

CONSERVATION FOR PRESENTATION: A KEY FOR PROTECTING MONUMENTS

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ABSTRACT

The abandonment, neglect, poor planning or inadequate presentation of cultural heritage are common occurrences. In some cases, the only way to prevent destruction and abandonment is to undertake treatment specifically designed for public consumption, with the aim of recovering forgotten or undervalued heritage. Accepting this premise, in certain circumstances conservation treatment suggests technical solutions that are closer to restoration than conservation. This type of situation has occurred several times in the course of the activities of the Center for Archaeological Conservation, Rome, and has been approached as described below. The interventions were carried out in Israel in the Large Baths and Liscat Hamefaked in Masada, and in Radà, Yemen, in the Madrasa Amiriya. A case still in progress, the conservation of gigantic stone statues from the tenth century BC from Cabras, Sardinia, Italy, concludes the paper.

INTRODUCTION

When one speaks of cultural heritage, conditions such as abandonment, neglect and poor planning or presentation are quite common. They represent some of the most dangerous elements acting against the conservation of cultural properties. In contrast, the accomplishment of intervention specifically for public consumption and aimed at recovering forgotten or undervalued heritage is sometimes the only way to save a monument from abandonment and destruction. Likewise, improving the legibility of a work through conservation/restoration treatments in order to facilitate transmission of the cultural message it contains is a highly efficient way to return its meaning and guarantee its future.

Given this premise, and indeed precisely in order to restore a monument's legibility, when a conservation treatment is planned, certain circumstances, such as the nature or condition of the monument and its future destined use, suggest technical solutions that are closer to restoration than conservation. This type of situation this has occurred several times in the course of the 25 years of activity of the Center for Archaeological Conservation, Rome (CCA), and has been approached in the ways described below.

THE LARGE BATHS AND LISCAT HAMEFAKED, MASADA, ISRAEL

The discussion will begin with two cases at the site of Masada, Israel, where a major excavation campaign in the 1960s brought to light the first-century ruins of Herod's northern palace, with the adjacent Large Baths and a building known as Liscat Hamefaked. The Large Baths contained typical decoration and spaces, such as the *frigidarium*, *apodyterium*, *tepidarium* and *caldarium*, complete with wall paintings, *opus sectile* pavements and auxiliary structures, including the furnace and all the clay tubing elements required for hot-air circulation beneath the floors and inside the walls [1, pp. 76–101; 2, pp. 21–35, 153–161, 193–200, plate IV]. Liscat Hamefaked, identified as likely to be the residence of a high-ranking military officer, was found to have wall paintings with geometric decorations [1, pp. 184–189; 2, pp. 19–20, plates II–III].

As often happens in the case of major archaeological excavations, the scale of the excavation work was not equalled by a similar level of effort for conservation and enhancement. The result was that the Large Baths were restored and equipped with a walkway for visitor access, albeit leaving the largest and most interesting room — the *caldarium* — in a state that was incomprehensible to the public, to say the least. In contrast, the structures of Liscat Hamefaked were never restored, and the frescoes, detached from the walls with the 'strappo' and 'stacco' technique, (consisting of removing the uppermost strata of the

intonaco: the colour and the *intonachino*), were rolled up on canvas supports and languished somewhere in the basement of a museum in Jerusalem. After removal of the paintings, the wall structures were abandoned and slowly almost disappeared to the point where the monument was practically never appeared on the visitor's route.

The Large Baths

Some 30 years after the excavation and public opening of the Large Baths, they were again restored because there were problems with ineffective rainwater drainage, the heavy presence of cement used during previous restorations, the deterioration of materials used on the frescoes and the stress caused by escalating visitor numbers. In 1996, the National Parks Authority and the Antiquities Department of Israel asked the CCA to restore the entire building, from the pavements to the roof, including the wall structures complete with their decoration. Besides these interventions, a problem of legibility was immediately evident in the principal room of the baths, the *caldarium*.

