

NAQLUN 2001: WALL-PAINTING TRANSFER AND CONSERVATION

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The objective was to transfer a mural painting representing the Virgin and Child in the central niche of the main *haikal* in the Church of the Archangel Gabriel at

the monastery of Deir-el Malak Gubrail in Naqlun, in the Fayum Oasis (*Fig. 1*).¹ Once this was accomplished it was possible to study the painting underneath.

CONDITION OF THE PAINTING

The painting, discovered in 1995 under layers of undecorated plaster, was in a very bad condition, having suffered considerable damages during the various stages of the church's building history. The original plaster was cracked in several places and detached from the painting underneath, practically hanging only at the edges. A larger crack had divided it into two major pieces and several smaller ones. A big part of the composition was missing (40%), including fragments of the Virgin's head. Intentional hammering in preparation for re-plastering was in evidence. The paint layer was covered with a thick layer of soot and grease from candle smoke, incense and chrism, which are common agents of deterioration for wall paintings, especially near the main altar, making lines and colors illegible. Several scratches were observed,

including an Arabic graffito. The green color was very flaky. Red and black were powdered. The upper part of the framed niche was partially washed, as a consequence of water seeping in from the window (which is no longer the case after the blocking of the window).

The painting underneath, which was visible through the gaps, bore testimony to an earlier decoration not found in other parts of the church. The colors were clean and bright and it seemed that a cross had been represented in the niche before.

Consolidation *in situ* was unacceptable from the beginning. Injections of glue between the two layers would have certainly caused irreversible damage to the earlier mural, the consolidating agent penetrating through all the inner layers and ruining them in the process. It was

1) In preparing this provisional report, the author has availed himself of the following literature (in chronological order): E. Parandowska, "Coptic Wall Paintings in Naqlun, Egypt", *Biuletyn Informacyjny Konserwatorów Dzieł Sztuki* (The Conservators-Restorers Bulletin, English Version) (1993), 16-19; W. Godlewski, "Deir el Naqlun, Quelques observation historiques", *Actes du IV Congrès Copte, Institut Orientaliste de Louvain*, vol. 40 (1992), 178; J. Dobrowolski, "Naqlun-Deir-el-Malak Gubrail: The existing monastic complex", *Nubica I/II* (1990), 163; N. Hewinson, *The Fayum. A practical Guide*, (Cairo, 1989), 157-60; S. Baltoyannis, "Conservation and Restoration of the Wall-paintings in the Church of the Protothronos, Naxos. Part I, Removal of the painting." *Studies in Conservation* 21 (1976), 51-62.



*Fig. 1. Wall-paintings in the central niche of the church apse, before conservation
(Photo C. Calaforra-Rzepka)*

therefore decided to transfer the upper paint layer.

What made the operation different from others of the same kind was the presence of a painted frame around the niche. This

precluded fixing the facing layer directly to the wall and encumbered access. Neither was it possible to separate the painting from the back as there is a fairly thick defense wall surrounding the church.

EXAMINATION OF THE PAINTING TECHNIQUE

The wall supporting the painting is made of mixed material, 80% of red brick, some mud brick and limestone, and wooden beams. Dating the building is still an open issue – it is probably from the 7th-8th century. The transferred painting was executed on a single layer of lime-sand plaster (0.5-3 cm thick), finely tempered with small amounts of ivory and vegetal black. The surface was smooth and well prepared, probably with a thin layer of very fine lime-sand mortar applied.

The painting technique is *al secco* with Arabic gum as a possible binding medium. This has been considered a traditional technique in the area ever since antiquity, but unfortunately cannot be confirmed in this case because of the degree of mineralization and the state of preservation.

The color palette was limited: iron oxides (red and yellow ochre), black (mixed ivory and vegetal black), and copper green (probably atacamite). The white of the background was also used as a color.

The painting technique reveals similarities with the Byzantine way of painting. If partly damaged, the paint layer may give an impression of transparency, but originally it must have been thicker and stronger. The contours were sketched “freehand” without preparation, the composition being adapted to the shape of the niche. More attention was paid to the faces and hands, while the dresses and background received little but schematic treatment.

The painting is part of a larger composition representing the Twelve Apostles, *Maiestas Domini*, St. Atanathios and St. Mark, dated to the 11th century.

