Conservation in Marina el-Alamein in 2017

(Polish–Egyptian Conservation Mission)

Abstract: The conservation program of the Polish–Egyptian Conservation Mission in Marina el-Alamein in 2017 included restoration of wall structures and architectural decoration elements damaged as a result of unfavorable climate conditions (Houses H9/H9a and H21, Rooms 10 and 11 in the Roman baths). Wall paintings exposed to weather conditions *in situ* were treated as part of another conservation project. Minor metal finds were also treated using both chemical and mechanical means in order to identify the objects.

Keywords: Marina el-Alamein, stone conservation, architectural decoration, wall paintings, House H9, House H21, Roman baths, restoration *in situ*, metal relics

An important task of the Conservation Mission in Marina el-Alamein (Egypt) is to continuously monitor the state of preservation of the architectural remains and to take up the required interventional conservation works. Standard conservation of archaeological finds is also carried out on a regular basis (for the current work at the site, see Czerner, Bąkowska-Czerner, and Grzegorek 2018, in this volume).

ARCHITECTURAL CONSERVATION

As a rule, winter at the site escalates unfavorable climatic conditions resulting in damage to wall structures and architectural decoration elements. Consequently, progressive degradation of masonry bondwork was observed in 2017, due to the heterogeneity of the technical parameters of stone blocks used for wall building and the destructive effects of water and salt contained in the stone. Therefore, choosing materials of appropriate technical parameters, varying in accordance with location, ground and function, for the conservation of walls was a key issue in the whole procedure. Long-term observations made by the conservation team have shown that

Piotr Zambrzycki[1]
Anna Selerowicz[2]

[1, 2] Inter-academy Institute of Conservation and Restoration of Works of Art, Academy of Fine Arts in Warsaw

Polish Archaeology in the Mediterranean 27/1
Zambrzycki and Selerowicz 2018: 85–92
DOI: 10.5604/01.3001.0013.1967

poorer quality mortar is easily eroded by water and wind action (Medeksza et al. 2010: 88; Czerner and Medeksza 2010: 109–112). There is a need for replacing mortar made of 3 parts sand to 1 part lime and 0.5 part white cement and vary-

