

# Grzegorz Majcherek

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## Alexandria: Kom El-Dikka Excavations and Preservation Work : Preliminary Report 2007

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# ALEXANDRIA: KOM EL-DIKKA EXCAVATIONS AND PRESERVATION WORK PRELIMINARY REPORT 2007/2008

Grzegorz Majcherek

Polish Centre of Mediterranean Archaeology, University of Warsaw

**Abstract:** Excavations by the PCMA's Polish–Egyptian team in Alexandria focused once again on the central part of the Kom el-Dikka site. One area of explorations covered a sizable section of the Ayyubid–Mamluk cemetery, which has been investigated extensively in the most recent seasons. In an adjacent sector of the site, digging continued on a huge mound of ashes and typical everyday refuse, located to the south of the Imperial bath complex from whence most of this rubbish had issued. The underlying layers contained more of the ruins of an extensive early Roman house, including a floor mosaic with geometric decoration.

Work within the frame of the long-term conservation project implemented by the PCMA covered primarily the conservation and partial restoration of the southern brick façade of the bath complex. Sections of the vaulted subterranean structure and hypocaust cellars found in the basement of the baths were also rebuilt. Preservation treatment was undertaken in the *apodyterium*. Other areas where conservation measures were taken as required included the cistern complex accompanying the baths.

**Keywords:** Alexandria, late antiquity, Roman houses, mosaics, Late Roman bath, conservation

Considerable progress was made toward completion of the adopted preservation program and continuation of research on Early Roman domestic architecture in the course of the reported season, which ran from mid-September 2007 to the end of August 2008. Intensive excavations were carried out in the central area of the site, following the removal of nearly

3500 cubic meters of culturally sterile deposits. Beside the preservation proper, site enhancement and conservation work included essential repairs and cleaning in all of the excavation areas across the site.

Research on a vast collection of Islamic-age finds originating from both former and present excavations was continued, the work being carried out by Dr. Małgorzata Redlak.

## ARCHAEOLOGICAL WORK

**AREA H: ISLAMIC NECROPOLIS**  
A large area, measuring some 30 x 15 m, was excavated, the main objective being to clear the medieval Islamic cemetery

(see also excavation report, Kulicka 2011, in this volume). The western part of the area encompassed a former test pit, dug in 1995, and part of the cemetery partly

cleared and surveyed in 1988 (trench G) (Kiss *et alii* 2000: 35–42). This part of the cemetery was apparently established at the northern edge of a large dump which had covered at the time the ruins of both the theater and cisterns. The said area slopes slightly towards the north at the level of 13.55 to 13.10 m a.s.l.

The area in question turned out to be dotted with apparent robbers' pits of later date, dug to salvage building stone from

the Late Roman structures. These pits and trenches seriously disturbed stratigraphical contexts and damaged many of the burials. Finds from the fill, especially sherds of Mamluk Sgraff and Slip Painted Wares, secured a date for this activity in the 13th–14th century. Altogether some 50 plus graves belonging to the so called Upper phase of the cemetery were explored (G 26–G 42 and H 80–H 114). They were spaced fairly evenly, covering the whole

### Team

*Dates of work:* 1 September 2007–31 August 2008

*Directors:* Dr. Grzegorz Majcherek, archaeologist (PCMA)

*Deputy director:* Renata Kucharczyk, archaeologist and glass specialist (PCMA)

*SCA Representatives:* Amal Hassan Hamid, Ahmed Hashem el Alfi, Bahgat Ibrahim Saleh, Nagah Nas ed-Din, Fahima Ibrahim Nahass

*Archaeologists:* Adam Jegliński (PCMA), Emanuela Kulicka (freelance), Szymon Maślak (PCMA scholarship holder), Iwona Zych (PCMA)

*Anthropologist:* Robert Mahler (PCMA)

*Architects:* Aleksandra Brzozowska (Wrocław University of Technology, PhD candidate), Dr. Wojciech Kołtąj (*emeritus*), Aureliusz Pisarzewski (freelance), Daria Tarara (freelance)

*Restorers:* Joanna Lis (National Museum in Warsaw), Władysław Weker (State Archaeological Museum, Warsaw), Adam Zieliński (Royal Ontario Museum)

*Numismatist:* Prof. Barbara Lichočka (Research Center for Mediterranean Archaeology, Polish Academy of Sciences)

*Documentalists:* Ewa Czyżewska (PCMA), Kalina Juszczyk (Polish Ministry of Education scholarship holder)

*Student-trainee:* Piotr Musiela (Institute of Archaeology, University of Warsaw)

### Acknowledgments

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extent of the excavation trench, although showing no regular pattern [Fig. 1; for the plan, see Fig. 1 on page 55].