PREPARING FOR THE TRANSFER

Once the technical examination had enabled the selection of the most suitable materials, preliminary work for the actual transfer began. Protecting the painting was vital before any other steps were undertaken. It was done by covering the entire concave painted surface, first with a protective facing of Japanese tissue, then fine cotton gauze and, finally, two layers of linen canvas, made to adhere with a water

solution of Bresciani polyvinyl alcohol. This step had been taken by restorer Ewa Parandowska immediately after the discovery of the painting under layers of undecorated plaster in 1995.

The frame of the niche was cleaned with acetone and a water solution of Contrad 2000 (Bresciani, Italy), fixed with Primal E330, then protected with Japanese tissue and paraloid B-72 in toluene.

METHOD OF TRANSFER

The fundamental rule to be observed in stripping any wall painting is to preserve the form and plasticity of the work exactly as it was in its original setting. Here, the problem was to keep the curvature of the interior surface of the niche. A reinforcing framework was therefore constructed in the following manner.

The inside niche contour was traced and copied on a 6-mm plywood panel. Then the outer shape was cut out and divided in two, following the major crack in the painting. A wooden skeleton frame was made to match the shape of the concave niche, then the plywood board was bent and attached to it. The idea was to hold and eventually pull the stripped plaster, while cutting and transferring.

One of the difficulties was that the inner surface of the niche was wider than the outside borders. This meant that the supporting construction would not enter in one piece or else that the construction with the transferred painting could not be taken out in one piece. Thus, it became clear that the painting had to be divided, into at least two or the actual three sections. The division lines were defined considering the original and taking care to avoid damaging the composition aesthetically.

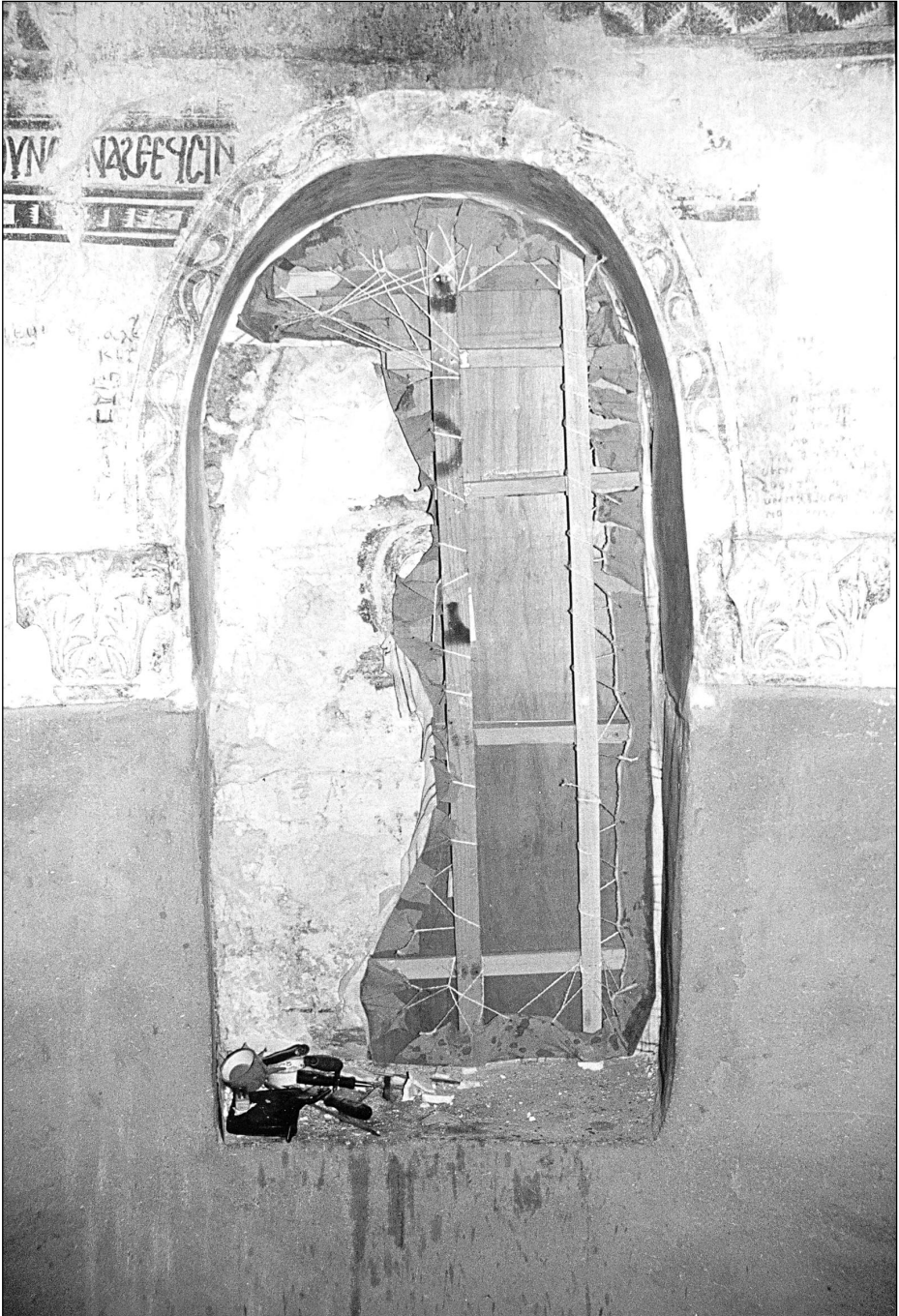
The chosen method was "*stacco*", a technique that requires the mural painting to be transferred together with the original plaster. The facing canvas was bigger than usual and extended about 5 cm beyond the original layer, covering the borders of the wooden frame and firmly attached to it. Then one fragment of the painting was separated from the rest without any problems (it just hung there by the edges), but in the second case, long chisels and a hammer had to be used to