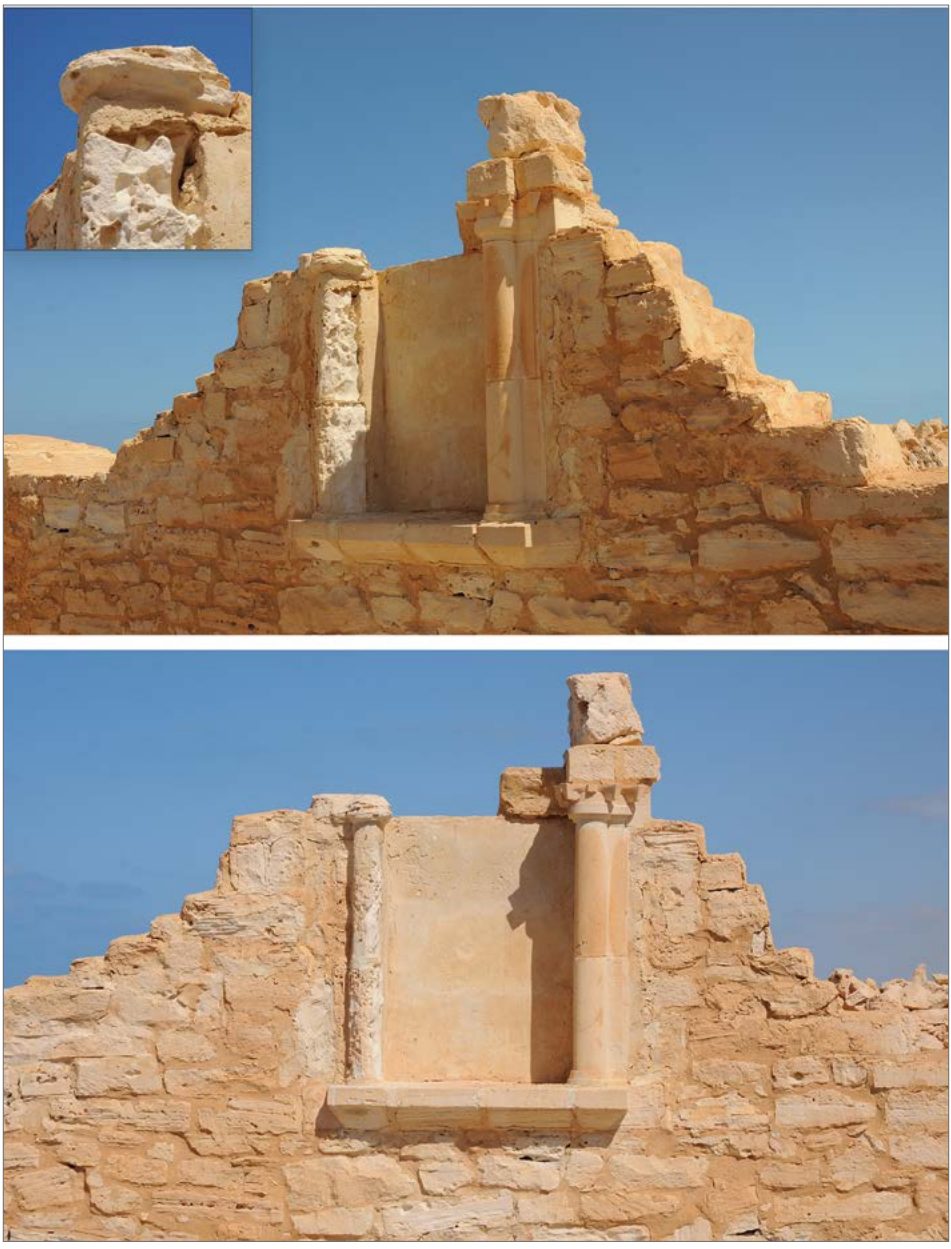

Fig. 1. Small aedicule in House H9: top, before conservation; inset, detail before conservation; bottom, after conservation (Polish–Egyptian Conservation Mission Marina el-Alamein/photos P. Zambrzycki)

ing the strength of the bonding agent. Stronger mortar is necessary in the case of structurally bonded elements like column drums and capitals, but for bands protecting the edges of historical plaster, a weaker mortar is better suited to avoid the strong mortar detaching the weaker substrate.

In the 2017 season, joints were repaired in a small aedicule in House H9 [*Fig. 1*], capitals were remounted in the commemorative monument in House H21 [*Fig. 2*], and bands were introduced to protect the edges of ancient plaster in Rooms 10 and 11 of the Roman baths south of the main square [*Fig. 3*].

The joints and losses of stone in the architectural elements in House H9 were filled with a mineral mortar: 3 parts sand to 1 part lime to 0.5 part cement. Mortar with relatively low durability was used, adjusted to the weakened structure of