Two sub-phases of the cemetery were clearly recognized, but without evidence for a precise dating. As in the case of other, previously excavated areas of the Islamic cemetery, the initial sub-phase consisted of graves made of vertically set limestone slabs forming a sort of box (H 1–10). In these cases, the burials usually took the form of single interments. Some of the graves were seriously damaged by later burials. Graves of the next sub-phase were also found to be seriously damaged. Most of them had lost their superstructures. The two exceptions,

H 93 and H 91, the latter still retaining some of its original plasterwork [Fig. 2; see also Fig. 2, right, on page 56], were found to be enclosed together with H 90 within a rectangular stone wall enclosure, of which only the lower courses have been preserved. The enclosure, measuring some 5.50 x 4.80 m, was equipped with a small *mibrab* in the southeastern wall [see Fig. 3 on page 56]. Similar structures enclosing several neighboring graves, interpreted as family tombs, were previously recognized also in other areas of the cemetery (Majcherek, Kołataj 2003: 21).

All the excavated graves were traditionally oriented SW–NE, according to



Fig. 1. General view of the excavated Islamic burial ground in Area H, looking north (Photo G. Majcherek)

the Muslim rite, the bodies buried to face the *qibla*. The skeletal material was as a rule rather poorly preserved (a report on the anthropological examination of the remains by Robert Mahler is forthcoming).

Exploration of the layer corresponding to the cemetery and immediately covering it yielded the usual array of finds, but no funerary steles. An extensive collection of ceramics represented production centers from practically all over the Mediterranean area, especially the Aegean and Cyprus. Sherds of local manufacture included both monochromatic and multicolored Egyptian glazed wares (Fayyumi) and several fragments of Ayyubid Underglaze Painted Ware. A considerable variety of Mamluk Sgraff and Slip painted wares was also recorded. Occasional examples of Chinese

Celadon ware should also be mentioned. The glass assemblage included two stamped glass weights of Abbasid/Ayyubid date (nos 5195, 5201) and numerous Early Islamic glass vessels (reported in this volume, Kucharczyk 2011: 58ff.).

#### AREA F

Trench supervisors: A. Jegliński, S. Maślak

Exploration of the central area of the site confirmed that, starting from the 4th century, the urban ruins there were turned into a dumping ground for ashes and urban refuse. The dump accumulated very quickly, rising eventually to a height of 4–5 m above the floor level of the baths. A thick stratum of ashes originating from the baths and mixed with rubble formed the core of the mound. On top of the ashy



Fig. 2. Grave H 91 and associated burials in Area H  
(Photo E. Kulicka)

deposits, almost immediately below the present soil level, a rectangular brick-made oven was excavated. It was dated to the late 5th century and is presumed to have served as a kitchen oven. An 11 m long section of wall was located further to the east, approximately 8 m away from and parallel to the western façade of the cistern building. It was aligned north–south and was built in pillar technique with large blocks forming pillars and smaller stones bonded in ashy-lime mortar filling the spaces in between. The preserved height of this wall was approximately 0.40–0.50 m. It could have formed part of a complex of structures (nos 16–18) built in the 5th century next to the cistern façade and used most probably as stables. The deep founding of this wall, however, suggests that it was erected to

contain the thick deposits of ashes rapidly accumulating behind it.

