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Title: **Alexandria. Excavations and preservation work on Kom el-Dikka. Preliminary report 2009/2010**

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Keywords: Alexandria, Islamic glazed wares, Late Antiquity, auditoria, bath cellar, mosaic, conservation

ALEXANDRIA
EXCAVATIONS AND PRESERVATION WORK ON KOM EL-DIKKA, PRELIMINARY REPORT 2009/2010

Grzegorz Majcherek
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Abstract: Fieldwork in the 2009/2010 season encompassed the central part of the site, continuing the exploration of a large dump of urban refuse and ashes from the 4th–7th centuries AD. In the adjacent Late Roman bath, an entrance to the cellars underlying the whole complex was discovered and the bath palestra were investigated. The chronology of the recently excavated academic complex was appraised as a result of further testing in the area. Preservation work concerned various areas of the site, focusing mainly on architectural conservation in the bath, domestic quarter and the auditoria. The most challenging operation was an overhaul of the mosaic shelter (Villa of the Birds), which included treatment of mosaic floors, as well as new drainage and ventilation systems, anti-damp insulation and roof renovation.

Keywords: Alexandria, Islamic glazed wares, Late Antiquity, auditoria, bath cellar, mosaic, conservation

Fieldwork continued with varied intensity throughout the year from September 2009 until June 2010; a busy agenda encompassed many tasks covering both conservation and archaeology. With the approaching conclusion of the first stage of the Kom el-Dikka Preservation Project (in the southern zone of the site), activities were conditioned to a large extent by the requirements of this project. Work in the bath complex and the mosaic shelter (Villa of the Birds) was accorded top priority. Archaeological excavations were focused on continuing research in the central part of the site and in the auditoria complex, while the conservation effort concentrated on the mosaic floors. Throughout the season the mission offered basic field training for 10 junior members of the SCA staff.

The second part of the season (July–October 2010) was devoted to documentation and studies, concentrating on early Islamic material. Anthropological research on skeletal material from the early Islamic necropolis was continued by Robert Mahler (PCMA). Małgorzata Redlak (National Museum in Warsaw), proceeded with the study, aimed at publication of the assemblage, of a vast collection of early Islamic glazed ceramics from the site. Assisted by Karolina Górka, she documented and studied a large group

of pottery fragments (over 500 examples) representing Egyptian-made, Mamluk-age (mostly 14th–15th century AD) imitations of Chinese celadon wares [***Fig. 1***, top right]. The ware was decorated with incised motifs (rosettes, stars and festoons), covered with a characteristic transparent or opaque greenish-turquoise glaze. Two other assemblages of pottery of Western origin were also examined; the resultant studies were submitted in fulfillment of requirements for MA degrees at the University of Warsaw. One of these was a sizeable collection of ceramics imported from Ifrikiyya (examined by Anna Zawadzińska). Apart from some Aghlabid, Raqada-type wares [***Fig. 1***, top left], most of the recorded sherds making up this group were dated to the reign of the Hafsid dynasty (AD 1228–1574) [***Fig. 1***, bottom left]. The other was an equally substantial collection of potsherds of Hispano-Moresque lusterware [***Fig. 1***, bottom right] (studied by Jakub Brochocki).

Team

Dates of work: 1 September 2009–31 October 2010

Director: Dr. Grzegorz Majcherek, archaeologist (PCMA)

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Conservators: Ewa Parandowska (National Museum in Warsaw), Joanna Lis (National Museum in Warsaw), Zygmunt Nawrot (PCMA), Szymon Gąsienica-Sieczka (freelance)

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Documentalist: Kalina Juszczyk (freelance)

Student-trainees: Katarzyna Kapiec, Agata Smilgin, Karolina Górka, Jakub Brochocki, Anna Zawadzińska (Institute of Archaeology, University of Warsaw)

Acknowledgments

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Fig. 1. Early Islamic wares from the Kom el-Dikka excavations: top right, Chinese celadon ware imitations, Mamluk period (14th–15th century); bottom right, Hispano-Moresque luster-ware (14th–15th century); top left, Raqada ware (9th–10th century); Hafsid glazed ware (13th–15th century) (Photos M. Redlak, A. Zawadzińska, J. Brochocki)

Fig. 2. Statue fragment of green serpentinite (Photo E. Kulicka)

ARCHAEOLOGICAL WORK

Current fieldwork was a continuation of excavations in the different areas, designed to define the character and extent of the discovered archaeological remains.

AREA G

The large dump located in the centre of the site (areas F and G) was tested in seasons 2005 through 2009, establishing its general chronological framework. At the core of the dump there were thick layers of ashes alternating with architectural debris from the nearby imperial bath (Majcherek 2011: 39–42; 2012: 27–28). Some more general urban refuse that cannot be ascribed to any particular building in the vicinity was also recognized. In 2010, a section of the dump approximately 21 m by 8 m in the northern part of the area adjacent to the southern portico of the building of the bath was excavated. The layers excavated this season ranged from the 5th to the 7th centuries AD. The upper layers in this section had been explored already in 2008, uncovering 42 graves from the early Islamic cemetery dated to the 11th–12th centuries AD (referred to as the Upper Necropolis) (Kulicka 2011). Neither the so-called Middle Necropolis (9th–10th cen-turies AD) nor the Lower Necropolis (8th–9th centuries AD) were represented in this area. It seems that it was not until the latest phase that the burial ground expanded eastward covering the entire mound and spreading out to the complexes of the Cistern and Bath. During the earlier phases of the cemetery the graves appear to have been confined to the Theatre Portico and the complex of auditoria.