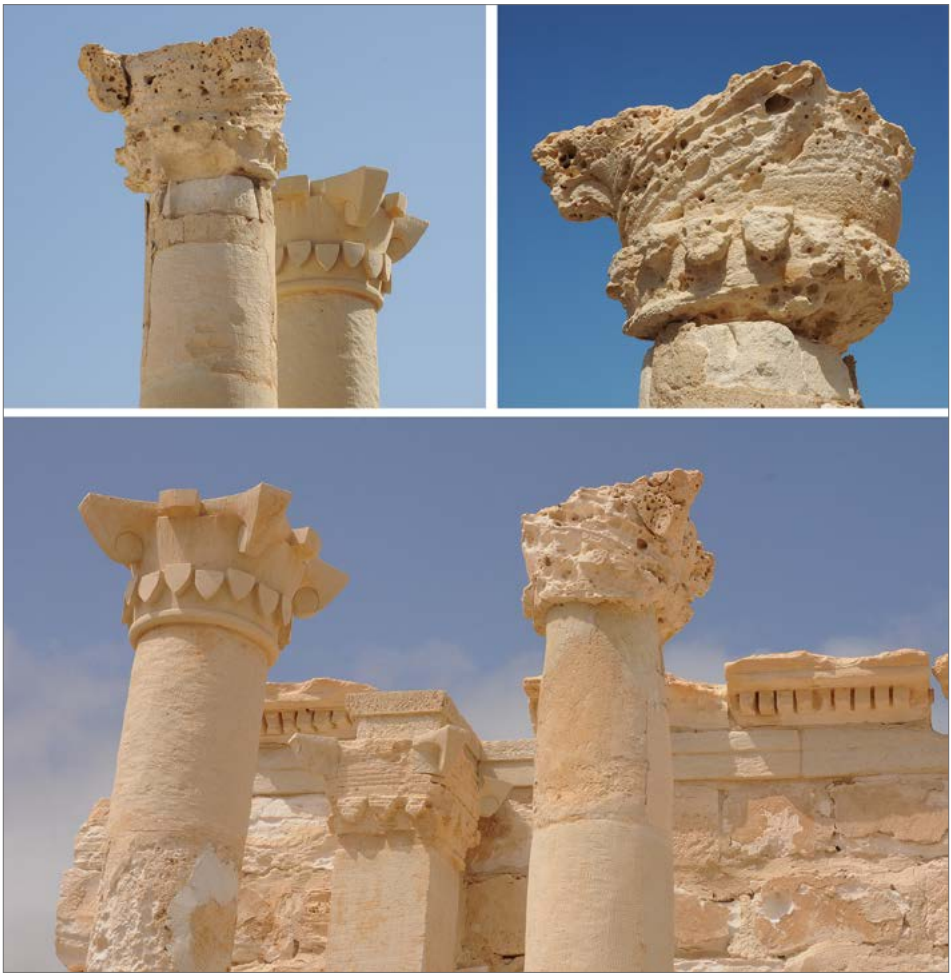

Fig. 2. Capitals of the commemorative monument in House H21: top row, before conservation; bottom, after conservation (Polish–Egyptian Conservation Mission Marina el-Alamein/photos P. Zambrzycki)

the stone. The same mortar was used for the bands to protect the edges of plaster in the Roman baths. As for the architectural elements repaired in House H21, a stronger mortar was used, 3 parts sand to 1 part lime to 1 part cement, this in