A reassessment of the bath complex chronology was made possible by the finds coming from the dump, including a large group of Late Roman coins and amphorae, which formed an overwhelming part of the recorded ceramics. More than 60% of the total amphora potsherd count was made up of LRA 4 (Gaza type) vessels [Fig. 4:1–3]. This figure compares well with the previously recorded nearly 70% RBH count from the same area. All of the identified fragments belonged to an earlier type-series, LRA 4A, dated to the 4th century AD. Type LRA 1A and its smaller earlier version (LRA 1 A1), produced in Cilicia and Cyprus, formed the second largest group [Fig. 4:4–5]. Other amphorae included



Fig. 3. Oil lamps from the 4th–5th century AD, reg. nos 5205 (left) and 5206 (Photo G. Majcherek)

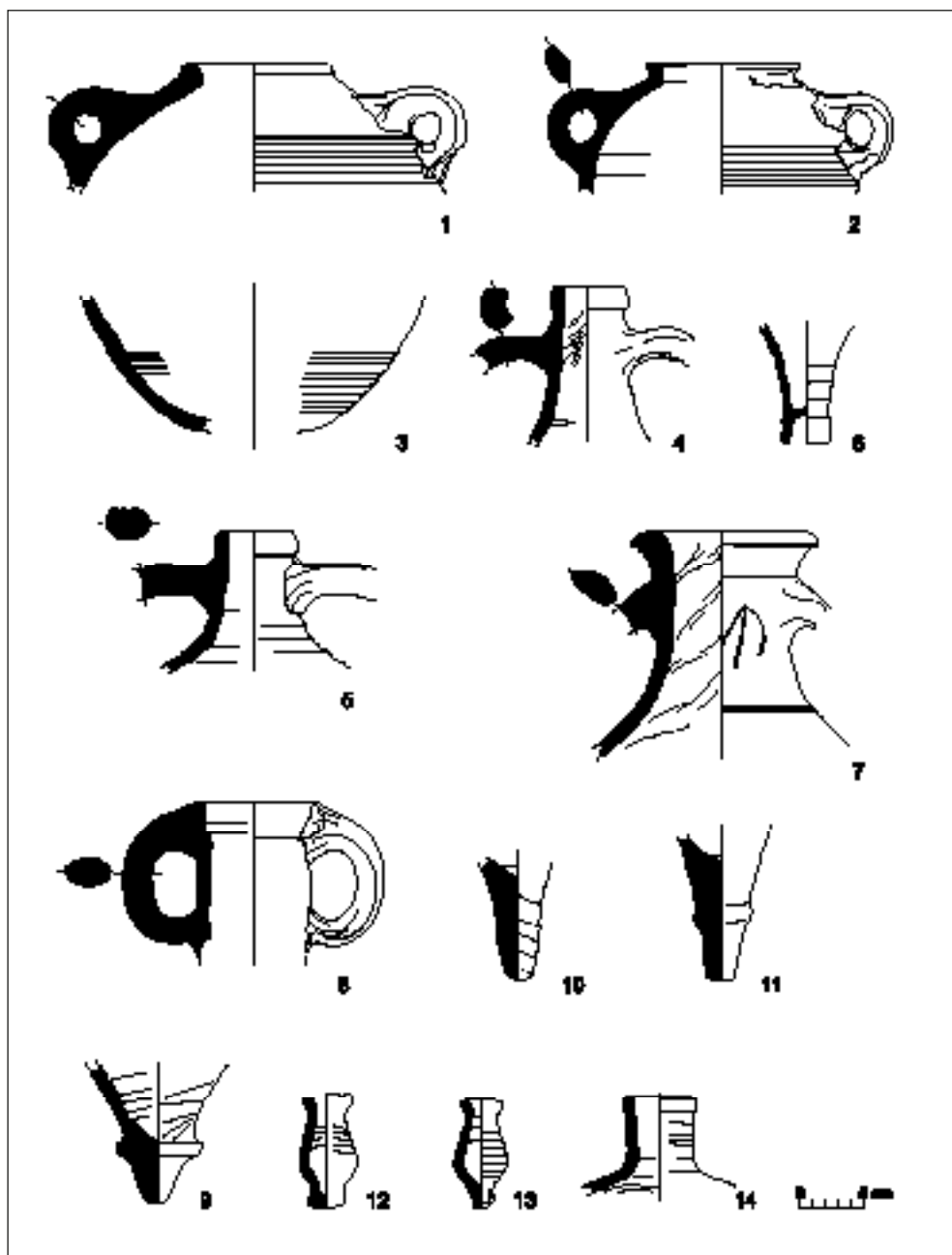


Fig. 4. Selection of pottery finds from Area F  
(Drawing E. Czyżewska, K. Juszczak)