Artefactual material from the dump consisted mostly of a typical array of amphorae sherds, more or less the same as previously, and some tableware fragments accompanied by a limited number of lamps, glass finds and coins. The bulk of the recorded fragments represent LRA 4 (Gaza type) and Cypro-Cilician LRA 1 vessels. Potsherds of conspicuous Asia Minor LRA 3 (a two-handled version) were also identified. Egyptian pottery was traditionally much less in evidence. Along with LRA 7 vessels, only some fragments of Egyptian Red Slip wares of both A and B groups were noted. Typical forms diagnostic of the 7th century AD: Nile silt LRA 5/6 and Egloff 167, were present in the upper layers.

A group of assorted fragments of broken colored marble, mostly of foreign origin, were of interest here. Proconessian marble was definitely the most common, but tiles made of *lapis Lacedemonius, greco scritto, africano, pavonazzetto, cippolino verde* and Egyptian *porfido rosso*, among others, were also quite numerous. Most of the fragments had been used originally as incrustations (wall revetment). Occasional pieces of architectural decoration (cornices, capitals etc.), usually associated with monumental public buildings, could not be provenanced from any of the older edifices identified in the vicinity. Meriting note is a fragment of statuary made of green serpentinite [***Fig. 2***]. The marble fragments were found scattered mostly in the earlier, 4th century AD layers and their presence could have been associated with several lime kilns discovered in the vicinity (Majcherek 2011: 41–42).

As signaled already, this large mound of urban refuse, stretching as far as the Theatre, had actually started to form

in the 4th century AD as two separate dumps, apparently reflecting directions of deposition originating from two separate locations. In time they converged into one (Majcherek 2011: 38–41). Considering that ashes constituted the core of the two initial heaps, the reason for their distribution was to be sought in a detailed functional analysis of the bath plan.

One entrance to the basement of the bath had been identified in the southeastern corner of the building (Kołątaj 2002: 25). It would have been used for evacuating ashes from the eastern part of the complex (the combustion of reeds, which were the fuel of choice in the baths, produced a large volume of ashes, which had to be evacuated on a daily basis). The *praefurnia* for heating water and air in the hypocaust system in the caldarium and sudatorium located in the west wing of the bath would have had another, more conveniently situated exit. It has been asserted that the southwestern chamber of the underground vaulted structure (the basement of the baths) stretches in a southerly direction, well beyond the line of the other chambers, touching on the huge perimeter wall of the complex (Kołątaj 1992: 61, Plan VI, 5). Indeed, such an entrance was identified on the southern side of the perimeter wall, immediately below thick layers of ashes. The opening not only gave access to the furnaces, but also enabled the evacuation of ashes.

The western entrance occupied almost the whole width (approx. 3.05 m) of the underground chamber located directly below auditorium B [***Fig. 3***]. Previous exploration in this area had shown that the floor level of auditorium B is now substantially lower due to caving in of the original vaulting underneath. The collapse was cleared in the southern part of the chamber, but further exploration was halted due to safety concerns.

Preliminary analysis of the structure indicated that the vaulting was constructed together with the huge southern perimeter wall of the bathhouse and should thus be considered part of the original design. The entrance was found to be flanked by two massive, now heavily weathered, buttresses. Both buttresses, some 1.60 m wide, were built in a technique similar to that employed in the construction of buttresses discovered further to the east (area F). A floor level was cleared some 1.70 m below the preserved keystone (the vault is now substantially disintegrated). Made of battered ashes and tamped soil reinforced with lime mortar, the floor attained extraordinary hardness. The most unusual feature, however, was uncovered in front of the entrance. It was a wide, sloping ramp, turning slightly to the left (i.e., to the east) and leading up to the south portico of the bath. While the section next to the entryway had only a tamped-soil floor, the midsection was reinforced with large limestone pavers, and in the top section (on near-ground level) several stone-made steps were cleared [***Fig. 3***, top]. The chronological and stratigraphical context of the ramp is yet to be resolved. While it appears that the entrance itself was part of the bath's original design, it is obvious that the sloping ramp is of a substantially later date. Even taking into consideration the apparent subsiding of the vault, the cleared floor is definitely too high (approximately 1.70 m below the preserved keystone) to be original. Secondly, its side walls, made of reused large blocks, were placed against a thick stratum of accumulated ashes. Two small lateral pillars, reducing the original width of the