As is known, the hot room of a bath complex had a pavement made of large terracotta tiles (*bipedali*), about 60 cm square, supported underneath by short circular tile pillars about 50 cm high. A marble slab pavement was laid over this foundation. The walls had vertical quadrangular terracotta pipes (*tubuli*) inside them and were covered with frescoed plaster. In their original use, the empty spaces created by the pillars beneath the pavement and inside the *tubuli* permitted the circulation of hot air, which was introduced through a subterranean channel that connected the room's interior with a furnace close at hand. The collapse of the plaster, most of the *tubuli* and the floor had destroyed the evidence of how the system worked and the meaning of the room. The creative explanations invented by tour guides for visitor groups confirmed this difficulty and highlighted the existence of a problem of legibility and interpretation of the monument.

In this case, the message of greatest historical interest is linked to the presence of a bath complex in the middle of a desert, in an environment where water and firewood are scarce commodities. It is therefore of fundamental importance that the more than 1000 visitors who daily pass through the building's rooms understand not only the typology of the spaces but also their function from a technical viewpoint. The large hall, the *caldarium*, was the place where gentlemen or the military would gather to enjoy the sense of well-being provided by an enormous sauna in the middle of a desert that was bitterly cold in winter or scorching hot and dusty in summer. For visitors passing through the building in a long, orderly line without being able to understand all this, it was a rather tiring and frustrating exercise. For this reason, it was decided that the new treatment of the Large Baths would not only involve restoration of the structures, but also include some interpretive initiatives to help visitors understand the nature of the building and how it worked.

To resolve the legibility problem, one idea was to set up an information point outside the building with descriptive panels and a scale model of the original structure. Another idea discussed was to provide visitors with either a free illustrated pamphlet or a more extensive publication they could buy from the site's bookstore. Although printed information for distribution and information points were certainly valid approaches that would help people to understand the site, it was eventually decided to



Fig. 1 The Large Baths, Masada, Israel. A model of the suspended floor and of the hot air circulation system on the walls, during restoration in the *caldarium*.

adopt a solution that could be implemented during the contract period (before the CCA left the country) and not put off until the future (as would be the case with publications or an information point) the important topic of the interpretation and presentation of the *caldarium*.

It was therefore decided to integrate a portion of pavement and wall, joining original elements still *in situ* with reproductions of the originals. Twenty-four small pillars were repaired and brought up to their original height by using round terracotta slabs and a mortar of slaked lime and tufa powder in a ratio of 1:2. The restored parts of the pillars were plastered to distinguish them from the original. Over these, 22 terracotta *bipedali* (60 × 60 cm and 5 cm thick) were positioned. The floor area thus created was spread with a double layer of mortar composed of slaked lime, tufa powder and stone powder (1:1:1), as had originally been used as the setting bed for an *opus sectile* pavement. To demonstrate how air circulated in the walls, a section of wall was reconstructed by applying 80 terracotta *tubuli* covered by a double layer of plaster, the original rendering for either wall paintings or stone cladding.

In total, 8 m² of floor were reconstructed and 6 m² of wall. Fig. 1. A cross-section of the structures as they used to be was thus created and visitors and especially guides now have a tool that helps them in reading the monument and understanding how this part of the baths functioned. Today, on entering the Large Baths from Masada's esplanade, where extreme temperatures, dust and wind make every outdoor moment a challenge, the visitor has the opportunity to appreciate the level of wealth and well-being of those who, at the turn of the first century, built Masada's edifices, and to fix — on the basis of material evidence — a small piece of the puzzle of the site.

Liscat Hamefaked

During discussions with archaeologists at the time of the intervention in the *caldarium* in the Large Baths, and following the study of excavation records from the 1960s, an interesting discovery emerged. In the immediate vicinity of the Large Baths, the archaeologists had excavated some rooms decorated with wall paintings, but little evidence existed of them except a few excavation photographs and a distant memory of a detachment by *strappo*. After considerable research, some rolls of canvas surfaced in the basement of a museum, stacked on old cabinets. They were the polychrome roman mural frescoes detached from a building called Liscat Hamefaked 30 years before by using a double strata of canvas applied with *colla cervione* (animal glue). The panels were numbered 1 to 30 during the excavation. Only panels from 14 to 30 were recovered, involving about 25 m² of paintings corresponding to three rooms of the building.

