

Dakhleh Oasis Project

Columbia University

Excavations at Amheida 2006

Conservation of mural paintings

Summary of research and treatments

Each form of preservation of the murals from Room 1-- *in situ* on the walls of the villa, on large blocks, on small blocks, and as fragments--has created various conservation problems. The nature of the conservation problem and the treatments carried out in 2006 are summarized.

1. Paintings *In Situ* in the Villa. In 2004, the murals were conserved through “minimum intervention.” After cleaning, they were sprayed with a 4 percent solution of *Acryloid B72*. Unstable borders were strengthened with *Hydroseal* (75 percent). Very unstable areas were supported with facings made from crepaline or tissue and adhered with *Acquazol*. Many borders were further supported with mud mortar

During 2004, it was confirmed that the lower half of the walls are quite wet and thus subject to efflorescence of salts and other agents of deterioration that use water as the vector.

Following treatment in 2004, the murals were backfilled by erecting a wall of mud bricks parallel to the paintings and filled with sand as the insulator. In 2005, the walls and backfill were adjusted, and a light roof was placed over the room to deter visitors.

In 2006, the backfill and the roof were removed. It was found that the backfill system and roof did not act as complete barriers between the murals and the very harsh environment of the room. Additionally, the lower half of the room remains wet and subject to extreme efflorescence of salts. Another unexpected conservation problem is termites (or termite-like) insects that have tunneled into the some areas of the murals.

During 2006, the insects were controlled by hanging bags of mothballs on the murals and by covering the murals, with mothballs hung under the covering. Unstable areas of plaster and paint were treated again using the materials and techniques employed in 2004. At the conclusion of the 2006 season, the room was fully backfilled with clean sand.

The conservation treatments in the villa were carried out by the author and two Egyptian conservators.

2. Large and Small Blocks. The mural paintings of the *reception hall* are quite difficult to treat because they are thinly painted on a thin white ground that is poorly attached to the mud mortar. The refractive index of the white ground and paint can be permanently altered to beige with most convention materials of conservation. In 2005, the author and Prof. Richard Wolbers, University of Delaware, carried out several experiments the goal of which was development of treatments to remove the murals safely from the bulk of the detached blocks without changing the tonalities of the colors. A removal system was developed that utilizes cyclododecane as a rigid facing. Once applied, the painted surface can be mechanically detached from the block and then placed in *Conservare OH*, an inorganic ethyl silicate-based consolidant. Over several months, the cyclododecane will evaporate away. In 2006, all the painted blocks collected in 2004 were treated. .

3. Treatment of the Fragments. Each of the 125 trays of fragments were examined , cleaned and all pieces sorted by color and form. In 2005, Helen Whitehouse (Ashmolean Museum) had reconstituted several scenes from fragments and had initiated a data base for the trays of fragments. In 2006, other scenes were reconstituted. A data base was completed for the trays of fragments, including overall and detail photographs of each tray. The trays are now stored on annotated shelves that relate to the database. This work was carried out by team members Karen Green, Delphine Renaut, and Susanna McFadden.

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