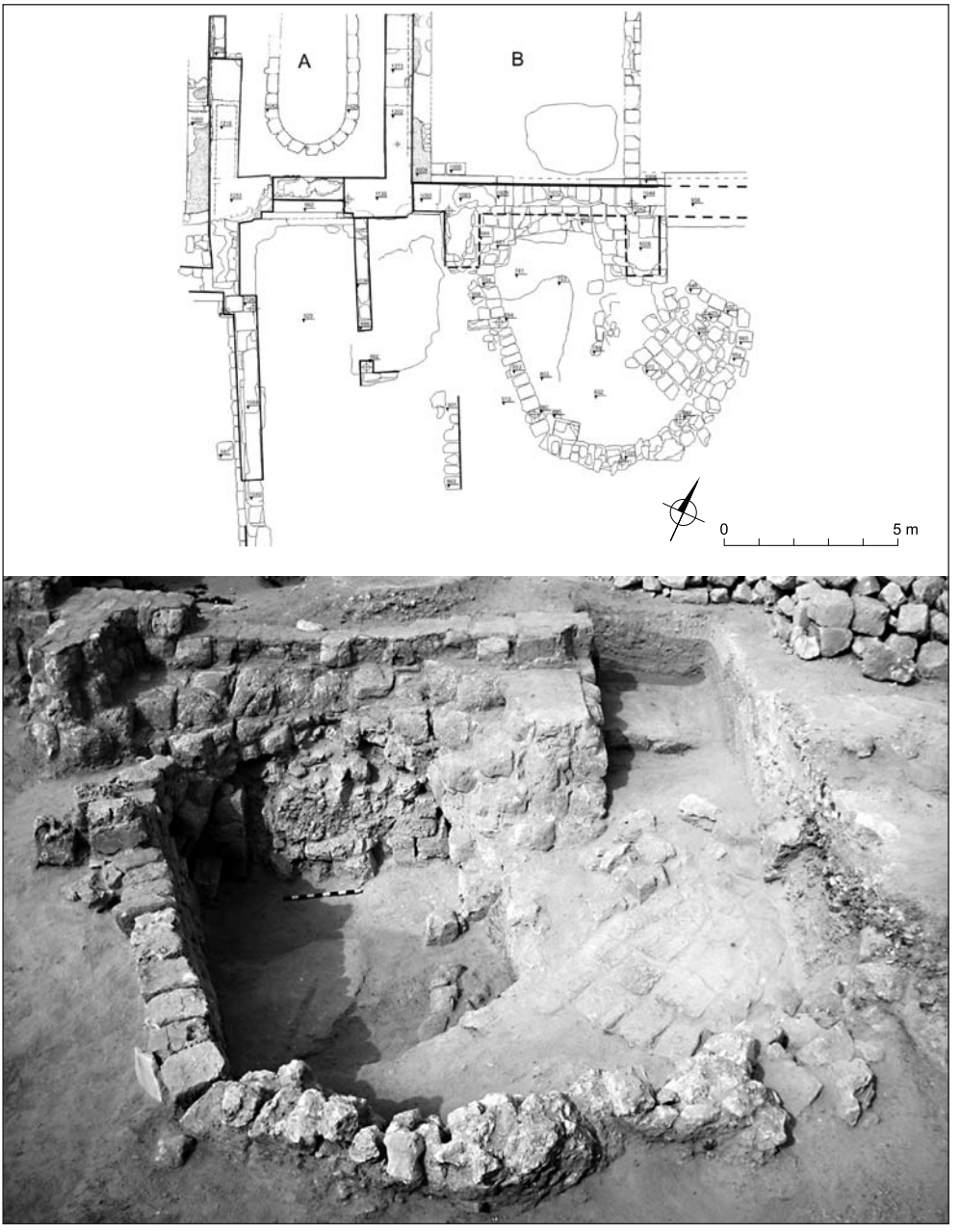

Fig. 3. Western entrance to the basement of the bath: localization plan (top) and view looking north including the ramp (Drawing K. Kamiński, J. Dobrowolski, updated 2010 G. Karpińska; photo E. Kulicka)

entrance, rest on the tamped floor and were therefore a later addition. The general direction of the ramp implies the presence of an additional door in the perimeter wall, next to auditorium B. To conclude, the ramp must have been formed following the transformation of nearby halls A and C into auditoria (late 5th–early 6th century AD); its construction cancelled out the original access to the bath basement. On the other hand, it is quite obvious that the original floor level of the basement could be found underneath.

A substantial part of the massive perimeter wall of the bathhouse (approximately 1.60 m thick) was cleared further to the east. The preserved section (together with the entrance) is some 7 m long. A further part of the wall was dismantled in the Fatimid–Early Mamluk period, apparently during a massive operation of extracting building material.

AREA Q

The presumed palaestra was cleared to the east of the entrance to the basement. The large rectangular unit (27 m by 8 m) was accessible from the southern passage of the bath through a six-columned portico. A row of columns (two or three at the most) was also designed along its eastern side. The columns were shorter apparently, so to compensate for this they were raised on a high pedestal wall (1.10 m above the level of the portico). A column of green Karystos marble (*cippolino*) found nearby was re-erected in its original place. The position and dimensions of this wall excluded direct communication with rooms, identified as the apodyteria, located further east. From the south, the palaestra was closed by the huge outer wall of the baths, which was about 0.90 m thick and originally some 6 or 7 m high (i.e., taller than the columns of the portico), practically blocking the adjacent

Fig. 4. Oven in area Q
(Photo G. Majcherek)

dump from view. The wall, or rather what was left of it, was previously discovered during excavations in adjacent area F. Like other sections of the wall, it was built as a pillar structure, with pillars made of large, regular ashlars, the space between them filled with an *opus caementicium* construction set in ashy mortar and lined with small, dressed stones. The wall suffered heavily from stone-robbing activities, mostly in the Mamluk period, as evidenced by pottery recovered from the fill.

The palaestra was found to have undergone a series of transformations similar to those identified in the main building of the bath and its architectural history followed the phasing established for the whole complex. Originally, it was used on a level corresponding with that of the southern bath portico, although no original paving was preserved there. A higher level, however, produced a series of metalled floors, usually reinforced with lime, crushed bricks and pottery. It apparently lost its original function. A large brick-masonry kitchen oven occupied the middle of the area [***Fig. 4***]; similar ovens were previously cleared in the vicinity (Rodziewicz 1984: 278–279, Figs 295–296). It seems that towards Late Antiquity the entire area gained a new, service function, catering to bathers' needs. Still later the whole area was backfilled, substantially raised and repaved with reused pavers [***Fig. 5***]. However, the purpose of this refurbishment remains unclear. The chronology of this latest phase

Fig. 5. Late pavement in area Q (Photo E. Kulicka)

is not thoroughly convincing, but it seems probable that it could still be related to the bath's final phase of occupation, apparently ending at the time of the Persian invasion (AD 618–629).

AREA H

Additional testing in the area of the academic complex (set of auditoria) located along the Theatre Portico was aimed at verifying its chronology (Majcherek 2007). Two trenches were dug immediately east of the back wall of the auditoria. Trench L-east was traced in a corner formed by the wall of auditorium L and a wall running east for 18 m, where it joined another sustaining wall running north–south towards the later auditorium A. This east–west wall seemingly functioned at the same time as the perimeter wall of the theatre building. It was structured in the typical pillar technique with sections made of assorted small stones, reinforced by regularly set pillars built of large ashlars. The construction date is yet to be established, but its overall context and relation to other structures may point to a period coinciding with the final refurbishment of the Theatre, which is usually put at the beginning of the 6th century AD.