Asia Minor LRA 3 (an earlier, single-handled version) [Fig. 4:6] and quite a number of North African cylindrical containers [Fig. 4:7]. Surprisingly enough, Egyptian vessels appeared in varying proportions. An earlier version of LRA 7 (Kellia forms 177–179) [Fig. 4:10–11] and the ubiquitous Kellia 172 form were present, albeit in rather smaller numbers [Fig. 4:8–9]. As in the last season, a large group of small Egyptian Nile silt-made flasks, most probably serving as stoppers or oil containers [Fig. 4:12–13], was again recorded (more than 200 examples). Of particular interest was a group of small Aswan-made kegs (*siga*), dated to the late

4th–early 5th century AD [Fig. 4:14]. The trench produced few pieces of fine wares: several fragments of Egyptian Red Slip A Ware (Aswan-made) and some fragmentarily preserved bowls of African Red Slip. Several locally-made lamps and their fragments, representing the late 4th–early 5th century horizon were also retrieved [Fig. 3]. Supplementing the ceramic assemblage were glass finds, consistent in form and character to last year’s assemblage, albeit found in far more limited numbers.

Two partly preserved lime kilns, C and D (in addition to two other almost identical kilns discovered further east, see Majcherek 1999a: 45), were



Fig. 5. Lime kiln in Area F, looking south  
(Photo G. Majcherek)



cleared immediately below the thick ash accumulation in the southwestern corner of the trench. Despite heavy damage to the structure, both features could be recognized as round updraft kilns, approximately 1.00–1.10 m in diameter, built of red bricks bonded in clay mortar [Fig. 5]. The brick-made firing chambers were reinforced with semicircular casing walls of stone. Remnants of brick-made vaults were preserved on the outer lateral walls. The inner surface of the kilns was found to be partly vitrified due to high temperature. Between the kilns there was a fragmentarily preserved tank for slaking lime. Narrow, corridor-like features were cleared in front of the kilns; they were constructed of loosely arranged assorted stones, also making use of still standing walls of an Early Roman house in the layer below. They were used in all likelihood in the loading and firing operation,

but the exact function remains unclear. A large semicircular wall, built of assorted blocks salvaged most probably from nearby ruins, surrounded the complex.

Associated layers in the vicinity of the kilns, consisted almost entirely of lime refuse, ashes and slag, with heavy concentrations of marble detritus, partly burned or half-melted. Prominent among them were broken elements of architectural decoration: engraved slabs, fragments of capitals and bases etc., originating from the dismantling of older buildings. Among these were some marble slab pieces bearing fragmentary red-painted inscriptions in Latin [Fig. 6]. Two fragments stood apart, containing as they did the complete word “CAESAR” written in cursive script. Judging by their back surface, the slabs must have been used originally as wall revetment. Based on palaeographic criteria, the



Fig. 6. Marble detritus including some pieces of slabs with red-painted inscription  
(Photo G. Majcherek)

