 and MA-2 (Majcherek 2003).

Level of abandonment

The post destruction accumulation in both rooms consisted mostly of loose earth, intercalated with large ash deposits (contexts 2011.21 and 2014–2017.21 respectively), sometimes also mixed with slag and occasional marble detritus, all apparently associated with the later lime production attested at the site. In the past, two well preserved lime kilns Fa and Fb, forming part of a large industrial site composed of six kilns active in the late 3rd–early 4th centuries CE, were identified in the immediate vicinity (Majcherek 1999; 2011). Recorded examples of marble debris include fragments of wall tiles, pavement slabs or even more elaborate ornamentation made of Proconessian marble, *cippolino verde* and *rosso*, as well as *Greco scritto* and Egyptian porphyry to list only those that have been recognised. Similar concentrations of broken marble, most likely collected for firing, were also noted in the past next to the other lime kilns located further west (Majcherek 2011). Unfortunately, the provenance of these fragments could not be established.

Fig. 4. Mosaic floor in room FA-10 (PCMA UW | photo G. Majcherek)

A notable feature was a stone collapse, accompanied by fragments of multicoloured plastering, found in room FA-9 (contexts 2011.21 and 2022.21) [*Fig. 5*]. Some of the ashlars, apparently originating from the damaged or dismantled walls of the room, were particularly large, often exceeding 1 m in length. They bear witness to a well-developed technique of wall structuring. The north wall of room FA-9 was found to be almost entirely dismantled. It is tempting to associate this operation with the subsequent construction of a double well in the adjacent room FA-7. Similarly, the west wall of room FA-9 had been robbed in antiquity and was largely restored within the framework of the current preservation programme.

Pottery finds, retrieved from the fill, were dated rather broadly and thus of little help in establishing a more precise date for the abandonment and destruction of this part of the building. Finds demonstrated the usual range of forms and types, typical of the 2nd–3rd/early 4th centuries CE horizon [*Fig. 6*]. Most of the fragments recorded belong to transport containers. In addition to the quite sizeable presence of Mareotic and Nile silt AE3 amphorae (Dixneuf 2011: 97–128), there was quite a collection of foreign vessels. Sherds of small cylindrical, white-washed amphorae from Cilicia (Agora M239), and varied forms of Cretan (Marangou-Lerat 1995, forms AC1–3) as well as other Aegean amphorae were well in evidence. A number of double-handled, wide-mouth water jugs, with a distinctive heavily profiled foot, was also recorded. Characteristic features of their Nile silt fabric indicate that they could have originated from the workshops of the western Delta, although so far their presence on a larger scale has been recorded only in Alexandria.

Fig. 5. Stone collapse in room FA-9, looking north (PCMA UW | photo G. Majcherek)

Kitchen ware vessels made in very similar fabric were prolific. Apart from typical globular cooking pots [*Fig. 6:1*] and casseroles [*Fig. 6:2–3*], a number of Egyptian made pans of the *orlo bifido* type was recorded. Of great interest was a small casserole (2017.13.21) with everted rim and unusual, *post cocturam* incised decoration located on the underside of the bottom [*Fig. 6:4*]. It featured a six-petalled star-like rosette with an inscribed circle.

Building phases – discussion

Finding the two mosaic fragments is crucial for a reinterpretation of the two rooms FA-9 and FA-10. The size and disposition of the preserved fragments imply one large mosaic floor originally decorating a single, large room (5.10 m by 3.30 m), which was only later divided into two smaller rooms FA-9 and 10 [*Figs 7–8*]. The overall design of the mosaic floor seems to correspond to an *oikos* rather than a *triclinium*: the typical U-layout is nowhere to be seen. There is certainly no room to accommodate a *kline*, the indispensible furniture of Roman banquets (*convivia*) (Dunbabin 2003). By the same token, it is not exactly clear how this would have worked functionally with the other parts of House FA, particularly the large *triclinium* in room FA-2, discovered in 1994.

The wall construction technique, identified in the area explored this season, was similar to other structures of the Roman age previously excavated at the site. Walls, preserved sometimes even to a height of 2.80–3.00 m above the floor level, were structured chiefly in a regular isodomic technique using ashlars of local soft limestone. The walls, typically 0.45 m thick, were certainly solid enough to sup-

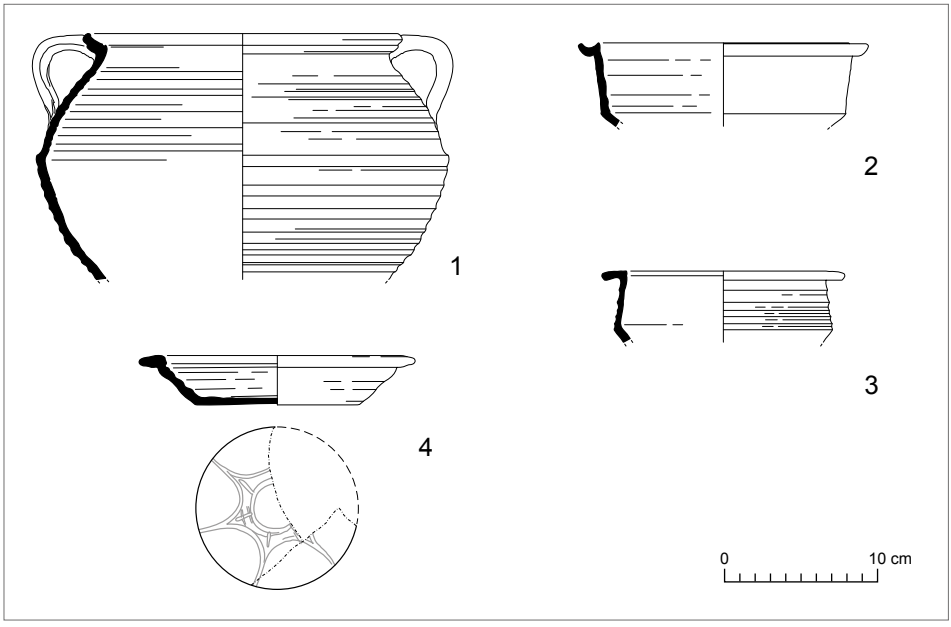

Fig. 4. Selection of early Roman pottery from rooms FA-9 and FA-10 (PCMA UW | drawing G. Majcherek, E. Kulicka. digitizing M. Momot)