In a later phase, the wall was raised using large blocks cut from a thick brick-made wall, apparently extracted from a water tank, as evidenced by waterproof plastering and some calcite scaling preserved on their surface. The nearby cistern or bath were the most likely source of these blocks.

As in auditorium K (Majcherek 2012: 37–38), the back wall of auditorium L was raised of large ashlars arranged in isodomic courses (some 0.50–0.60 m thick). The rear of the wall has no facing and it was obviously built in a narrow trench, most probably in order to counteract the thrust of the mound of rubbish and ashes accumulated behind it. Substantial inward tilting confirms this function. To stabilize the whole structure an additional buttress was built in its midsection. The peculiar form of the wall corroborates its relatively late 5th–early 6th century AD date, by which time a large dump of urban refuse had formed behind it.

The other trench, H-east, dug in the corner formed by auditoria F and H, produced similar stratigraphical and chronological results. The east wall of auditorium H (structured in the pillar technique) was built in a deep trench, cutting through the thick deposits of urban refuse and ashes [***Fig. 6,*** bottom]. Finds from layers predating the cut pointed to a rather surprisingly late date (6th century AD) for the construction of the wall [***Fig. 6,*** top]. This may seem to collide with earlier findings concerning other auditoria and calls for a substantial chronological reappraisal. However, the footing of the wall foundation was placed level with the floor in auditorium H and as such could not have been part of the original design, but rather a later rebuilding or adaptation. The south wall of auditorium F, structured in the typical pillar technique, was also built on top of a huge, earlier construction. Although found in a very deep trench, its surface appeared to be heavily weathered — clear evidence of prolonged exposure. This heavily buttressed wall, made of large ashlars, shares the technique, mortar type, size of ashlars and other features with other structures of apparently earlier date preserved in the vicinity, such as the walls dividing auditoria F and G, and auditoria A and B, as well as the huge perimeter wall at the southern limit of the bath complex

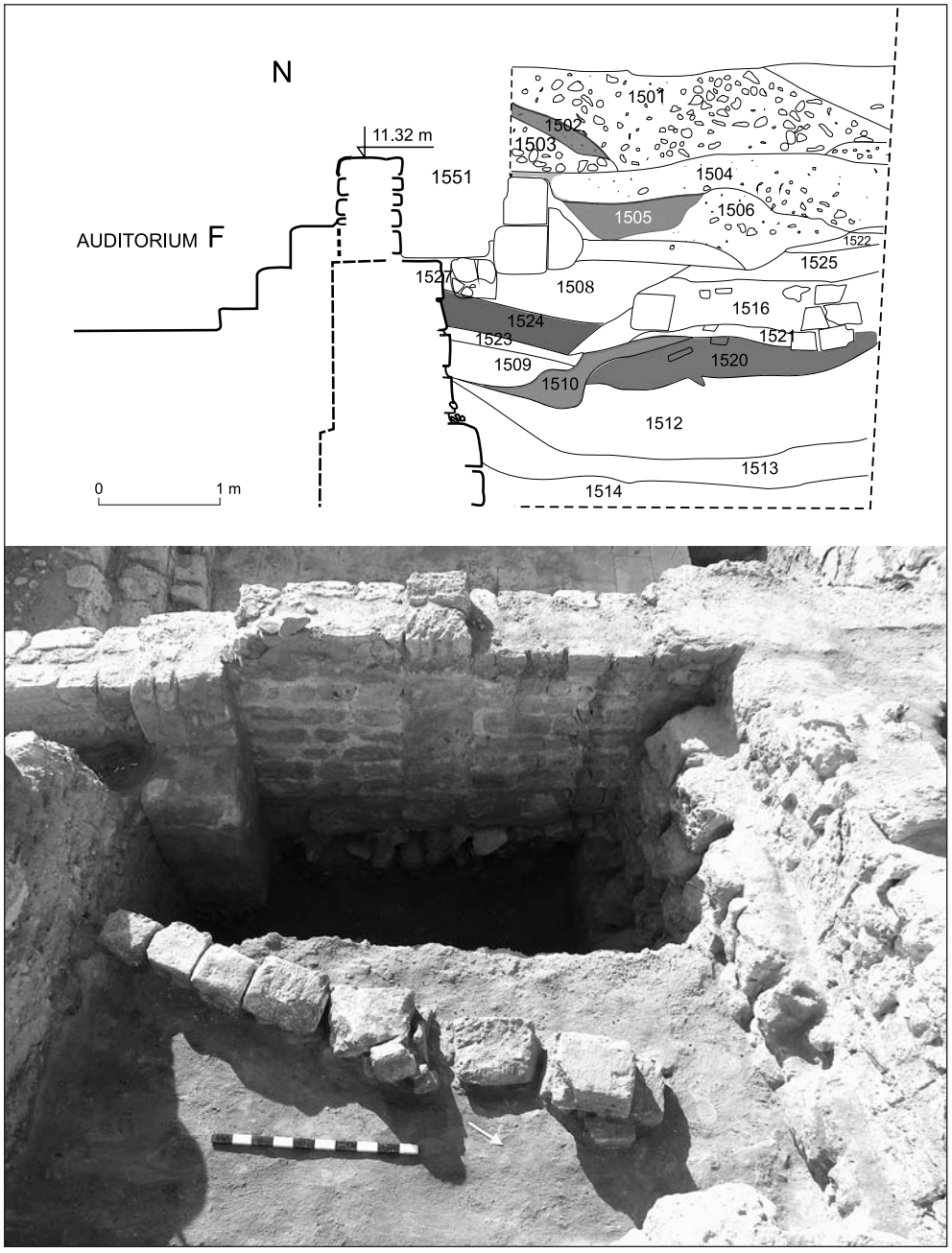

Fig. 6. Trench H-east. Section, east trench wall (top); view of east wall of auditorium H from the west (Drawing K. Lach, A. Smilgin; photo Ł. Wojnarowicz)

cleared in areas G and F. Obviously, it had once been the southern wall of a large *forica* discovered last season below auditoria C–F, forming a rectangular building measuring approximately 19 m by 13.50 m, with waste channels running along its sides. The scale could be compared with two other latrines discovered formerly on the western side of the bath complex (Rodziewicz 1984). The building layout and the water supply and sewage systems have yet to be identified. Given the sheer size of the latrine, it should have been flushed with water flowing from the bath.