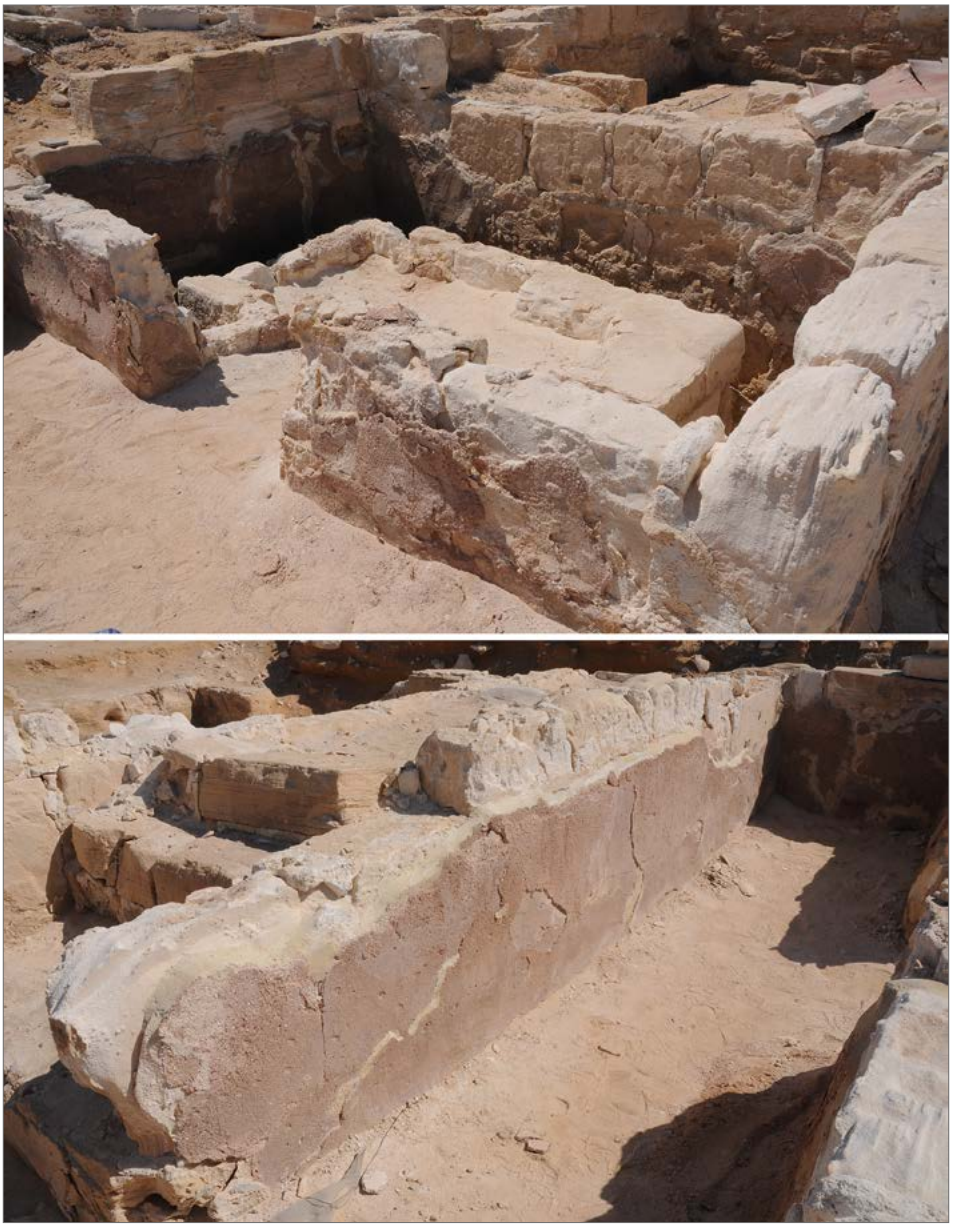

Fig. 3. Bands protecting ancient plaster edges in the Roman baths: top, before reconstruction; bottom, after reconstruction (Polish–Egyptian Conservation Mission Marina el-Alamein/ photos P. Zambrzycki)

view of the fact that the previous joint, being made of the weaker mortar, had been washed away, posing the danger of losing the stability of the connection (Medeksza et al. 2011).

[PZ, AS]

PAINTED WALL DECORATION CONSERVATION

Conservation of painted wall decoration, another regular team project, concerned painting discovered in Room 9 of the Roman baths. This was conservation of a salvage nature [*Fig. 4*], and it initiated research aiming to assess the odds of being able to preserve painted wall decoration *in situ*, exposed to the all-year weather conditions prevalent in Marina el-Alamein. The project will be implemented in coming seasons.

The painting, a fragment of which was discovered on the south wall of the room, decorated probably the whole interior. There was a dado in the bottom part, a frieze consisting of three colors above it, and presumably geometrized panels higher up. The preserved decoration is located a little above the floor level. The lowermost part is painted black, the upper part is in shades of red. The decoration was painted against the background of white plaster laid without any ground directly on the stone surface. The painting layer is characterized by good adhesion to the plaster with high cohesion and hardness. However, larger pockets are created in places where the edges of the plaster, impacted by strongly unfavorable climatic factors, are weakened and partly detached from the wall.

No evidence of salt precipitation was observed on the surface of the painting. The painting was cleaned of loose fragments of plaster and sand. Cracks were not deepened due to the high degree of hardness of the plaster, this because vibrations during this procedure would have posed a danger for the

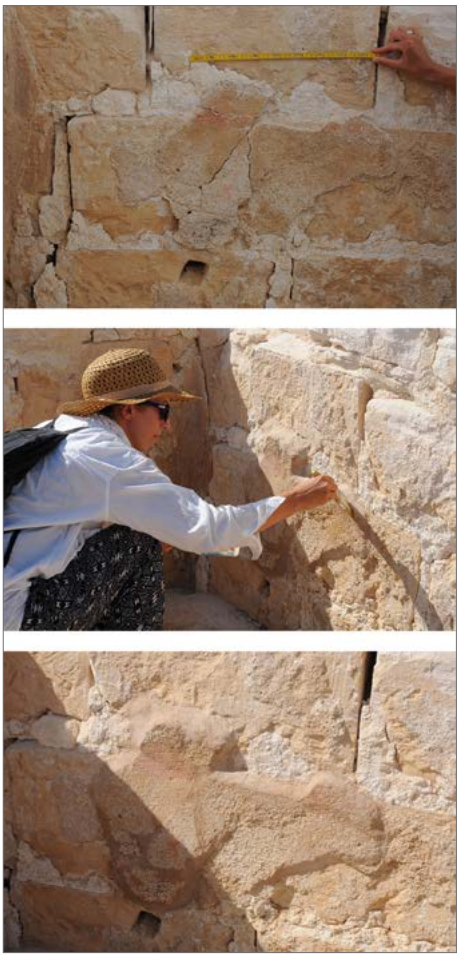

Fig. 4. Relics of painting in Room 9 of the Roman baths: top, before conservation; middle, during the consolidation of paint layers; bottom, after conservation (Polish–Egyptian Conservation Mission Marina el-Alamein/ photos P. Zambrzycki)

