

SELECTED CONSERVATION PROJECTS IN MARINA EL-ALAMEIN IN THE 2014 AND 2015 SEASONS

Marlena Koczorowska,¹ Wojciech Osiak² and Piotr Zambrzycki³

¹Academy of Fine Arts in Warsaw, ²independent, PCMA associate,

³Inter-Academy Institute of Conservation and Restoration of Works of Art

Abstract: The 2014 and 2015 conservation program of the Polish–Egyptian Conservation Mission to Marina el-Alamein, apart from current maintenance, covered mainly conservation activities within the central square of the town and in selected rooms of two complexes of public baths: a Hellenistic establishment situated north of the square and a Roman one to the south of it. Conservation of selected items in the storerooms, paintings in particular, was also included.

Keywords: Marina el-Alamein, Hellenistic / Roman baths, stone / painting conservation

The following report brings together brief descriptions of the conservation work undertaken by restorers from the Polish–Egyptian Conservation Mission as part of a yearly maintenance program, extended to include the current projects of the team. The work is carried out in close cooperation with professional restorers from the Academy of Fine Arts in Warsaw, who are responsible for developing and implementing proper procedures. The present report discusses some of these undertakings, namely, 1) continued treatment of an inscribed marble plaque from the Southern Bath; 2) bench seats in the main town square; 3) column bases in the South Portico of the main town square; 4) tholos bath in the Northern Bath;

5) latrine and assorted other elements in the Southern Bath; 6) wall painting conservation, in the field and in storage.

INSCRIBED MARBLE SLAB

Damage to an inscribed slab, which had been restored a few years ago to its original position in the Southern Bath (for the discovery, see Daszewski et al. 2007: 83; for the conservation, see Medeksza et al. 2012: 101–102), had left it detached from its support and fragmented. Five years of exposure to extreme temperature changes (from a few degrees Centigrade at night to 50 degrees at noon) and unchecked rises of humidity, were further aggravated by unprofessional attempts to remove it from its original location. In effect, the



Fig. 1. Conservation of bench seats against the north wall of the central square: top, before conservation; center, conservation in progress; bottom, after conservation in 2014 (Photos R. Czerner, P. Zambrzycki)

reinforcing bottom layer had come loose. It was evident that it needed to be preserved and transferred to stable conditions.

Treatment called for rebonding of the elements with an epoxy resin-based binder (modified with lime filler in a one part resin and four parts filler ratio). The two-component resin ARALDITE AW 106/HV953U is chemically and mechanically resistant to the specific weather factors of the region. The surfaces to be bonded were first protected with a 5% solution of PARALOID B-72 in toluene to reinforce the surface and block excessive penetration of the epoxy resin into the stone structure. The slab was placed in store and a replica will be made to replace it in its original location in the bath. After finishing the work, the item will be deposited in store.

BENCH SEATS IN THE CENTRAL SQUARE

The heavily damaged seats of benches in the northern part of the central square were treated according to procedures developed in previous years. The broken fragments were washed and peeled, then bonded. KEMAPOXY 150 epoxy resin with lime filler was used as an adhesive. The bonded areas were reinforced with stainless steel bolts (12 x 200 mm) [Fig. 1]. Patches, 8 x 25 x 15 cm in size, had to be fitted in the fronts of both benches, just above the center supporting leg. The heavily weathered rounded edges of the seats were filled using lime–cement mortar (Doehne and Price 2010: 36). Substantial losses in cracked places and on the upper surface of seats were also filled in. Two of the legs underwent a comprehensive reconstruction replacing the heavily worn original ones. The middle

legs, being the best preserved, were left untreated. Assembly in the square used cement–lime mortar. The original slight tilt of the benches resulting from earthquake-related damage in antiquity was maintained.

[PZ]

COLUMN BASES IN THE SOUTH PORTICO

The heavily weathered remains of three column bases in the eastern part of the South Portico of the central square, made originally of lime mortar, were filled in with lime–cement mortar (Domasłowski 2003: 48), especially at the edges. They were bonded to the stone, to prevent further deterioration in this way. Numerous losses were filled in, including cracks and detachments from stone. All the relics were protected with reinforcing bands.