With this discovery it is now possible to reconstruct the original layout of this part of the civic center. The large latrine on the south side of the passage to the bath seems to have been the only substantial building occupying this part of the site in the first phase of its development, that is, in the late 4th–late 5th century AD.

AREA AS

During the first phase of excavations in this area, several largely disturbed early Islamic graves, both stone structures and simple internments (Lower Necropolis, graves AS 320–340), were explored [***Fig. 7***]. The skeletal material, although seriously deteriorated, was duly stored, to be examined in due course by an anthropologist.

Exploration in this area resulted in establishing a clear phasing of occupation and intervening rebuilding and/or remodeling. The original phase of auditorium OP (late 4th–early 5th century AD) appears to have been predated by some other structures [***Fig. 8***], the function of which are difficult to appraise. The original hall O was only 4.50–4.65 m wide, in similarity to other auditoria (32a, N, T) in the northern wing of the complex, and, in all probability, used in the same capacity. Various minor alterations and a sequence of floors added over time were identified during excavations. The hall was apparently built following some large-scale catastrophe. After this disaster, the eastern face of the huge back wall of the portico was dismantled and the whole wall "thinned" to a mere 0.90 m from its original 1.55 m width. The eastern wall of hall O was built in a combined technique. Some destroyed sections showed signs of having been constructed in typical *opus africanum* (pillar) technique, while, surprisingly enough, the mid-part made use of a huge east–west wall (1.10 m wide) running at right angle. Only a small section of it has been preserved in the eastern part of the hall, while its huge foundations (some 1.55 m wide) were cleared next to the massive back wall of the portico.

Foundations were built of large ashlars (approximately 0.50–0.60 m in length), set in lime mortar. That our wall was a later addition to the overall design is clearly evidenced by a deep cut preserved on the eastern face of the portico's back wall [***Fig. 9***]. The cut was apparently made to anchor the later wall to the structure of the portico. The purpose of this wall remained unclear, but it may have been a leftover from some unknown urban design that was abandoned and subsequently demolished in the 5th century AD. Two more sections of the same wall were discovered previously in deep trenches, further east of this auditorium (Rodziewicz 1991).

The *quo ante* date is provided by finds from the superimposed layers. Pottery finds, although rather limited in number, included a typical repertory proper for late 4th–early 5th century AD

Fig. 7. Graves of the Lower Necropolis in area AS (Photo A.M. Kotarba-Morley)

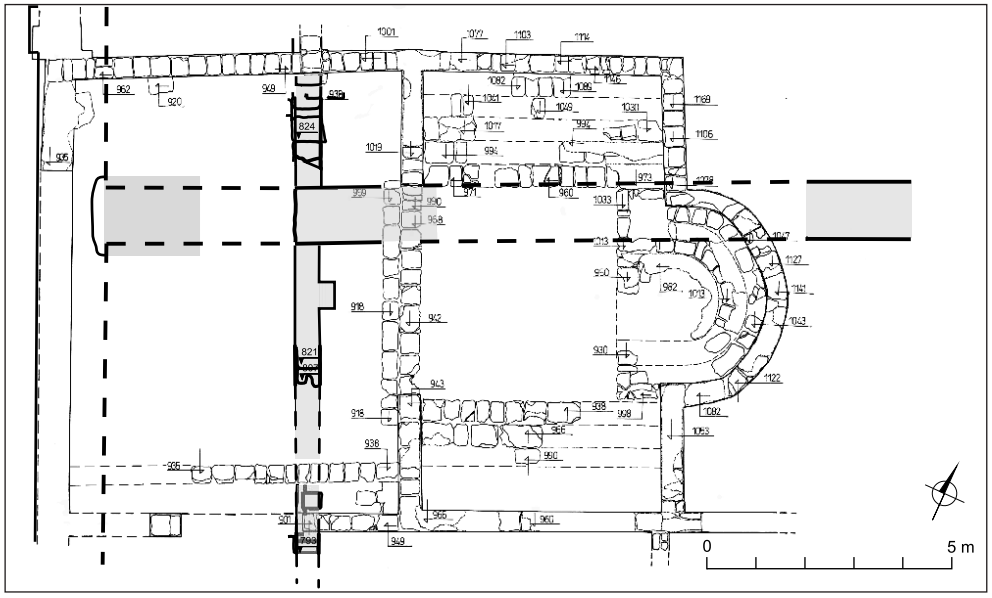

Fig. 8. Structures predating auditorium OP marked in gray (Drawing K. Błaszczyk, G. Karpińska, G. Majcherek)

Fig. 9. Abutment of the east–west wall and the portico back wall (Photo A. Smilgin)

Alexandria: some ERSA and ERSB bowls and a variety of Egyptian and imported amphorae. Later on, somewhere in the 6th century AD, auditorium OP (and adjacent auditorium RS) was enlarged, totally reoriented and completed with an apse pointing east. The wall dividing auditoria O and P, was dismantled down to its foundations and a new wall was built further east, thus creating a new, larger hall about 6.50 m wide, equipped with single benches along its south and north walls. These changes reflected a general transformation that occurred in the entire northern part of the complex, but the precise reason for it is unknown. The new design of the auditorium, so closely recalling that of contemporaneous churches, might be related to its new function.