separate the original plaster from the wall, especially in the upper part, where the earlier paint layer was not preserved (*Fig. 2*).

After completing the stripping, the earlier paint layer (representing Christ on the cross, *Fig. 3*) was dry-cleaned with natural and fiber-glass brushes, soft gums and wihsab sponges. Tampons of acetone and alcohol solutions were used for chemical cleaning of the paint layer. Then the surface was fixed with a 2% paraloid B-72 (Rohm and Haas) solution in toluene. The plaster was consolidated with injections of Primal E330 (1:3 water solution) and Primal AC-33 (1:3 to 1:1 water solutions) for larger voids and cracks. The glue injections were preceded by alcohol injections (40%) for better penetration of the consolidant.

Once the painting was consolidated, the cracks and empty spaces were filled with new plaster. The composition of the mortar was 1 part of lime to 4 of sand, with a small addition of Primal E330 for more elasticity. The smaller gaps and cracks were filled with Italstucco (prod. Ditta F. Follador-Milano). The retouching and final aesthetic arrangement was postponed to the next season, once it will have been made certain that nothing is happening with the representation of Christ.

The transferred painting had to be prepared for future display as a self-standing object. For this purpose, the original plaster had to be leveled to a 5 mm thickness, impregnated with Primal E330 (1:3) and smoothed with lime-sand mortar with the addition of Primal E330. Two layers of cotton gauze and a layer of linen canvas were stuck with Primal AC-33. Then, a layer of ground (calcium carbonate with Primal AC-33) was applied, followed



*Fig. 2. The painting of the enthroned Virgin in the process of being transferred
(Photo C. Calaforra-Rzepka)*



*Fig. 3. The earlier wall-painting representing Christ on the cross
(Photo C. Calaforra-Rzepka)*

by a thin layer (5 mm) of polystyrene foam glued with polyvinyl acetate (Hochest Movilith DMC2) as an intervention layer which permits the reinforced original painting to be detached easily from the composite structure.

The last mentioned was made of yet another layer of linen canvas stuck with Movilith DMC2 to the intervention layer. This was followed with another layer of mortar (calcium carbonate and Movilith), then a thick layer of shellac. Sand was spread while the resin was still liquid in order to make an abrasive surface for better adhesion of the epoxy resin. After drying, the loose sand was cleaned from the surface

with a natural brush. A layer of fiberglass fabric (100 g per meter) was stuck with Epidian 5 epoxy resin, the same that was used to fix the honeycomb aluminum panels under pressure until dried. The last layer was made of fiberglass fabric stuck with epoxy resin.

The facing was removed from the paint layer carefully with hot water compresses, waiting as the polyvinyl alcohol dissolves. The soot, grease and dirt were cleaned using cotton tampons with Contrad 2000, ammonium carbonate, acetone, toluene.

The final aesthetic finishing of both layers has been postponed to the next season.