THOLOS IN THE NORTHERN BATH

Soil and pieces of brick scattered around inside the chamber (which was excavated in the late 1980s by an Egyptian team right after the site was discovered) were removed from the tholos room of the bath. A course of original bricks or even two courses were set on top of the wall running around the chamber and inclined inward, the goal being to reconstruct the base of the now missing brick dome [Fig. 2]. The plasterwork of a small immersion bathtub on the west (room 2) had reinforcing bands put in place. The edges of the preserved mortar inside a water reservoir (No. 3) were cleaned of loose accumulations, the cracks were filled and protective bands placed on the wall top. A lime–cement mortar with ceramic filler and ashes added, similar to the original, was used.



Fig. 2. The tholos of the Northern Bath before and after conservation in 2014; note the bricks of the base of the dome over the chamber [see also above, Fig. 11 on page 181] (Photos R. Czerner)

LATRINE AND OTHER AREAS IN THE SOUTHERN BATH

The marble flooring in the latrine (No. 14) was reconstructed in part [Fig. 3] by matching fragments grouped by their thickness with the preserved elements. Floor tiles, detached from the foundation in the southwestern corner and by the entrance to the latrine, were fitted using lime–cement mortar. Mortar bands were placed on all endangered plaster on the inner wall. The same was done for the plaster on the walls of the other latrine (No. 12).

A brick furnace (No. 7d) was protected with lime–cement mortar that was through-dyed, with addition of lamp black (black pigment) and crushed brick. Fragments of bricks were fitted where possible and the two corners, northwestern

and southwestern, were reconstructed with three and two layers of bricks, respectively. A ceramic partition wall at the outlet of the heating duct, leading from the furnace southward, was also reconstructed.

Interventions on structures conserved in earlier seasons included: marble revetment slabs that had become detached from the wall in rooms 6 and 7 were fitted back in place. Damaged mortar protective bands were reconstructed where necessary and the weathered ones were filled in, especially in the latrine area (Nos 12–15), where the tops of walls have suffered the greatest weathering effect, and in the *alvei* (Nos 7a and 7b). Lime–cement mortar through-dyed with lamp black, charcoal and fine ceramic filler was used.

[WO]



Fig. 3. Southern bath. Latrine 14 and corridor 15 after conservation in 2014
(Photo R. Czerner)

WALL PAINTING
CONSERVATION

Wall painting conservation is an ongoing process (the most recent work by the authors was reported in Koczorowska and Osiak 2015) and in many cases it is actually salvage work, despite successful earlier treatment. Extensive damage was caused even to the stored items by the migration of salts to the surface, destroying the structural cohesion of mortar and the paint layer, as well as their adhesion to one another.

Protective bands of lime–cement mortar were applied to a fragmentary section of multiple-layered mural decoration in room 13 of the Southern Bath. Once the mortar had dried, PRIMAL AC33 diluted in water was injected into the voids; the proportions of the substance to water was 1:3 (after first reducing surface tension by ethanol with water 1:1). Then came a suspension of LEDAN TC1 in water (1:1).

[MK]

A fragment of a wall painting found in 1999 in House 10 had been transferred from the original ground and thoroughly conserved (including bonding detached layers thickly with an adhesive). Intervention work in 2014 started with cleaning of the transfer of loose deposits. The adhesive had changed its characteristics due to humidity and had become detached from the substrate layer and stone. It was backed by applying in succession, ethanol with water (1:1) to reduce surface tension, PRIMAL AC33 with water (1:3) to reinforce the component layers, and LEDAN TC1 with water (1:1) to fill the spaces between layers and to bond them together again. The edges of the paint layer

together with the mortar, which had begun to crumble, posed a different problem. The weakened spots were reinforced with injections of PRIMAL AC33 with water (1:3), after surface tension was reduced by applying ethanol with water (1:1). The wet layers were pressed against the ground with flattened marble pieces and flexible spatulas. Next, the losses in the layer of plaster on the edges of the painting(?) were filled in using lime–sand mortar with a filler of fine-grained sand (1:3), adding water and approximately 2% of PRIMAL AC33 as plasticizer. The layer of mortar applied was minimally thinner than the original, and its surface was smoothed. The whole process was documented according to standards.