PRESERVATION WORK

The most challenging operation undertaken this season was the overhaul of the mosaic shelter (Villa of the Birds). The shelter was built in 2000 within the framework of the Mosaic Preservation Project under an US AID Grant (Kołątaj, Majcherek, Parandowska 2007) following state-of-the-art conservation theory and practice aimed at *in situ* preservation of mosaic floors and display of the whole assemblage within the original architectural context. This approach provided a rare example of successful *in situ* mosaic conservation, but it also led to unexpected problems. Ten years into its operation, environmental threats coupled with negligence and poor daily maintenance resulted in the shelter, visited yearly by large numbers of tourists, being in dire need of repairs.

Immediate intervention was required on the roof cladding, draining system, doors and windows, but the most serious threat was identified as water seepage. The mosaics exhibited in the shelter are located some 1.20 m below present ground level. Water penetration (surface run-off from the escarpment and seepage from faulty piping in nearby Fire Brigade buildings, as well as a relatively high water table) and ensuing humidity had affected the microclimate inside the shelter. To prevent further mosaic deterioration it was found essential to introduce comprehensive anti-damp insulation of the foundations and to redesign the building drainage system.

The foundations of the east wall of the shelter, which made use of a Late Roman wall, were cleared down to the footing

along the entire length of the wall (approximately 16 m). The deteriorated wall structure was repaired, missing or deteriorated blocks being replaced with new ones and the whole foundation consolidated with new mortar. The top and side surfaces of the foundations were rendered and waterproofed with pitch coating [***Fig. 10***]. Additional waterproof coating of double-folded polyethylene insulation sheets was applied for more effective anti-damp protection. To prevent further water penetration, the wall coping was consolidated and reshaped with a slight fall towards the outside.

Fig. 10. Consolidated foundations and rainwater drainage of the east wall of the mosaic shelter (Photo J. Brochocki)

Fig. 11. Redesigned drainage system, plan and section (opposite page) and view of the southeastern corner of the shelter with the new drainage in place (top) (Drawing Z. Nawrot, M. Polak; photo G. Majcherek)

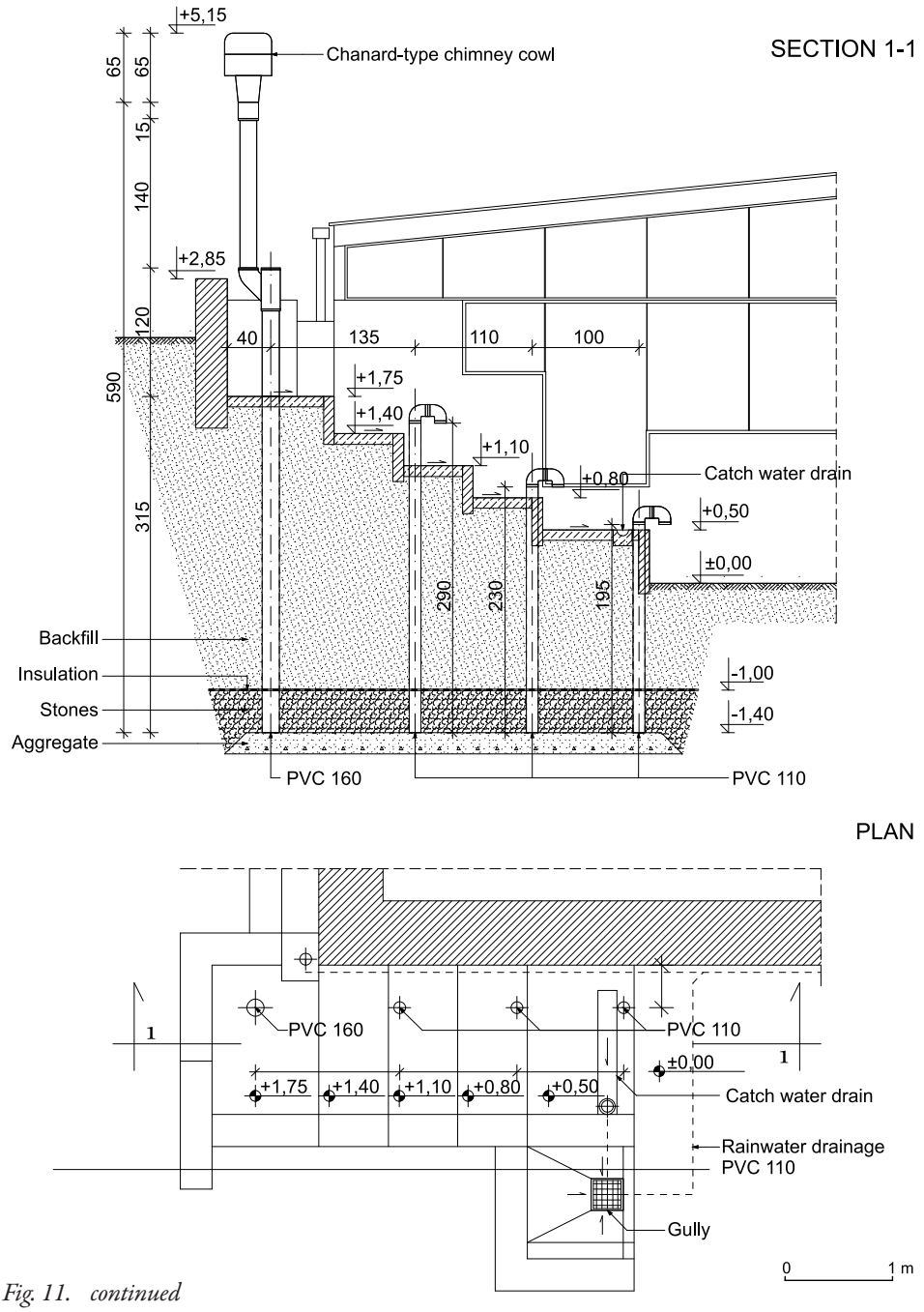

Fig. 11. continued

The faulty rainwater disposal system was redesigned to collect rainwater from both roof slopes and to drain it off to a nearby ancient well [***Fig. 11***]. The gutters were either remodeled or new ones, shaped of squared sheet iron, introduced along the eaves of the roof. New downspouts (PVC Ø 100 mm) were installed at the eastern ends of both gutters. The downpipes discharged into the main drain (PVC Ø 100 mm) buried along the east wall, emptying into an ancient well located north of the shelter. The installation took into account Alexandrian climate, being designed to cope with frequent copious winter downpours.