Starting from that point, and considering that little remained standing of the house where the wall paintings had been, the question was what to do with the canvas rolls and 'former frescoes' and what would be the scope of any intervention. Two options were considered in this case, both based on the idea of reapplying the wall paintings on mobile supports: the first was to display them in a museum; the second was to put them back where they had once been. The first solution would have followed the principle by which the wall paintings had definitively lost their context and had become simple movable objects for museum purposes; in contrast, the second would have attempted to reconstruct a lost context of architecture and wall treatments and insert a new monument into the visitor itinerary. The second option would require a much greater technical and scientific commitment, but given the site's typology (there are only four places in Masada where one can see wall paintings) and the historical importance of the monument, this option was chosen and the panels were packed and shipped to Rome for conservation.

The canvas and the glue were still in good condition; the *intonachino* was almost completely lost and almost only the colour glued to the canvas was left. Once the panels were accurately documented, a preliminary dry cleaning was implemented. After this, the colour was consolidated by applying a 10% solution of Primal AC33 and a layer of lime mortar was applied in order to obtain a flat, homogeneous surface. A new *velatino* (canvas textile) was applied on this mortar stratum and the canvas applied during the 1960s was removed using water vapour.

A new *velatino* was then applied to the painted surface using a 15% solution of Paraloid B72, and a 10 mm sacrificial layer was applied on the reverse side of the fragments. This layer was made of lime mortar with an extra-light filler (Perlite) added and had a double function: it worked as a bridge between the original colour and the new synthetic support, and at the same time was an easily reversible layer in case this would be required in the future.

After the removal of the *velatino*, the cleaning of the painted surfaces was carried out by using poultices of ammonium carbonate, diaminoethanetetraacetic acid (EDTA) and NeoDesogen, (30 g, 25 g, 10 cc, in 1 L of distilled water) applied with household tissue paper for a period of three minutes. The paintings were finally set on 15 mm aluminium honeycomb support by using Araldite AV5308, applied on the sacrificial layer.

Once back in Masada the panels were replaced in the original position, screwed to metal support on the walls, in a roofed new building placed on the main visitors' route. For this purpose, using the excavation records, the walls were rebuilt sufficiently high to support a roof and the visitor route was redesigned so that the new building was included in the main itinerary, which was followed by more than 500,000 visitors a year, Fig. 2.



Fig. 2 Liscat Hamefaked, Masada, Israel. One of the rooms after the re-application of the wall paintings.

MADRASA AMIRIYA, RADÀ, YEMEN

Radà, in Yemen, with its Madrasa Amiriya built in 1508 by the Taharid dynasty, is located 2000 km south of Masada. The Madrasa, with its architecture and about 1000 m² of wall paintings in the prayer hall, represents a jewel of Islamic art [3]. Abandoned in antiquity, the building has suffered all kinds of vandalism over the centuries. As an example, a recent habit in the town was to fire off entire rounds from automatic weapons against the monument's walls. Squatters, theft and fire completed the work of destruction.

Thirty years ago, the Madrasa captured the attention of a scholar, Selma Al Radi, who made the monument's recovery her primary goal in life. After 25 years of work, the architectural structure had been restored, but not the painted surfaces. With many lacunae, covered with deposits of soot and dust and almost entirely detached from the wall support, the wall paintings seemed doomed. However, restoration of the paintings, together with the organization of related activities, represented the missing link necessary to bring the monument back into daily use for either worship or tourism.

To achieve this result, a two-pronged strategy was decided upon: one was technical, for restoration and pictorial integration of the paintings; the other was cultural, creating conditions for future use of the monument that would be compatible with conservation, as well as a programme for sustainable maintenance.