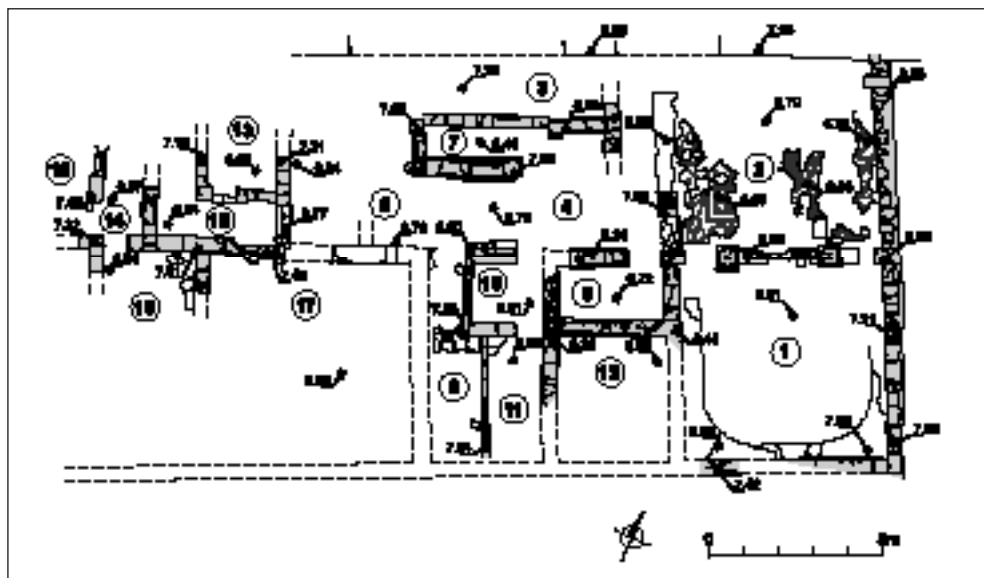


Fig. 7. Ground plan of Early Roman house FB in Area F  
(A. Brzozowska, G. Karpińska)



Fig. 8. General view of Early Roman house FB in Area F, looking east  
(Photo G. Majcherek)

inscriptions have been dated provisionally to the Augustan period, but the historical relevance of this unexpected discovery is still difficult to grasp.

A large group of coins dated to the second half of the 3rd century AD was found in layers associated with and underlying the kilns. Most of these represented Diocletian's Alexandrian tetradrachms of pre-reform issue (AD 296), thus giving a fairly precise date for the operation of the kiln (for the numismatic report, see Jegliński 2011, in this volume). There seems to be little doubt that the kilns were part of a construction site, assuring a regular supply of lime for the building of the nearby bath or cistern complex. Bearing in mind the scale of this building operation, it is likely that more kilns will be discovered once the excavation area is extended.

Underlying the layer with the kilns is a complex of 1st through 3rd century AD domestic architecture, which has been excavated on and off since 1994 (Majcherek 1999b). The relatively well-preserved houses have contributed significantly to studies on the development of domestic architecture in Early Roman Alexandria. With the extension of the trench approximately 9 m to the west more rooms in the western wing of House FB could now be cleared, but without reaching the western limits of the building. The general layout of the house also remains unclear [Figs 7, 8]. Were it to represent a typical design consisting of a courtyard surrounded by a series of rooms of different functions, then the courtyard should be expected somewhere to the north. This idea needs to be tested next season, once the later lime kilns have been properly documented and removed.

Some of the rooms seem to have served other than purely housing function.

Room 12, partly excavated in 2007, was separated from the rest of the building and acted most probably as a shop with access from the street. A cluster of rooms excavated this season in the northwestern part of the trench (at bottom left in *Fig. 8*) were difficult to interpret, having been largely obscured or damaged by the large outer wall of the bath which cut through the ruins of the Early Roman house. Given their rather small dimensions, they should be expected to serve a purely domestic function. Locus 15 was apparently a corridor (about 1 m wide) giving access to another, as yet unexplored, section of the house. In partly preserved room 17 a large charcoal deposit was cleared, representing most probably a secondary phase of occupation when the house was already prob-



*Fig. 9. Terracotta oil lamp with representation of Isis, Harpocrates and Serapis (Photo G. Majcherek)*

ably partly abandoned. Large quantities of kitchen ware, mostly cooking pots, jars and large dishes, all bearing traces of prolonged use, prompted its provisional identification as a kitchen. Altogether 16 vessel forms were recovered and duly restored. All were Egyptian-made (Nile silt fabric) and belonged to a 2nd–3rd century AD horizon [Fig. 10]. Several lamps were also recorded, including a fine example of an Egyptian moldmade lamp with a representation of Isis, Harpocrates and Serapis [Fig. 9]. A vast number of vessels (mostly Palestinian amphorae) was also found in rooms 13 and 14. The glass finds assemblage from the excavated area belonged to the same, 2nd–3rd century AD horizon and included also evidence

of glass-working (see report on glass finds, Kucharczyk 2011, in this volume).