An additional drying installation was introduced in the southeastern corner of the shelter, which is the part of the structure that is the most liable to water seepage and hence most endangered [see ***Fig. 11***]. As in other locations along the eastern elevation, the foundations were first consolidated and pitched. Then, the trench was filled with aggregate and gravel. Ventilation shafts of PVC pipes of varying length, corresponding to the rise of the ground, were installed vertically at 1.00–1.30 m intervals. The largest shaft (PVC Ø 150 mm, 5.15 m long) was positioned in the corner and was topped with a turbovent-rotary chimney cowl (Chanard-type). Considerable differences of atmospheric pressure have made the installation extremely effective in removing damp from the lowermost part of the foundations.

The adjacent section of the escarpment was reshaped into a series of cascading terraces designed to slow down slope erosion and minimize water infiltration. A side drain leading to a gully was installed by the lowermost terrace. The gully was then connected with the main PVC drain running along the east wall.

Monitoring relative humidity, temperature and dew point with a Comet logger S3120 electronic device installed in the shelter in 2009 (precision measurements every 30 minutes) demonstrated that the main cause of dampness (apart from water penetration) was the high level of condensation. To secure effective air change a high-performance industrial ventilator was installed (ventilation rate: 1 air change per hour). The fan and fresh air inlet was mounted on the north wall of the shelter, immediately below the roof eaves. The improved ventilation system had a positive effect on the microclimate in the shelter and should be enhanced even more by the introduction of a breathable pitch roof underlay insulation, which is planned for the next year.

The mosaics were likewise consolidated. Conservation *in situ* carried out in the late 1990s in accordance with the premises of the Villa of the Birds Conservation Project had not anticipated certain problems. The draining system installed at the time proved insufficient to secure a stable environment; seasonal and daily variations of temperature and humidity caused salt precipitation and rapid deterioration of the multi-colored tesserae (both marble and glass ones) and lime mortar bedding. Two of the most endangered mosaics were treated this season. The central emblema (21 cm by 22 cm) of mosaic *α-6* ("Panther mosaic") was detached and consolidated [***Fig. 12***, left]; some disintegrated glass and faience tesserae were removed and replaced with new ones. Losses were likewise completed with ancient cubes retrieved during excavations. A new layer of limestone mortar with ground marble filler and acrylic resin Plextol B 500 was applied on the backing. The emblema was

then relaid on an aluminium honeycomb panel (2.5 cm thick), the support fixed with ARALDITE and reinstated. Mosaic α-5 ("Mosaic with Birds") was treated likewise [***Fig. 12,*** right]. The surface was thoroughly cleaned and salt efflorescence removed mechanically. Some loose tesserae were fixed, decayed lime mortar and voids under the tesserae treated by injecting new mortar and the edges of the mosaic repaired. Mosaic α-3 (combining *opus tesselatum* and *opus sectile* techniques) was also secured. Its surface was cleaned and damaged sections of edges fixed. Conservation of the mosaics will be continued next season.

Conservation operations were also carried out in the Late Roman domestic quarter (area W_1N) east of street R4. This area had been excavated in the 1990s and since then the architecture has undergone gradual conservation, focusing foremost on the fabric of the extant ancient walls. This season the walls of buildings H and G, mostly damaged or dismantled already in antiquity, were thoroughly consolidated or rebuilt. The most essential operation was the restoration of the walls of the eastern wing of house G. Most of these walls were preserved as foundations or as post-robbing trenches. Limited restoration not only secured the original substance of the structures, but also made the ancient structure more legible to potential visitors.

The south and east walls of room G18 were restored (altogether a stretch of 9.5 m) and the south walls of rooms G15 and G14a were also rebuilt. The restoration stopped one course above ground level as the excavation did not record the location of doors [***Fig. 13***, far back]. Most of the original walls (as evidenced by the extant sections) were structured in the pillar technique with a large block made of pillars set at regular intervals and the space between them filled with smaller assorted stones. In building H conservation was limited to the consolidation and partial restoration of the southern elevation [***Fig. 13***, top]. A large section of the wall (approximately 14 m long, 0.45–0.50 m thick) enclosing the southern wing of house H was restored to a height of approximately 1.10–1.30 m. Here the wall was structured in regular masonry with large ashlars set in isodomic courses. The restored wall courses were separated from the original masonry with a layer of bitumen tar paper, acting as both

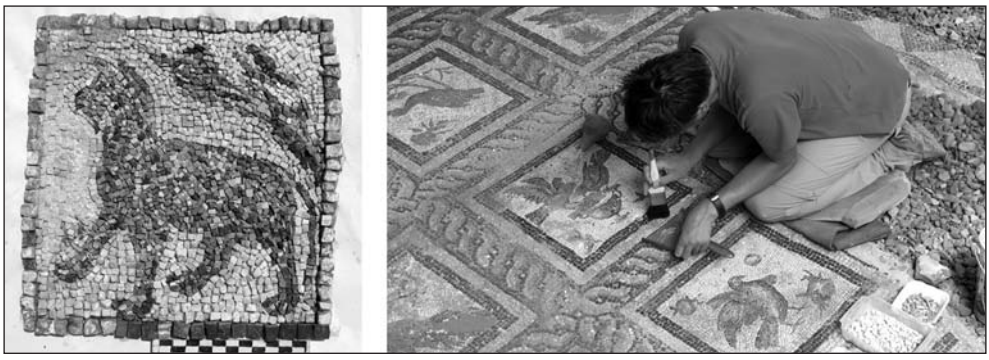

Fig. 12. Conservation of mosaics: detached emblema during conservation (left) and work on the mosaic floor (Photos G. Majcherek)

anti-damp insulation and a recognizable border between the original fabric and modern additions. Ancient blocks found during excavations were used for the reconstruction in accordance with procedures previously established at the site (properly seasoned modern stone was not available).