adhesion of the mortar to the ground. A lime–sand mortar with carefully chosen strength parameters was used for the bands and for filling cavities and larger cracks. This mortar was composed of lime, fine-grained sand, cement and a small amount of crushed brick sand, 1:3:0.5:0.08 parts respectively. To increase mortar flexibility, a 2% solution of Primal AC 33 in water was added (Chmielewski 2013: 206–207). The addition of crushed brick dust served to enhance the hydrophobic properties (making the mortar waterproof). The conserved surfaces were first moistened with water. A test was made on a part of the painting to see how reinforcing the painting layer with a 2% solution of Primal AC 33 in water, applied to the surface with a soft brush, would work (Jakubowski 2008: 130–131).

The team also undertook to assess the preservation condition of polychromed objects stored in the Marina el-Alamein storeroom [*Fig. 5*]. The collection consists of paintings on an artificial substrate (transfer) and natural stone (limestone blocks). An essential factor, determining the preservation condition of the objects, is the high air humidity in the storeroom resulting from the proximity of the sea. In such conditions, mineral salts migration is possible, damaging the structure of objects.

The following objects were inspected: a) a polychromed column drum [*Fig. 5* left]; b) a painting on a transfer ground: fragment showing a head, most probably a personification of Alexandria; c) a painting on a transfer ground: fragment of painting depicting three figures: personifications of Helios, Harpokrates and Serapis; d) a painting on a ground reinforced with mineral mortar: fragment showing the figure of a man: personification of Heron; e) a painting on a stone ground: fragment with a floral motif; f) a painting on a stone ground: fragment with floral and figurative decoration;

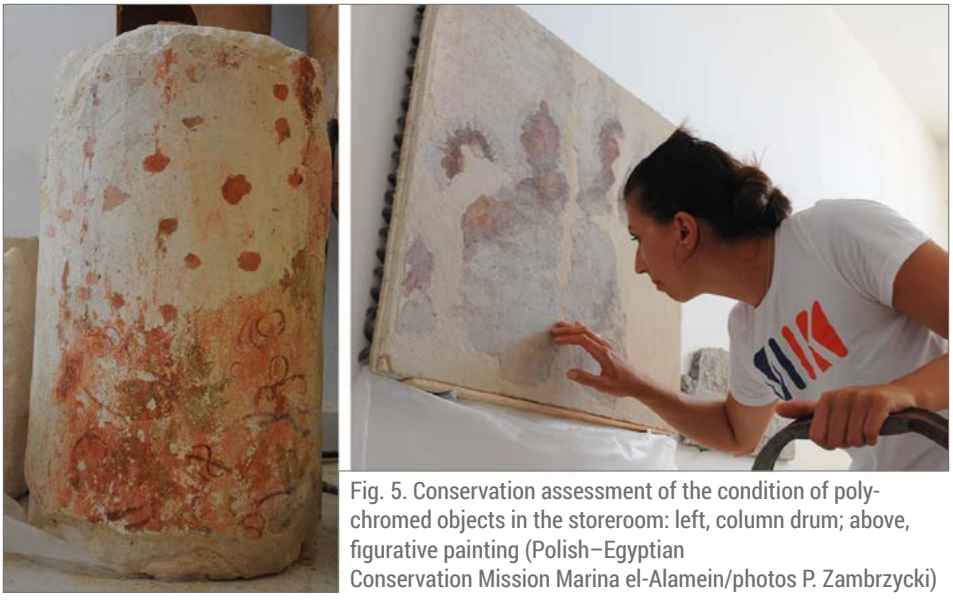

Fig. 5. Conservation assessment of the condition of polychromed objects in the storeroom: left, column drum; above, figurative painting (Polish–Egyptian Conservation Mission Marina el-Alamein/photos P. Zambrzycki)

g) a polychromed shell made using the technique of a floating coat.