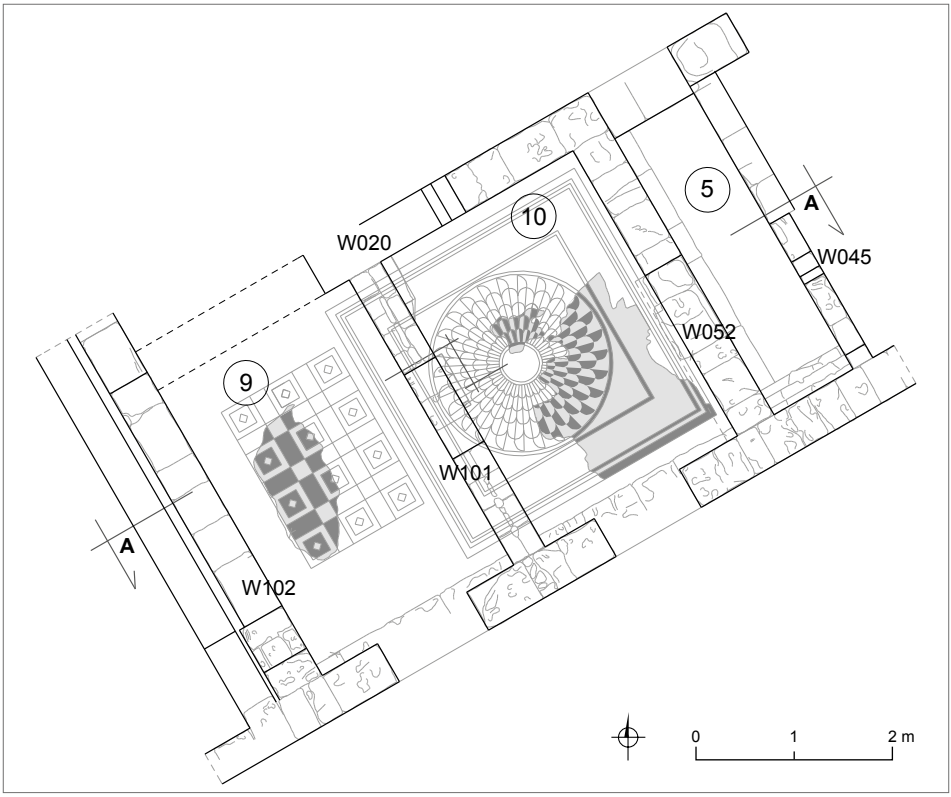

Fig. 7. Mosaic floor from a chamber later divided into Rooms FA-9 and FA-10 (PCMA UW | drawing M. Polak)

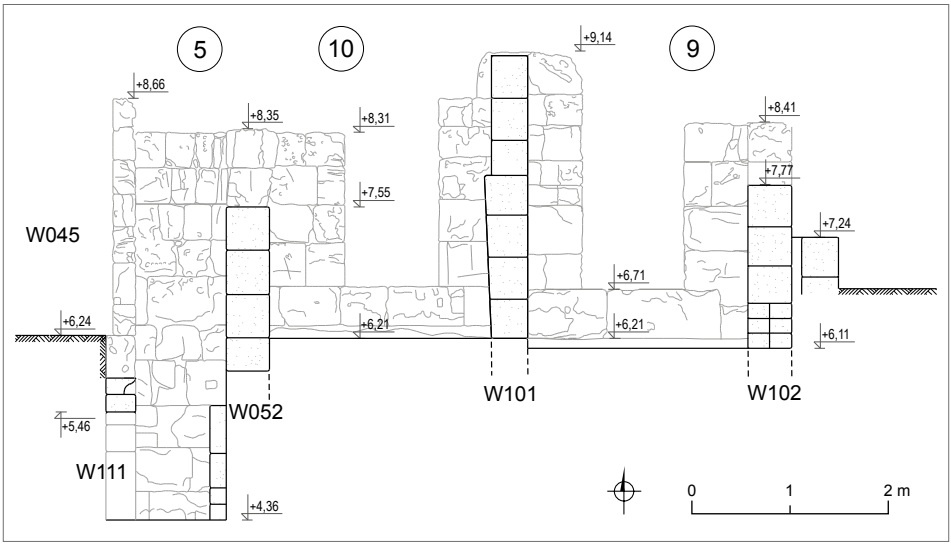

Fig. 8. Rooms FA-9 and FA-10, east–west cross section (PCMA UW | drawing M. Polak)

port the second storey, the presence of which is further attested by the remains of a staircase preserved in room FA-5.