A narrow east–west lane (perpendicular to street R4) dividing houses G and H was re-arranged to prepare the area for public display [see ***Fig. 13***]. The operation included backfilling of some post-excavation trenches and surface leveling. A city sewer of Late Roman date running along the lane was also subjected to limited conservation. Several sections along the southern elevation of house H were consolidated and a manhole giving access to the sewer was partly restored. The manhole coping was rebuilt and made flush with the street level to secure safe traffic for visitors.

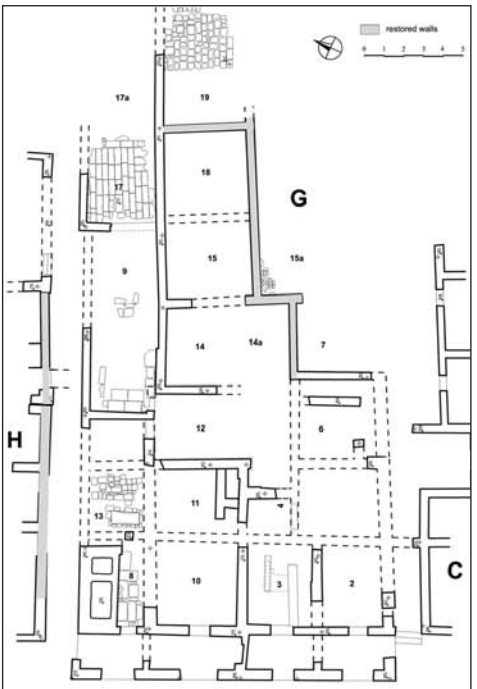

Fig. 13. Houses G and H, following wall restoration in 2010, looking east; top, plan of the area, restored walls marked in gray (Drawing K. Karpińska; photo G. Majcherek)

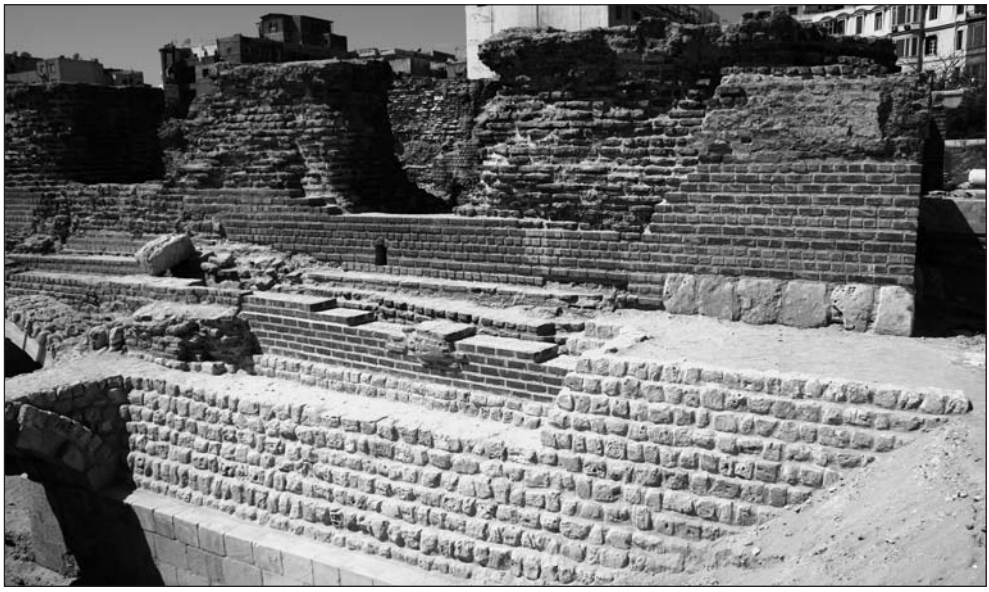

Fig. 14. Restored channel in the southeastern corner of the bath (Photo A. Pisarzewski)

Fig. 15. Mosaics protected in area F (House FB) (Photo R. Mahler)

In the bath area, a modern stairway down into the cellar continued to be constructed; three steps were done out of the planned seven. A fragment of a channel running along the southern elevation of the bath was restored instead [***Fig. 14***] The channel was originally designed to drain waste water from tubs and basins located there. Built of red bricks, it was lined with waterproof mortar and covered with unusually large limestone blocks. The channel was sunk in a pavement of assorted fragmentary slabs of marble and nummulithic limestone. Conservation procedures involved not only consolidation and partial restoration, but also re-integration of some loose wall fragments found *sub situ*.

Current maintenance preservation included, as usual, multiple locations and issues, ranging from basic procedures applied to wall fabric (tapping and grouting) to more elaborate ones, like stone replacement and shaping the wall coping. Measures were also taken to protect a fragmentary black-and-white mosaic with a geometric design discovered in house FB (Majcherek 1999), which was threatened by continuous heavy rains and vegetation. To preserve the integrity of the mosaic and to shield it from rainwater, the mosaic was protected with a specially built wooden casing [***Fig. 15***] and covered with a thick (0.15–0.20 m) protective layer of clean sand.

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