

Barbara Wrońska Kucy

Marea 2005 : Masonry Conservation Report

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MAREA 2005 MASONRY CONSERVATION REPORT

Barbara Wronska Kucy*

Conservation of the masonry structures excavated within the Basilica by the Polish Archaeological Mission in Marea¹ began on August 23 and was completed on September 7, 2005. Project objectives included securing and stabilizing the masonry structures associated with the basilica apse and the pottery kiln excavated underneath the apse in order to make possible future conservation of the brick kiln and the graves located beneath the apse floor, and a partial reconstruction of the apse stairs. This work is the first phase

of the restoration program planned for the basilica complex.

Miscellaneous work conducted during this season included replacement of the mortar joints in structurally unstable sections of the basilica walls, and replacement of temporary mortar joints installed on an emergency basis during earlier excavation seasons.

In addition to the above, an outline of future tests and conservation methods was developed for the duration of the excavation season of 2005 and 2006.

EXISTING CONDITIONS AT THE BASILICA/KILN COMPLEX

A limestone wall supporting the floor of the apse was set inside the pottery kiln and partly over the kiln grate; it extended into the kiln on both ends. This wall was constructed of randomly-laid, large limestone blocks, the irregular bond indicating its infill character. The excavated

height of this wall was approximately 2.50 m. A layer of approximately 0.40 to 0.60 m sand, clay and limestone infill separated the top of this wall from the stairs of the apse. All of the interlocking structures (wall, kiln, and apse stairs) were unstable and in danger of collapse [*Fig. 1, top*].

* Bone/Levine Architects, New York

1 The project was conducted under the direction of Mrs. Barbara Wronska Kucy, and supervised by conservator, Mr. Abdelhaye Shehata Abdelfatah, delegated by the Supreme Council of Antiquities. For the excavations directed by Dr. Hanna Szymańska and Mr. Krzysztof Babraj, see report above, in this volume.



*Fig. 1. The apse of the Basilica before (top) and after conservation in 2005
(Photo J. Kucy)*

DESCRIPTION OF THE WORK

The first stage of the work required temporary wood shoring to be installed to support the random-block wall and the stairs above to create conditions allowing for the structural stabilization of the wall and associated structures. A wood platform was erected to provide access to all wall areas.

The masonry joints between the stone blocks were cleaned and repointed for structural stability of the wall. Missing sections of the wall were restored with limestone blocks to support still further the wall above.

For the same purpose, a reinforced concrete beam was installed in place of the sand-and-clay infill above the wall. It was supposed to brace the wall, relieve the kiln walls at the stairs area, and create adequate substructure for future reconstructions, as well as to allow for exploration of the kiln bottom during the season of 2006 [*Fig. 1, bottom*].

Guidelines and procedures for removal of the temporary shoring were established, for the work to be completed under the supervision of the Egyptian conservator.

Miscellaneous conservation work included replacement of the mortar joints in the pastophory walls, and replacement of some of the cement patches on the apse stairs.

Conservation guidelines for additional work in the apse/kiln area and selected masonry sections of the Basilica for the 2005 season were established and include:

1. Reinforcing of the brick kiln grate edge to prevent further deterioration:
- a. Testing of mortar joint replacement: cleaning of approx. 0.60 m of the kiln edge, using brushes, water cleaning method, and non-destructive removal of deteriorated mortar joints. Installation of new mortar joints with the mortar matching original in color and hardness, one being mortar for fired brick, to provide structural support (1 part white Portland cement, 1 part hydrated lime, 6 parts sand, by volume), and the other non-structural mortar for joint replacement (1 part hydrated lime, 3 parts sand).
- b. Based on approved test, replacement of remaining mortar joints along entire kiln grille edge.
2. Testing of consolidation of the perimeter (outer) wall of the kiln (dried mud brick) with PRIMAL product, as per manufacturer's recommendations and directions of the Conservator. Test approximately one meter wall, both sides and top edge.
3. Testing of consolidation and repairs of the stucco on apse walls: using an approved consolidator as PRIMAL, as per manufacturer's recommendations and directions of the Conservator. Protecting of the edges of the stucco with mortar.
4. Removal of "gray" mortar joints (emergency repairs during the season of 2004) and replacement with mortar formula to match original in appearance and hardness (see item 1-a above).
5. Installation of additional shoring in the vaulted crypt inside the apse.