Conservation of a polychrome fragment of column shaft, started in an earlier season (Koczorowska and Osiak 2015: 111), was bow reinforced and pasted to the limestone backing. The scaling of the paint layer was treated once the layer had been saturated with ethanol with water in equal proportions to reduce surface tension and to make the paint layer more flexible. One part PRIMAL AC33 to three parts water was applied back of the scales and the scales were then pressed down with stainless steel spatulas. Excess glue was removed with wet cotton wool. Losses of the plaster layer were filled in with lime–sand mortar with filler consisting of fine-grained sand and marble powder (1:1), the proportions being 1:3, adding water and about 2% PRIMAL AC33 as plasticizer. The layer of mortar applied was minimally thinner than the original; its surface was smoothed. Retouching of the colors is planned.

A painting of the bust of a woman wearing a nautical crown had been transferred to a substitute ground in

2001 (Medeksza 2002: 100); in storage, however, salt migration to the surface had deteriorated the mural. Intervention work ended at the stage of structural reinforcement and application of lime-sand putty in places where the paint layer had been lost together with the mortar layer. In 2015, the transfer was cleaned of loose deposits. STUCCOLINI putty was applied, smoothing the surface and filling the losses in the original plaster. An earlier chromatic reintegration of the paint layer from 1999 was removed due to changed coloring and partial damage. A reintegrating retouch was made using WINSOR & NEWTON pigments and watercolors with a 5% PRIMAL AC33 solution in water.

The condition of fragments of painting with floral motif and floral and figural decoration from house H10 was assessed. The two items were cleaned of loose deposits, on the face as well as reverse. In this case, too, the thorough conservation in 2000 was undermined by salt migration to the surface, which damaged both the paint and the mortar layers, partly detaching them from one another. About 10% of the mortar layer with decoration was detached from the stone background and about 80% of the paint layer was detached from the plaster ground. Injections of PRIMAL AC33 with water (1:3) followed surface tension reduction using ethanol with water in equal proportions. Wet layers were pressed against the ground with stone weights laid on a styrofoam separator that prevented impression of the weight and their sticking to the paint layer. The detached paint layer was backed with PRIMAL AC33, one part to six parts water, a little alcohol added to prevent glossing on the surface. In some places, where the mortar layer had crumbled,

the original paint layer had no support. The voids were filled with a suspension of LEDAN TC1 in water in equal parts. Losses of the mortar layer were filled using lime-sand mortar with filler consisting of fine-grained sand and marble powder (1:1) in 1:3 proportions, adding water and about 2% PRIMAL AC33 as plasticizer. The layer of mortar applied was minimally thinner than the original, and its surface was smoothed. STUCCOLINI putty was applied to the tops of the filled places, which smoothed the filling surface, rendering it similar to the original texture. Reintegrating retouch was made with WINSOR & NEWTON pigments and watercolors with a 5% PRIMAL AC33 solution in water.

A decorative polychrome shell from house H10 made using a floating-coat



Fig. 4. Decorative polychrome shell from house H10, before and after conservation (Photos M. Koczorowska, W. Osiak)

technique was in bad condition [Fig. 4], detachments caused by salt migration to the surface (Doehne and Price 2010: 15, 28) covering over 80% of the surface. The fragmented decoration was found in 1999 and was reintegrated during intervention work with putty made on the basis of a polyester resin. Full preventive conservation in 2015 was carried out. The mortar layer was reinforced first by saturation with ethanol with water in equal parts to reduce surface tension; next PRIMAL AC33, one part to three parts water, was applied and the voids filled with lime-sand mortar with PRIMAL AC33

as plasticizer. Loose deposits were first removed mechanically from the paint layer and then cleaned thoroughly. Injections of PRIMAL AC33 with water (1:3) followed reduction of the surface tension using ethanol with water equal parts. The wet layers were pressed. Also the back of the paint layer was pasted to the plaster ground using PRIMAL AC33 with water in a 1:6 proportion with some ethanol added, taking care not to allow glossing to appear on the surface. Filling of losses in the mortar layer and plaster and retouching are planned.

[MK]

Marlena Koczorowska
Academy of Fine Arts in Warsaw
00-379 Warsaw, Poland, ul. Wyrbrzeże Kościuszkowskie 37
e-mail: koczorowska.m@gmail.com

Wojciech Osiak
e-mail: wojtek.osiak@gmail.com

Piotr Zambrzycki
Inter-Academy Institute of Conservation and Restoration of Works of Art
00-379 Warsaw, Poland, ul. Wyrbrzeże Kościuszkowskie 37
e-mail: mik@asp.waw.pl

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