In the final phase of occupation, however, this part of the building apparently underwent substantial transformations that entailed a total change of function of individual rooms. Along with partition walls (e.g., courtyard, Rooms 3 and 4), new masonry techniques were commonly introduced throughout the building. Newly formed Rooms 7 and 7a were covered with brick domes, while some others received brick barrel vaults. Traces of such pitched vaults were also found in the newly excavated rooms. A small fragment of the vault was preserved *in situ* in the northwestern corner of room FA-10 [*Fig. 9*]. Corbels apparently intended to receive the springers of the vault are still extant in the walls of the two chambers (W052). The fill itself produced a large number of complete and broken baked bricks. Square bricks (approximately 0.25–0.26 m to the side) were invariably made of Nile silt.

In this later phase, the newly formed Rooms FA-9 and FA-10 must have had their mosaics covered with new floors and were most probably used as shops (*tabernae*/*oikemata*) as implied by their total separation from the main body of the house, and the presence of doors giving access to the respective rooms directly from the street [see *Figs 7–8*].

HOUSE FA: CESSPOOL IN ROOM 5

In room FA-5, adjoining room FA-10 from the east, a well preserved reservoir, most probably serving as a cesspool, was cleared [*Fig. 10*]. The reservoir (3.20 m by 0.78–0.80 m) was sunk some 1.85 m below the floor level. The cesspool was in all probability designed to receive sewage

Fig. 9. Fragment of pitched vaulting in Room FA-10 (PCMA UW | photo G. Majcherek)

from the latrine, but also from a sanitary installation on the second floor of the house. It should be noted, however, that traces of feces on its walls were rather meagre, indicating either short or non-intensive use. An inlet (0.28 × 0.60 m)

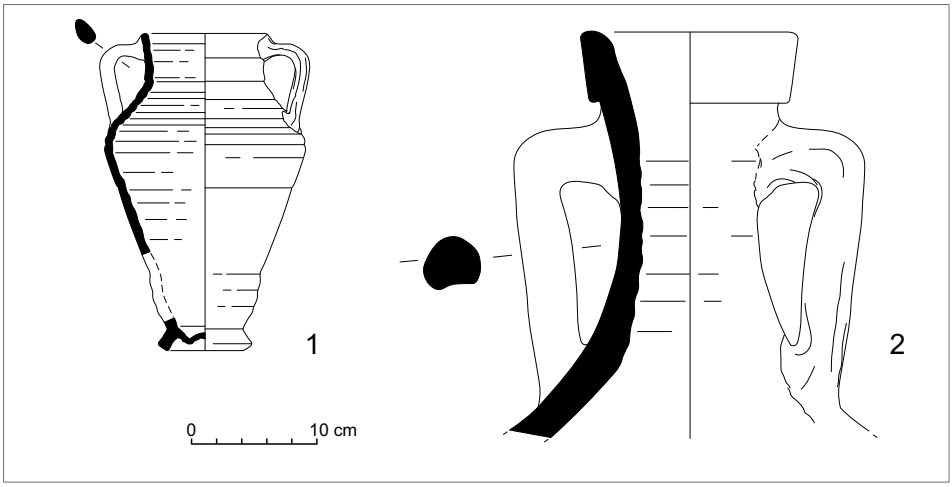

Fig. 11. Pottery finds from the cesspool in room FA-5 (PCMA UW | drawing G.Majcherek, digitizing M. Momot)

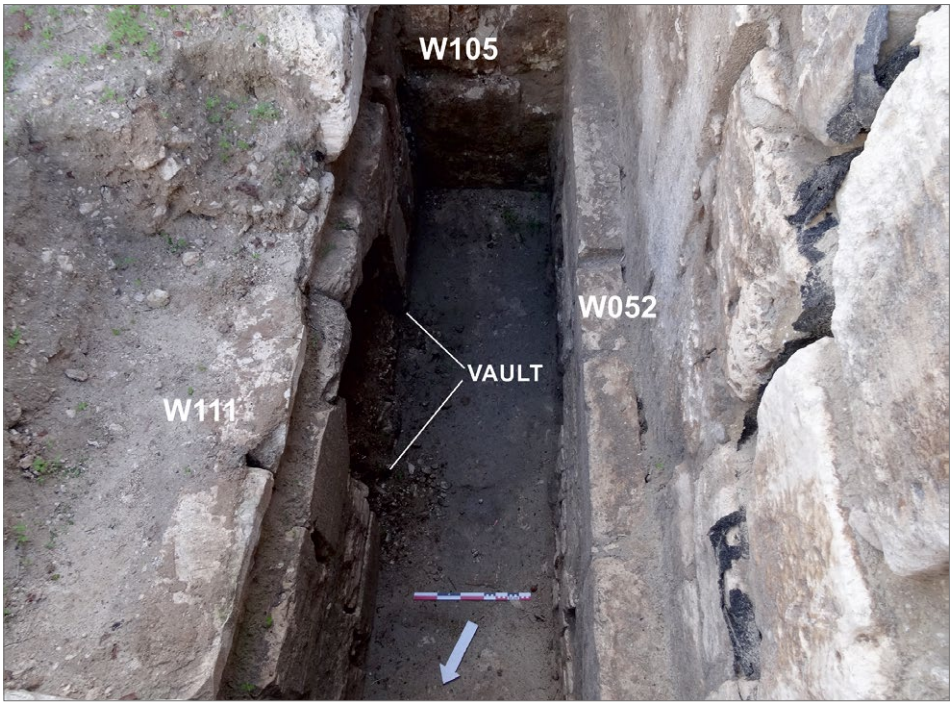

Fig. 10. Cesspool in Room FA-5, looking south (PCMA UW | photo G. Majcherek)

from a nearby vertical shaft (0.30 × 0.40 m in section), evacuating waste water from the second floor, was identified in the southeastern corner of the cesspool. Yet another smaller inlet (0.45 m by 0.20 m) was uncovered in the west wall (W111), leading from the nearby room FA-10. A large stone arch in the east wall (W111), with a span of 1.10 m, leads to another, most likely twin chamber [see *Fig. 10*]. The chamber, cleared this season, was obviously vaulted as evidenced by a distinct, deep undercut designed to support bricks, preserved in its east wall and a similar offset in the western one.