The general preservation condition of the stored paintings is good. In most objects no loss of adhesion to the ground or the structural cohesion of technological layers was observed. Preventive work was deemed essential only in the case of the polychromed column drum shaft; the slightly powdering painting layer was reinforced with a 2% water solution of Primal AC 33 and a 5% analogous solution was applied to the uncovered stone, the protective mortar bands and mortar replacement wherever salt precipitation and stone and mortar erosion had reappeared. Surfaces were first moistened with ethanol (1 : 1 with water) to lower surface tension and increase penetration of the adhesive binder.

The use of a lower concentration of the solution was aimed at avoiding possible gloss on the surface of the painting. In view of earlier ineffective applications of Paraloid B-72 (Ciabach 1998: 121–122), the present project tested Primal AC 33 in this application to observe the effectiveness of this resin in subsequent years.

[AS]

CONSERVATION OF ARCHAEOLOGICAL SMALL FINDS

Small finds of bronze discovered by the team included fragments of jewelry, coins and nails. Conservation essentially aimed at halting degradation of the material substance and restoring the original appearance to facilitate identification and classification of the find (Medeksza et al. 2010: 97).

Standard conservation procedure in these cases started with photographic documentation of the condition of a given object. Next, products of metal corrosion were removed in a bath of a 1% solution of disodium EDTA in water. The process was carried out in an ultrasonic washer. Subsequently, the objects were desalinated in distilled water using the same ultrasonic washer. A glass fiber pencil was used to remove products of corrosion where necessary. Objects were then coated for protection with a 3% solution of Paraloid B-72 in toluene. The procedure was completed with a full final documentation of the conserved find.

PZ]

Piotr Zambrzycki
Inter-academy Institute of Conservation and Restoration of Works of Art,
Academy of Fine Arts in Warsaw
00-379 Warsaw, Poland,
ul. Wybrzeże Kościuszkowskie 37
mik@asp.waw.pl

Anna Selerowicz
Inter-academy Institute of Conservation and Restoration of Works of Art,
Academy of Fine Arts in Warsaw
00-379 Warsaw, Poland,
ul. Wybrzeże Kościuszkowskie 37
mik@asp.waw.pl

How to cite this article:
Zambrzycki, P., & Selerowicz, A. (2018). Conservation in Marina el-Alamein in 2017 (Polish–Egyptian Conservation Mission). Polish Archaeology in the Mediterranean, 27/1, 85–92.
https://doi.org/10.5604/01.3001.0013.1967

References

Chmielewski, K. (2013). *Odkrycie i konserwacja średniowiecznych malowideł w kościele pw. św. św. Sergiusza i Bachusa w Kaftun: wybrane zagadnienia ochrony dziedzictwa kulturowego w Libanie* [The discovery and conservation of medieval wall paintings at St Sergius and St Bacchus's church in Kaftun: some problems of heritage conservation in Lebanon]. Warsaw: Akademia Sztuk Pięknych [in Polish with English summary]

Ciabach, J. (1998). *Żywice i tworzywa sztuczne stosowane w konserwacji zabytków* [Resins and plastic materials used in the conservation of historical objects]. Toruń: Wydawnictwo Uniwersytetu Mikołaja Kopernika [in Polish]

Czerner, R., Bąkowska-Czerner, G., and Grzegorek, W. (2018). Research and architectural conservation in Marina el-Alamein in 2017 (Polish–Egyptian Conservation Mission). *PAM*, 27/1, 67–83

Czerner, R. and Medeksza, S. (2010). The Commodus monument from House H21C in Marina el-Alamein. *PAM*, 19, 98–113

Jakubowski, P. (2008). *Rozwiązania konserwatorsko-aranżacyjne wnętrza Kościoła św. Anny w Różanie na tle estetyki neogotyckich obiektów sakralnych na Mazowszu* [Preservation and arrangement solutions in the interior of St Anna's Church at Różane against a background of aesthetics of neo-gothic sacral objects in the Mazovia district]. Warsaw: Jakubowski [in Polish]

Medeksza, S. with contributions by G. Bąkowska, R. Czerner, and P. Zambrzycki (2010). Marina el-Alamein. Conservation work in the 2007 season. *PAM*, 19, 81–97

Medeksza, S., Czerner, R., Bąkowska, G., Grzegorek, W., Kucharczyk, R., Lis, J., and Zambrzycki, P. (2011). Marina el-Alamein. Polish–Egyptian Restoration Mission: Conservation work in 2008. *PAM*, 20, 103–128