Wall construction technique in the sections uncovered this season was consistent with last year's findings. It was chiefly isodomic masonry not exceeding 0.40–0.45 m in thickness, although this flimsiness apparently did not exclude an upper floor or terraced roof, as evidenced by remains of a staircase found in room 6. Floors varied considerably, from tamped earth surfaces in rooms 14 and 15 to remains of pavement in the *opus barbaricum* technique in rooms 13, 16 and 18. Emplacements for wooden frames were found in the doorways. Roofing collapse cleared in rooms 13 and 16 contained lime plaster with palm-rib impressions; this indicated a flat roof.



Fig. 10. Domestic ware vessels found in room 17 of Early Roman house FB  
(Photo G. Majcherek)

Some of the tumbled blocks bore scanty remains of painted plaster representing purely geometrical decoration in red, green and blue, but no larger panels could be reconstructed based on the surviving fragments.

The southern façade of the building was found to have been almost entirely dismantled, therefore the location of the entrance is still unknown. It turned out, however, that the house was built along a side street (approximately 4.80 m wide), which constituted a prolongation of a side street discovered previously in sector W<sub>1</sub>N. This part of the Early Roman urban grid disappeared completely following redesigning of the area associated with the introduction of the Late Roman public zone.

Some poorly preserved walls and an entrance to the house on the southern side of this street were uncovered. Several elements of the door framing bore distinctive traits of the Alexandria Corinthian

order, e.g. a section of cornice with alternating flat grooved and square hollowed modillions [Fig. 11]. This, as well as a fragment of a Doric frieze and fluted half-column found there point to a rather sumptuous architectural decoration of this, as yet unexplored, house.

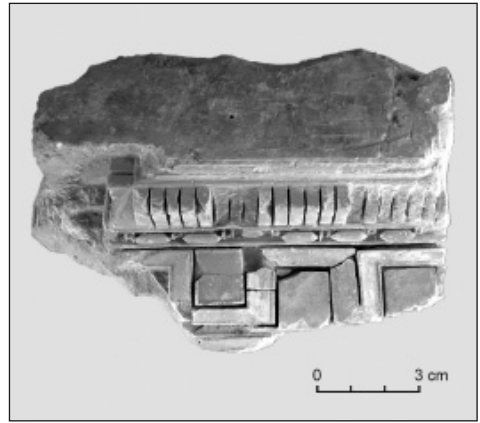


Fig. 11. Cornice of the Alexandria Corinthian order (Photo G. Majcherek)

## PRESERVATION WORK

Restoration supervisors: Dr. Wojciech Kołtąj and Aureliusz Piszczewski

### BATHS

The restoration of the southern bath façade, which is an integral part of the planned open-air display of the ancient ruins, has now been completed (some 30 m in length), following two earlier seasons of work on the eastern end of the façade (Majcherek 2005: 27–29) [Fig. 12].

The wall structure had suffered serious erosion and deliberate damage in late antiquity and the medieval period. Some of the bricks were found to be completely deteriorated, while the mortar had lost all its cohesive strength. Given the complexity of the original bonding (at least two basic

brick sizes had been used), it was deemed necessary to prepare first the required number of modern bricks to be used in the conservation operation. This was achieved by cutting modern factory bricks to the required size. The mortar used during the process was based on an ancient Roman formula made of sand, lime and crushed bricks mixed in a ratio of 4:2:1. This helped not only in achieving proper quality, but also the desired coloring. The elevation was restored to a height of some 1.60 m, that is, the level of the original window sills. In several cases, extant lower courses of the masonry had to be reinforced with new

mortar, and some of the more seriously damaged bricks replaced with new ones, to make the wall facing structurally sound.

Preservation of the southern elevation required also the restoration of two brick-made vaults, giving access to the furnaces located in the basement of the baths. Extant sections of the vaults were first consolidated. Existing void joints were filled in and some loose bricks were fixed with new mortar. For the full restoration original bricks found during excavations were used. Two such vaults, supporting the elevation, were entirely restored [Fig. 13]. Two additional, partially preserved furnace vaults were also consolidated.

Restoration of a fragment of the southern latrine wall adjoining the bath was also completed. Missing, or seriously eroded, stones were replaced with new ones, and yet another course was added to ward off damp.