An array of pottery finds recovered from the fill was mostly of 3rd–early 4th century CE date, although some earlier, residual forms were also present. Among meaningful finds one should list an almost complete, 3rd-century-CE, profiled foot jug, manufactured in Nile silt fabric [*Fig. 11:1*] and an upper fragment of a large Dressel 6A class amphora [*Fig.11:2*], produced in the 1st century BCE–1st century CE in the Italian/Adriatic region (Cipriano and Carre 1989). This amphora, which is rather rare from excavations in Alexandria and Egypt in general, was used principally as a container for wine or olive oil (Şenol 2018: 301–320).

HOUSE FA: TEST IN ROOM 11 (TRENCH 1998-11B)

A deep stratigraphic probe was dug in room FA-11 to the east with the aim to collect more data on the chronology of the building, the construction date in particular.

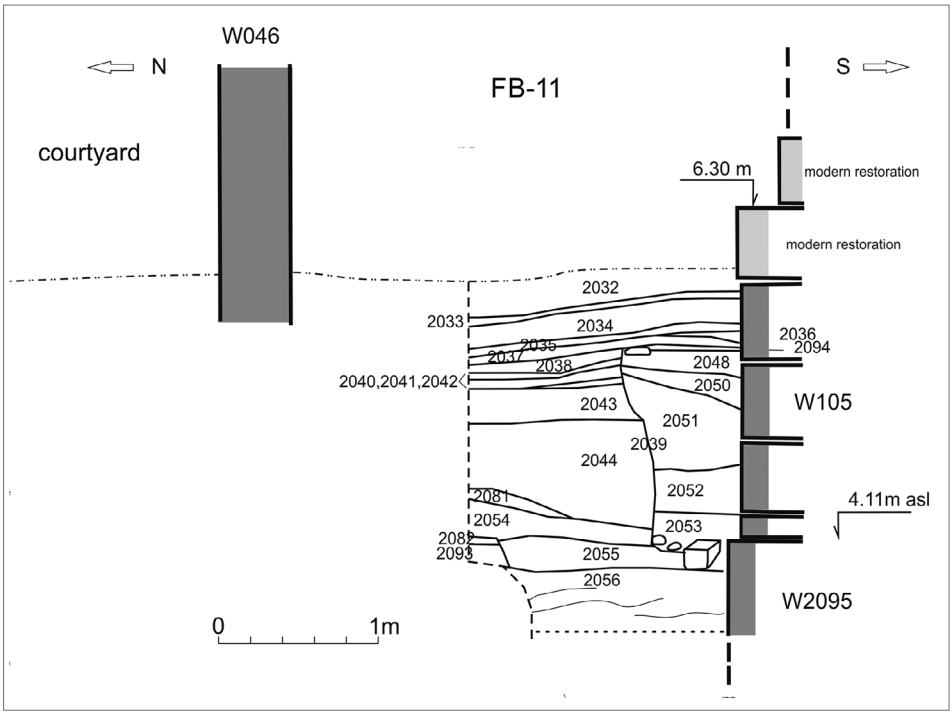

Fig. 12. Eastern face of a probe dug in room FA-11 [see ***Fig. 13***] (PCMA UW | drawing E. Kulicka)

The trench, measuring roughly 2.05 m by 3.20 m, was an extension of a pit excavated there in 1998. The excavation now halted at 3.20 m asl, which is the current water table level. A stratigraphic sequence of layers, reaching a total thickness of 2.20 m, documents the transformations of this part of the building [*Fig. 12*].

Earlier building phase

It now appears that the Roman House FA was built over the remnants of an earlier construction, in all probability also a house. A section of the late Ptolemaic/early Roman wall (W105), approximately 3.20 m long, was cleared. It was built using carefully worked, extremely large limestone blocks, exceeding 1.20 m in length [*Fig. 13*]. A single course of a deeper, predating wall (W2095) still bore a large patch of *opus signinum* plastering. The exact function of this earlier structure could not be ascertained.

Exploration of deposits related to the earliest recognised strata, comprising several horizontally deposited layers (contexts 2038.21, 2043–2044.21 and 2054–2055.21), produced a considerable quantity of pottery finds, representing mostly late Hellenistic material and providing, in the absence of numismatic finds, much needed chronological evidence. Numerous examples of Egyptian Black Gloss Ware in Nile silt fabric formed the most conspicuous group of finds, quite often reported also from other Alexandrian sites (Hayes and Harlaut 2002). Three basic types of vessels imitating standard Hellenistic forms