All the surfaces were dusted with sable or soft-bristle brushes. Where whitewash thickly covered the paintings it was necessary to remove it mechanically with scalpels. In the areas where there were denser layers of dust, the cleaning was performed with 'Wishab' (now Akapad) sponges. In the areas affected by lamp black deposits and carbonated layers, it was necessary to make repeated applications of a solvent mixture of ethanol, ammonia, acetone (propanone) and water, left to act on the surface through paper tissues for a few minutes.

Where the paint was raised, the flakes of colour were re-adhered to the plaster by impregnating them with acrylic resin diluted in water. Consolidation of detachments between the plaster and the wall support called for the use of a consolidating material based on hydraulic lime, which was injected with syringes. The lacunae in the plaster were stuccoed with a mortar made of lime and gypsum. Pictorial integration of the lacunae was performed entirely with watercolours, distinguishing the areas that could be integrated by reconstructing missing motifs from those that could not be integrated because they were too large.

Lacunae surrounded by well-conserved pictorial features were thus integrated by reconstructing the lost motif, leaving a slight undertone of the colour so that the treated area could be recognized up close. In contrast, the larger lacunae were treated with a background colour that blended with the general tone of the surrounding painting, without reconstructions, creating a uniform plane behind the surviving colours and allowing the forms to emerge. The result of the restoration treatment as a whole was to recover a monument that was virtually lost and return it to daily use by worshipers and the public, Figs 3–5.

The cultural initiatives organized alongside the technical treatment were of two types and differed in their objectives. A group of six local operators took part in the restoration work and received a training course lasting two years. At the end of the course, the group received public recognition from the local authorities and professional conservation figures in the course of an international round-table held at Sana'a on the theme of 'Conservation and enhancement of the cultural heritage in Yemen'. The event was attended by ministers, representatives of the diplomatic corps and representatives of international conservation organizations. The second initiative was to publish 5000



Fig. 3 Madrasa Amiriya, Radà, Yemen. The painted north eastern dome as it appeared in 2000.



Fig. 4 Madrasa Amiriya, Radà, Yemen. The painted north eastern dome after conservation.

copies of a volume that describes the Madrasa and its conservation treatment in English, Arabic or Italian, as well as 48000 postcards to be sold at the Madrasa itself.

The course was intended to train a group of local technicians who could carry out the maintenance plan for the Madrasa. The international meeting was meant to support the initiative and give the local technicians official recognition. The production of the books and postcards and their sale at the site was meant to create a way to finance ongoing maintenance of the monument. In 2007 the Madrasa Amiriya restoration project was given the Aga Khan Award for Architecture.

MONTE PRAMA, SARDINIA, ITALY

The last case of this overview in chronological order is in Sardinia and involves a group of 5000 stone fragments from an



Fig. 5 Madrasa Amiriya, Radà, Yemen. A view of the prayer hall after conservation.

unquantified number of gigantic statues (with an average height of 2.5 m) depicting archers, boxers, warriors and models of prehistoric *nuraghe* (cone-shaped stone towers). These can be traced to an as-yet undefined period, which goes from the tenth to the seventh century BC [4].

The fragments were found during an archaeological excavation in the early 1970s, focusing on a sacred area in a Nuragic zone. Straight after the excitement over the discovery, the fragments (except for three pieces displayed at the Archaeological Museum of Cagliari) were deposited in a basement store. What could have been a dramatic discovery, capable of throwing light on the origins of the Nuragic civilization (and notwithstanding the fact that the fragments were the only stone sculptural representations ever found on the island), incredibly, the find was temporarily forgotten. More than 30 years later, some journalistic indiscretions dusted off the news of the discovery and fed a series of blogs on the web, which soon became a powerful, grass-roots movement capable of activating the machinery of public administration. Soon, a recovery program was begun and entrusted to the CCA in November 2007. The objectives defined in the title were: documentation, restoration, conservation and museum display.