#### AREA F

A major restoration operation was conducted in area F, where a large section of the baths' huge outer wall had been rebuilt in the two previous seasons (Majcherek 2008: 36–37; Majcherek 2010: 45–47). Archaeological excavations had revealed the existence of a perpendicular wall running north and enclosing the apodyterium from the east (for the plan of the bath complex, see Kołataj 1992: 56–65, Fig. 35). Approximately 2.20 m below the apodyterium pavement there was another wall, structured in the pillar technique which was commonly used in other huge Late Roman buildings excavated at the site. The pillars were made of large masonry blocks and the intervening sections were built in *opus caementicium* with a limestone facing enclosing a rubble core. The pillars were almost totally gone, while the extant screening walls were in a very poor



Fig. 12. Restored southern façade of the bath  
(Photo G. Majcherek)

condition. The latter were treated first; the core of the wall was consolidated and the masonry facing restored where necessary. The missing sections were then restored using large blocks found during excavations.

#### BATH APODYTERIUM

The nearby apodyterium also underwent thorough conservation. The extant floor pavement was consolidated. Some slabs were fixed with mortar and others re-laid on new bedding. Since the floor now rests



*Fig. 13. One of the restored vaults giving access to the furnaces in the baths, before (left) and after restoration (Photo A. Pisarzewski)*



*Fig. 14. Bath apodyterium following restoration in 2008, looking southwest (Photo G. Majcherek)*

some 0.60–0.80 m above surrounding ground, the edges of the pavement had to be supported and protected with a low retaining wall to prevent subsiding and disintegration [Fig. 14]. The wall was built of small assorted stones, in a manner similar to the original bedding.

### CISTERN

Preservation work in the cisterns focused on restoration of the southwestern corner of the building. The long stretch (approximately 8 m long) of heavily buttressed outer wall of the cistern had been dismantled in the 10th–11th century to a level about 2.20 m below the upper

floor level of the structure. The wall was originally built as a solid structure, approximately 1.55 m thick, made of large limestone blocks in isodomonic technique. Proper restoration required large blocks of similar characteristics to be used; at Kom el-Dikka it is an established conservation principle to make use of suitable blocks salvaged from nearby excavations, since for the most part it is very likely that they had originated from the same structure anyhow. By the end of the season the wall was restored to the required height.

Preservation work was also conducted in the eastern staircase of the cistern. This staircase, approximately 30 m long, leading



*Fig. 15. Restored staircase in the cistern building, looking north  
(Photo G. Majcherek)*



up to the level of the top of the water tanks, served most probably as a ramp for bringing up animals to run the water-lifting *saqiya* devices. The stairs were found to be either destroyed or dismantled along the edges, next to the walls of the corridor where most of the medieval robbing activity had occurred. The stairs were repaired and consolidated [Fig. 15].

#### MOSAIC CONSERVATION

Some supplementary conservation work was undertaken in Early Roman House F. The mosaic pavement, restored already in 1999, had been seriously threatened by exposure to climatic elements. Some of the cubes forming the mosaic, especially on the edges, had lost cohesion. Due to increased damp, the bedding was also found to be disintegrating in places. Instead of detaching the mosaic, it was decided to treat it on the spot. The conservation work was done by Joanna Lis. The efflorescence of water-soluble salts appearing on the surface was carefully removed mechanically. Loose cubes were set in new mortar, while

the edges were additionally reinforced with lime mortar. As a preventive measure, the entire surface of the mosaic was covered with a layer of pure sand (approximately 0.20 m thick).

Similar procedures were also applied to the fragmentarily preserved mosaic pavement located at the eastern entrance to the bath complex.

#### SITE DEVELOPMENT WORK

As part of site development, new stairs were built leading from the bath complex down to the level of the R4 street. The seven-stepped flight of stairs (1.80 m wide), made of new limestone blocks, gives easy access to the domestic quarter and the Villa of the Birds. With this, the southern visitor route has neared completion.

A path along the south elevation of the cistern building was also restructured. The wall forming the southern limit of the building was raised. Two more courses were added to the existing wall, creating the necessary support counteracting the heavy load of the escarpment behind it.

Dr. Grzegorz Majcherek  
Polish Centre of Mediterranean Archaeology, University of Warsaw  
00-497 Warsaw, Poland  
ul. Nowy Świat 4  
e-mail: grzegorz.majcherek@uw.edu.pl

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