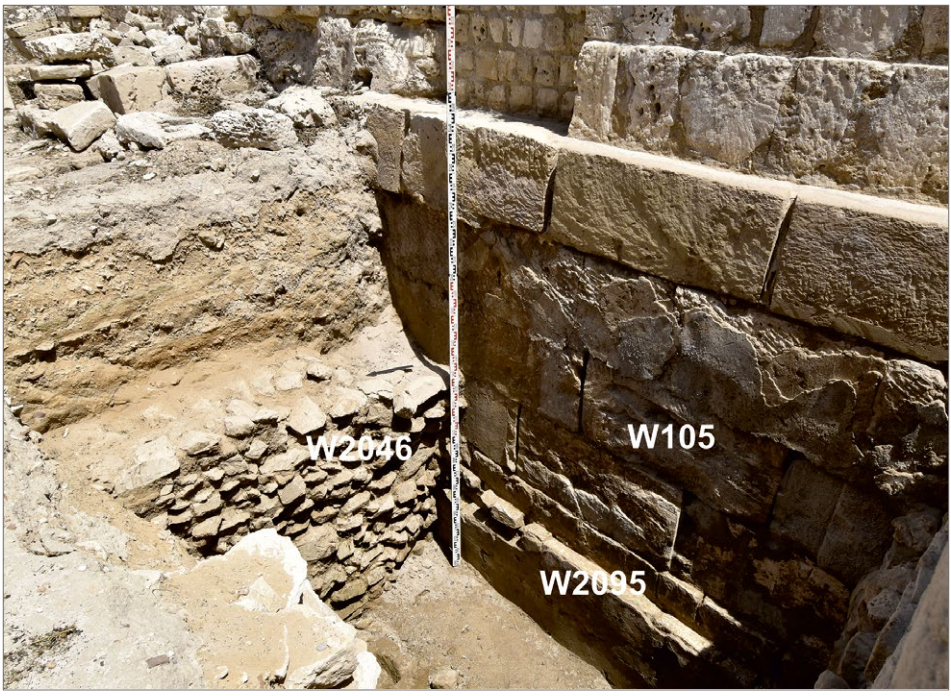

Fig. 13. Probe in room FA-11, looking southeast [see ***Fig. 12***] (PCMA UW | photo G. Majcherek)

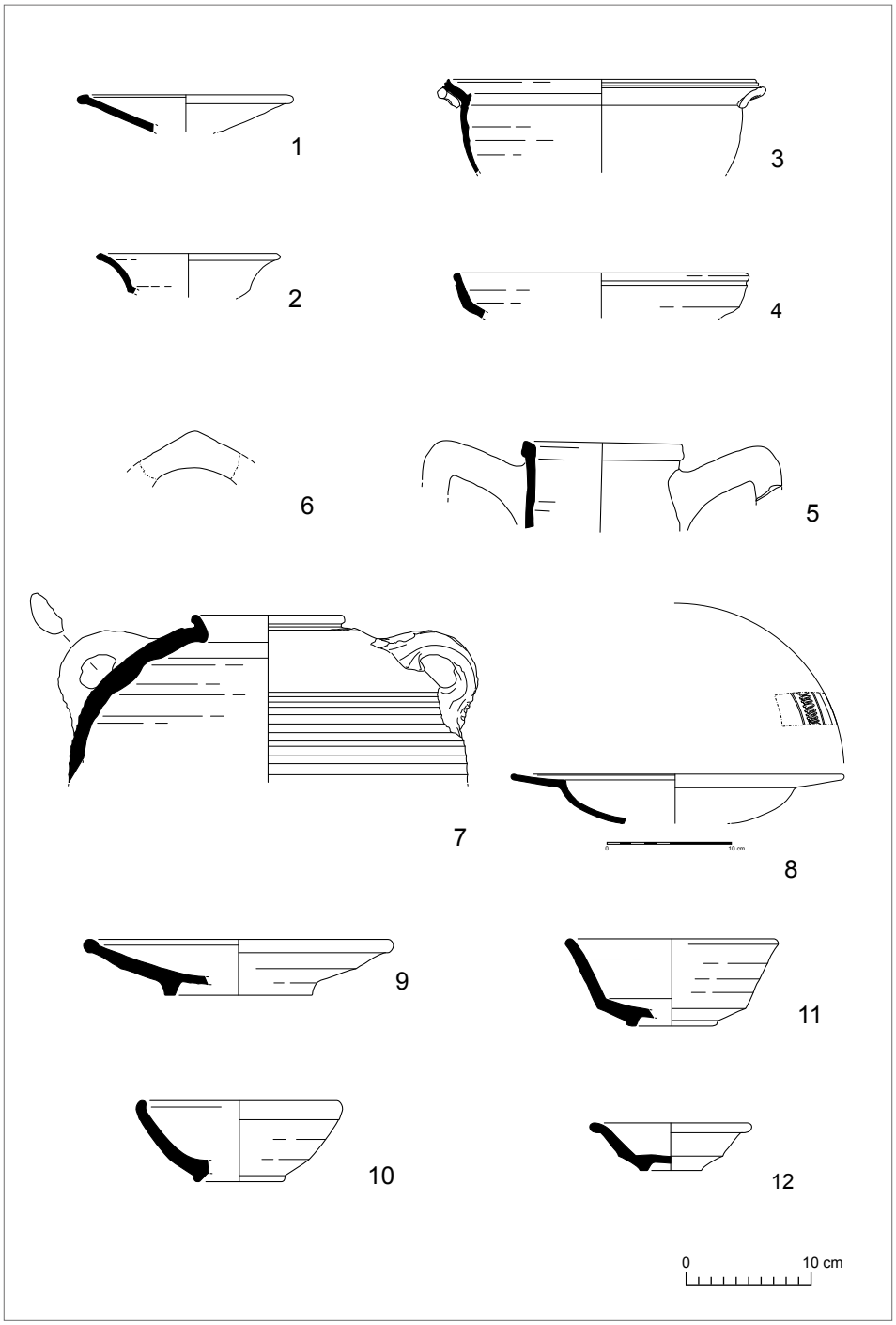

Fig. 14. Selection of pottery finds from probes 1998-11B (1–8) and 2021-2 (9–12) (PCMA UW | drawing E. Kulicka, G. Majcherek; digitizing M. Momot)

were noted: *echinus* bowls, lipped dishes, and flared cups/bowls [*Fig. 14:1–2*]. The dating of these forms is unfortunately too broad and far from precise. They are generally situated between the 2nd and 1st centuries BCE, but can extend even into the Roman period.