The programme consists of a ‘new excavation’ among the mountain of cases containing the fragments, with the objective of remounting some of the statues and the goal of understanding this unique phenomenon, which is of fundamental importance in reconstructing the history of the Nuragic peoples, Figs 6–7.

Thanks to the conservation treatment, the statues of Mount Prama are again a topic of interest; funds have been made



Fig. 6 Monte Prama, Sardinia, Italy. Some of the 5000 fragments of the prehistoric statues.



Fig. 7 Monte Prama, Sardinia, Italy. One of the sculptures representing the bust of a boxer.

available for a complete intervention and future museum display, and the conservator-restorers have been given *carte blanche* to organize programmes of information and diffusion that can involve the public and young people by drawing them into the project. The project accepted by the administration is heavily oriented towards study and documentation and towards communication and information: a good 20% of the budget is earmarked for these activities.

The programme is well under way and will conclude in the autumn of 2008. Currently, documentation of the fragments, cleaning with atomized water and first attempts at matching joints are being undertaken. The worksite is open to the public, and for this purpose a welcoming gallery has been prepared (Fig. 8), a dedicated web page has been posted and activities have begun for schools, citizens and the media. Thanks to the conservation



Fig. 8 Monte Prama, Sardinia, Italy. ‘The Gallery’, a laboratory open to the public (rendered image).

treatment and through information activities, the sculptures of Monte Prama have become news and have slowly started to be discussed. In a few months the results of the intervention will be finalized with a new exhibition, in which the statues will again be upright and visible to the public after almost 30 centuries of burial and 30 years of oblivion in a storeroom.

CONCLUSION

As is well known from personal experience, cultural heritage is often in a seriously deteriorated state. Even more frequently, it is maintained in such a way as to make it almost impossible to understand its historic message. Often the situation does not improve even after a so-called 'conservation' treatment, because little attention has been paid to the monument's legibility and enhancement of the historical message contained in the work.

In contrast, conservation makes it possible to reconstitute the link between knowledge and transmission of the historical information that is typical of cultural heritage — a link that has weakened with the abandonment and neglect of centuries. With the two interventions at Masada, we attempted to make the monuments comprehensible to the public — monuments that otherwise would have been either mute or completely unknown. With the Yemen project, the conservation treatment has brought back to life a monument that would otherwise have been lost, and technical and economic conditions have been created for its maintenance. With the current project in Sardinia, a precious historical legacy is being restored to the island's culture and, through a programme of public involvement, we are attempting to reach the populace, and, as the facts are demonstrating, even recover some missing fragments.

It is therefore crucial, and also feasible, for conservation treatments to keep in mind not only the technical aspects of restoration, but also, and especially, the cultural value of the heritage, legibility of the surfaces, comprehension of the historical message and circulation of information. Only by practical implementation of these values does a conservation treatment move from being a private matter between the work and the conservator-restorer and become an operation of social utility, meeting the expectations of its cultural role.

MATERIALS AND SUPPLIERS

Akapad (formerly Wishab) vulcanized latex sponges: Akachemie, Albert Kauderer GmbH, D-20457 Hamburg, Ellerholzdamm 50, D-20419 Hamburg, Postfach 11 19 29, Germany.

Aluminum honeycomb support: Ciba-Geigy, PO Box CH-4002, Klybecstrasse 141, Basle 4002, Switzerland.

Araldite AV5308; hardener HV 5309: Ciba-Geigy, as above.

Kleenex: Kimberly-Clark srl, Via Della Rocca, 49 10123 Torino, Italy.

NeoDesogen: Ciba-Geigy, as above.

Paraloid B72: Rohm and Haas, Corporate Headquarters, 100 Independence Mall West, Philadelphia, PA 19106, USA.

Perlite: Perlite Italiana srl, Alzaia Trento, 7, 20094 Corsico (Milano), Italy.

Watercolours: Winsor and Newton, Whitefriars Avenue, Harrow, Middlesex HA3 5RH, UK.

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