Two tiny sherds of imported Attic Black-Glazed Ware, completed the repertoire of fine wares. Quite a few fragments of Egyptian kitchen ware (cooking pots and casseroles) belonged to forms representing roughly the same chronological horizon [*Figs. 14:3–4*]. Numerous fragments of Egyptian (AE2 forms, Dixneuf 2011: 87–95) and Late Hellenistic Aegean amphorae were also recorded. Among the latter were two fragmentarily preserved necks of Rhodian amphorae with obliterated and illegible stamps on the handles [*Fig. 14:5*]. It is worth noting that several fragments of non-Egyptian *tegulae* and *imbrices* were also found in this accumulation [*Fig. 14:6*]. Imported *tegulae* are indeed a very rare find in Alexandria. Moreover, the fill of a narrow foundation trench (2039.21) of the House FA façade wall (W105) produced examples of pottery of similar date, implying that the *terminus a quo* for the construction of House FA should be placed in the 1st century BCE at the latest.

Roman-age occupation

Structural remains that could be linked to the Roman phase of occupation consisted of short stretches of two N–S walls (W2046 and W2097), built in the same technique of medium-sized limestone rubble set in clay mortar. Their purpose, however, is rather confusing. They may have served as foundations for walls that were not preserved, or perhaps even never built.

The Roman-age occupational layers inside the house (contexts 2032–2035.21) produced a chronologically mixed set of finds. The ceramic finds, albeit numerous, had a limited chronological potential. The bulk of the recorded fragments represents an early (2nd–3rd centuries CE) version of Gazan amphorae (Majcherek 1995b) [*Fig. 14:7*]. This is but more proof of the preference for Palestinian wine on the Alexandrian market even at such an early date. Scattered sherds of Cretan Amphorae (unidentified forms) and the northwestern Syrian (Ras el-Bassit) version of Pompei-5-type vessels were also identified (Mills and Reynolds 2014). One of the few pieces of fineware is a fragment of a large bowl of ARS form 45, dated to the 3rd century CE [*Fig. 14:8*].

HOUSE FB: EASTERN WING

This part of the building of the adjacent House FB was initially excavated in the 2006/2007 season, but exploration was halted because of the threat posed by the badly damaged and disintegrated walls (Majcherek 2010). This season, following conservation work, it was possible to complete the exploration of a group of four rooms: FB-5 and FB-10–12 [see *Fig. 2*].

Layers not exceeding 0.30 m in thickness, lying directly on the floors of the rooms, were cleared. However, the resulting chronological data should be treated with caution because the accumulation remained open for an extended period of time and was probably disturbed.

The finds recovered during the exploration belong mostly to the 2nd–3rd/early 4th century CE horizon and refer

Fig. 15. Floor in room FB-12 of House FB (PCMA UW | photo G. Majcherek)

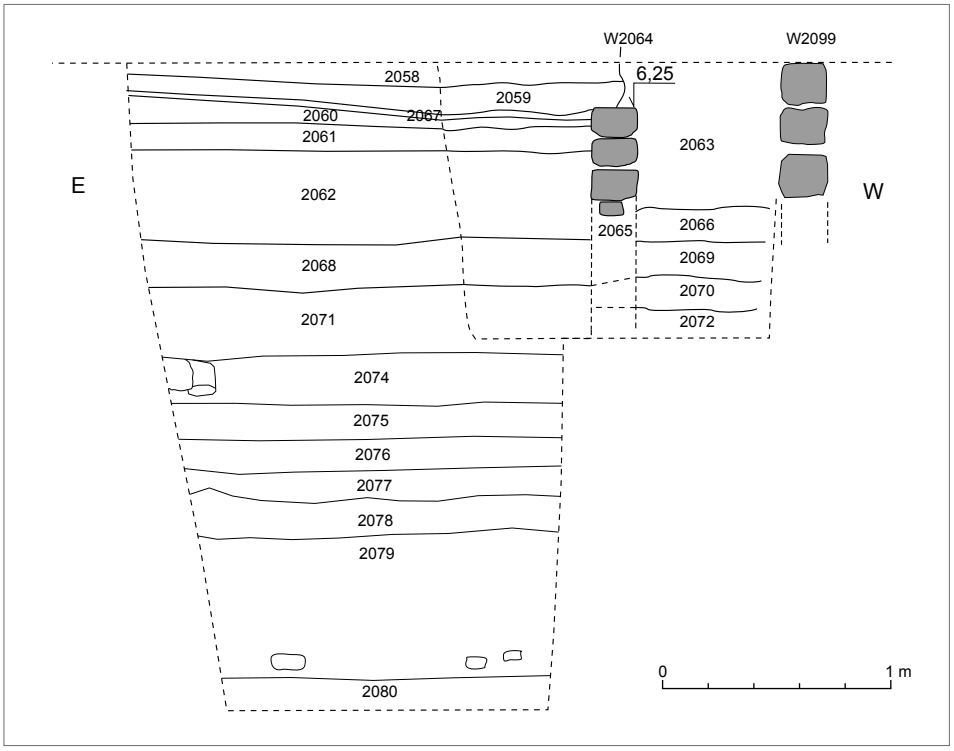

Fig. 16. East–west cross-section through the probe in room FB-16/17 (PCMA UW | drawing E. Kulicka)

to the final occupation of the building. In addition to a significant presence of LRA4 amphorae, a large group of AE3 and AE7-1.1 (early versions, Dixneuf 2011: 154–164), fragments, representing both Mareotic and Nile Valley production centres, was also recorded. Imported vessels included fragments of *Africano Piccolo*, Cilician (Agora M239) and Aegean Zeest 80 amphorae. Other coarseware vessels were represented by particularly abundant Egyptian "profiled foot" jugs, and some kitchen ware, including globular, Aegean-type cooking pots (Majcherek 2020).

In all of the rooms the floors turned out to be made of assorted, small and irregularly cut stones embedded in lime mortar [*Fig. 15*], creating a solid surface. Floors made in the same way were previously discovered also in the western wing of House FB (rooms FB-13, FB15–16, and FB-18). The floors in rooms FB-12 and FB-5 were relatively well preserved, while in FB-10 and FB-11 only small sections have survived. Moreover, in the latter two, the floor level appeared to slope significantly towards the west, probably in consequence of seismic events.

HOUSE FB: PROBE IN ROOMS FB-16/17 (TRENCH 2021-2)

In the area connecting rooms FB-16 and FB-17, a medium-sized (3.00 m by 1.50 m) stratigraphic test was dug. The data obtained there have confirmed to a large extent the chronological observations made in the probe excavated in room FA-11 (trench 1998-11B), in the neighbouring House FA, providing evidence for the earliest occupation in this area. However, the small size of the trench did not allow for a full interpretation of the structures found.

A thick sequence of earlier accumulations (contexts 2062.21–2080.21) produced invariably late Hellenistic material (2nd–1st centuries BCE). Also here, a significant representation of Egyptian Black Gloss Ware was observed, with all three standard forms well in evidence [*Fig. 14:9–12*].

Layers immediately below the Roman-period floor level yielded mostly pottery but also several lamp fragments of 2nd–3rd century CE date. Ceramic finds included fragments of AE3 amphorae, some Aegean containers and the so called "pinched-handles" vessels (Lund 2000) produced in Cyprus and in the southern regions of Asia Minor. In the western part of the trench, two narrow N–S walls made of an assorted, unmortared rubble were cleared (W2065 and W2099) [*Fig. 16*]. Their function is obscure, but it can be assumed that they originally adjoined, respectively, the eastern and western faces of the wall dividing rooms FB-16 and FB-17. The wall itself was dismantled, most probably already in the 4th century CE, as may be inferred from accompanying datable pottery obtained from the fill.

CONSERVATION AND MAINTENANCE WORK

This season the conservation work programme was reduced to ongoing operations and maintenance intervention where most needed.

THEATRE

The theatre had undergone general conservation in the 1960s when a large part of the auditorium was rebuilt and a basic anastylosis was completed (Kołątaj and Kołątaj 1975), and again in the 1980s, when the external walls of the building were protected (Kołątaj 1994: 5–8). Half a century after the original conservation and almost 30 years after the work on the outer walls, interventions were needed, especially in the parts of the outer walls that had not required extended conservation before. The 7-m-long section of the south wall of the theatre, enclosing the south vestibule, was a case in point.

The wall was originally structured using a typical Late Roman technique: core of mortared rubble bonded with lime-ash mortar, faced with small ashlars and levelled with brick-bonding courses made of three bricks running through

Fig. 17. Theatre, south wall during (top) and following conservation work in 2021 (PCMA UW | photo G. Majcherek)

the core and acting as a structural layer. The same technique has been observed in the portico backwall and the outer walls of the cistern. The damage concerned square bricks (26 cm to the side), which were critically damaged, in most instances deeply cracked and eroded, as well as the mortar, which in many parts had lost coherence and disintegrated [*Fig. 17* top]. Many of the blocks and bricks have been almost totally detached from the wall. The entire exposed length (the lower courses of the wall are still unexcavated) of the southern face, stretching west of the vaulted entrance to the southern *vomitorium*, was now restored under Majcherek's supervision). The small section of the northern face close to the western end was likewise subject to conservation measures. Some badly deteriorated ashlars were replaced with new ones found nearby in the excavation and most likely belonging originally to this particular structure. Missing or disintegrated bricks were also completed with similar ones from the site, which had been recorded as stray finds [*Fig. 17* bottom]. Weakened and deteriorated joints were refilled with new mortar and re-pointed. The new mortar was a visual match for the original one and was, as always, based on a formula akin to the ancient one: one part of lime to two parts of sand and one part of ash. The latter was collected from the thick ash deposits once discarded from the heating system of the late Roman bath in the central part of the site.

Moreover, the wall coping was reshaped and covered with a protective layer of lime reinforced with cement in order to prevent water infiltration. It was shaped to slope to the outside (to the south) to ensure that water would drain away from the theatre. Such arrangements had already been introduced in other sections of the theatre outer wall copings and had proved very effective.

SECTOR F

Due to time constraints, conservation work in the sector was limited to House FB, where excavations, carried out initially in 2007 (Majcherek 2010), had been suspended owing to security concerns over the severely damaged masonry, which had suffered the effects of major seismic events and demolition carried out in antiquity and the Middle Ages.

The north wall of room FB-10, leaning considerably (most probably due to an earthquake), was now treated (work supervised by M. Polak) [*Fig. 18* left]. The wall had been provisionally shored up with wooden beams during the excavations. It was structured in regular ashlar masonry, approximately 0.45 m thick. The procedure necessitated a partial dismantling: four courses of the masonry were carefully disassembled after the shoring had been removed. Some of the ashlars were crushed and disintegrated to such a degree that they could not be saved and had to be replaced. The whole structure was then reassembled [*Fig. 18* right]. The work was done using mortar based on a standard formula: one part lime putty to three parts washed, well graded sand. In keeping with established international conservation standards, the present intervention was marked with a separating strip of bitumen tar paper.

Similar measures were undertaken also in neighbouring room FB-7, where the wall fabric displayed serious vertical

Fig. 18. House FB: north wall of room FB-10: left, before restoration; right, following restoration in 2021 (PCMA UW | photos G. Majcherek)

Fig. 19. Column base in the Theatre Portico: left, deteriorated state before restoration; bottom, state after restoration (PCMA UW | photos G. Majcherek)

cracking and fissuring that could be regarded as evidence of seismic damage. The tilted southwestern corner of the walls had to be dismantled and the ancient wall structure was cleaned and provisionally secured in preparation for continued work scheduled for the upcoming season.

THEATRE PORTICO

Another area of maintenance conservation was the so-called Theatre Portico and more specifically the huge monolithic columns of Aswan granite in the southern section of the portico, which had undergone anastylosis in 2005–2006. At the time, new bases made of limestone replaced two of the missing marble ones. These new bases, however, did not stand up well to adverse environmental conditions: sun exposure, heavy rainfall and the resulting salination [*Fig. 19* top]. The stone surface had flaked off considerably, a condition particularly evident in the case of the upper torus. The degree of deterioration on the south side was far greater, clearly indicating the destructive effect of overexposure to the sun.

Treatment (by Szymon Gąsienica-Sieczka) commenced with a thorough desalination using lignin poultices soaked in distilled water and additionally protected with polyethylene film, applied for a seven-day period. A strenghtener (Remmers KSE 510) was brushed on to impregnate the stone [*Fig. 19* bottom]. To slow down evaporation, the bases were kept for approximately two weeks under plastic sheeting, with additional water containers placed underneath. The losses (mostly in the upper torus) were then restored using cement and sand mortar, coloured with dry mineral pigment.

MOSAICS

As before, mosaic preservation was the most demanding and time consuming task. Following an established procedure, the set of mosaics displayed in the "Villa of the Birds" mosaic shelter is subjected to regular, meticulous inspection in a two-year cycle (Kołątaj, Majcherek, and Parandowska 2007). Special attention is given to the effects of past interventions. The current inspection revealed considerable decay and damage due to both salt efflorescence and repeated acts of vandalism. Salts in association with water are the apparent cause of deterioration of porous material, that is to say, the bedding and protective edging.

Prompt restoration treatment was essential. The operation, skilfully performed by Gąsienica-Sieczka with Karim Adel Abd el-Fatah, Mohammed Fawzi Mohammed and Assam Morsi, was divided into a number of stages. The mosaic floors were first dusted and carefully cleaned mechanically [*Fig. 20*]. The pebble layer surrounding mosaics α-2, α-5 and α-6, was temporarily removed. All the collected pebbles were washed and desalinated. The steel panels with mesh supporting the pebble layer and separating it from the ventilation channels, which had suffered some mechanical damage, were repaired. Rusted sections of the mesh were replaced [*Fig. 21*].

Regular conservation work was carried out on the two mosaics: α-5 (with the Birds) and α-6 (with the Panther). The mosaic bedding had disintegrated in places and the tesserae in these areas were detached. The disintegrated protective edgings were removed, the edge surfaces of the mosaics were cleaned and new protective edgings were fitted.

Fig. 20. Cleaning of a mosaic floor inside the "Villa of the Birds" mosaic shelter (PCMA UW | photo G. Majcherek)

Fig. 21. Repaired steel panel readied for installation (PCMA UW | photo G. Majcherek)

Wherever the tesserae had become detached from the bedding (*nucleus*), the disintegrated bedding was removed and replaced with a new one. The cubes were desalinated and re-fixed. Fortunately, the original tesserae were preserved in all the damaged sections and there was no need to fill losses with newly made cubes. The final step was to reinstall the repaired steel-mesh panels and cover them with pebbles to form a background for the mosaics.

The inspection also revealed the devastation of the shelter roof. Some sections of the corrugated steel sheets, especially in the western end, and even the gutters were forcibly detached from the roof trusses. The damaged roofing elements were rectified and bolted to the rafters in their original positions (Zygmunt Nawrot was responsible for this work).

The newly excavated mosaics (in rooms FA-9 and FA-10) were provisionally protected following the most common *in situ* procedure. The fragments were thoroughly cleaned, some loose tesserae were refixed and the edges were secured with a lime mortar edging. Then, both floor fragments were covered with fleece, which acts as a permeable protection, and covered with a layer of pure sand, approximately 0.20 m thick.

MAINTENANCE WORK

One of the critical issues, severely affecting the results of conservation work, is mechanical damage. It is the result of natural wear and tear due to high visitor numbers, but also unfortunate and unavoidable acts of vandalism. Necessary repairs had to be undertaken in the ancient monuments and the modern tourist infrastructure throughout the site. The expedition repaired damaged protective barriers along the visitor's path and refixed steel posts in position, mending the severed steel cords.

New signage was introduced in several locations in order to upgrade site presentation: next to the early Roman houses in Sector F, and close to the cisterns. Preparations were also made for a continued development of visitors routes within the Archaeological Park on Kom el-Dikka.

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