

Case Study

Modern Conservation Technique: Wall Paintings in the Valley of the Queens, a Testament to the Beauty of a Dual Conservation-Restoration Approach

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Abstract: Conservation-restoration's overall objective is the preservation, protection, and enhancement of historic values currently present in archaeological and cultural heritage. Conservative conservation-restoration influenced by modern restoration techniques, should be able to improve on previous conservation-only efforts. It is important to emphasize that whenever possible during the cleaning phases, the historical and aesthetic aspects of a monument are respected. This involves safeguarding restoration and conservation carried out in the past and preserving the original patina. This article presents a dual conservation-restoration approach because it is in this way that human artistry expresses itself: there is an *aesthetic aspect* derived from the innate artistic inspiration of the artist/painter and creators as well as a *historical aspect* placing the work in a determinate place and time. This technique differs from the conservation-only status quo currently practiced in the Middle East, in countries such as Egypt, which favor the historical aspect more than original aesthetics.

Keywords: Conservation, Archaeology, Egyptology, Conservation-Restoration, Ancient Egypt, Art, Nefertari, Conservation Science

1. Introduction

Throughout the centuries, Egypt has fascinated more than a few. How can we not be moved by the impressive size of its monuments and vast quantity of knowledge left within our grasp; the perfect harmony between nature and civilization translated in the architecture, reliefs, and paintings. However, these monuments – so precious – are doomed to disappear if we don't become aware of their fragility. Since the nineteenth century, the question of conserving cultural heritage has gone through several stages. At first, attention was given to the restoration of artifacts, ancient monuments and historic buildings.

In several countries, this resulted in the creation of official organizations for cultural heritage protection. Subsequently – especially after the Second World War – conservation was extended to entire historic sites.



Figure 1. The goddess of the west, Hathor is wearing the hieroglyph of the west on her head, flanked by Osiris and Anubis; detail from the wall paintings after conservation-restoration in the burial chamber.

Permanent conservation legislation was established in Great Britain, France and Italy in order to save heritage with historical and aesthetic aspects. This legislation was established in the Amsterdam declaration of the European Architectural Heritage in 1975, and in UNESCO in 1976 [1].

QV66 is the tomb of Nefertari, the Great Wife of Pharaoh Ramses II, in Egypt's Valley of the Queens. It was discovered by Ernesto Schiaparelli, the director of the Egyptian Museum in Turin, in 1904. It is often referred to as the Sistine Chapel of Ancient Egypt. Nefertari, which means "beautiful companion", was Ramses II's favorite wife; he went out of his way to make this obvious referring to her as, "the one for whom the sun shines" in his writings, as well as building the Temple of Hathor to idolize her as a deity, along with commissioned portraiture wall paintings.

In the Valley of the Queens, Nefertari's tomb once held her mummified body and representative symbolisms, similar to what most Egyptian tombs consist of. Unfortunately, in antiquity everything was looted from the tomb except for two thirds of the 5,200 square feet of wall paintings.

For what still remains, these wall paintings characterized Nefertari's character. Her face was given a lot of attention to emphasize her beauty, especially the shape of her eyes, the

blush of her cheeks, and her eyebrows. Some paintings were full of lines and color of red, blue, yellow, and green that portrayed exquisite directions to navigating the afterlife through to paradise.



Figure 2. Beautifully executed wall paintings of Nekhbet in Nefertari's burial chamber. Nekhbet 'nek, bet; also spelt Nekhebit) was an early predynastic local goddess in Egyptian mythology; who was the patron of the city of Nekheb (her name meaning of Nekheb). Ultimately, she became the patron of Upper Egypt and one of the two patron deities for all of Ancient Egypt when it was unified.



Figure 3. The entrance, second set of stairs leading to burial chamber; the plan, and general location of the tomb in valley of Queens.

2. Wall Painting Technique

The history of the technique of wall painting is of interest to both the restorer and art historian. It provides the restorer with the requisite knowledge to identify different techniques employed by the original creator(s). In the Neolithic period, the wall covering technique was to mix chopped straw with clay to ensure good cohesion during drying. Then, during the pre-dynastic period, Nile silt consisting of a mixture of sand and clay as well as a little natural calcium carbonate and gypsum (hib in Arabic) was employed.

Two different types of wall covering were found for the preparation of Egyptian wall paintings, depending on the nature of the support. When the support was made of smooth cut stone, the surface could be covered with a layer of gypsum, as evidenced in the wall paintings of Nefertari's tomb, a material known since prehistoric times and prepared by heating raw gypsum. When the surface of the wall was too irregular (most frequently the case in tombs of the New Kingdom) it was made smooth by a layer of silt and chopped straw topped with a layer of gypsum. What changed in the Nineteenth dynasty was the application of a thin layer of white wash on rough clay and straw [7].

Egyptian paintings were executed in tempera on a dry surface. Tempera is very sensitive to water. Different media may have been used for different colors mixed with Arabic gum, a gelatin base and some oxides (probably containing clay) that functioned as binding materials [2].

3. Conservation-Restoration

Conservation implies safely keeping or preserving the existing state of a heritage resource from destruction or change. The general concept of conservation implies various types of treatments aimed at safe guarding buildings, sites or historic towns; these include maintenance, repair, consolidation, and reinforcement.

The aim of conservation is to protect the cultural significance of the given object by maintaining the fabric from which the object is made. In practice, it means finding a way of conserving the physical form of the material that does the least damage to its character, or state of being. Thus the primary aim of conservation is to preserve the authenticity and integrity of the cultural resource.

Restoration has had several meanings in the past; the most commonly accepted definition was to return an object to its original form or appearance (to bring back lost qualities). In North America, the term is often linked to "period restoration," the re-creation of the aesthetic design concept of a building in a given period. In England, "restoration" was considered as negative or destructive treatment, following the debates led by John Ruskin during the second half of the nineteenth century. In Latin languages, "restoration" has often been used as a

general term related to the conservation of built cultural heritage.

Today, however, restoration has been given a specific definition as expressed in the Venice Charter – The International Charter for the Conservation and Restoration of Monuments and Sites (1964) [1].

The aim of restoration is not only to conserve the integrity of the cultural resource, but also to reveal its cultural values and to improve the legibility of its original design. The aim of modern restoration – to reveal the original state within the limits of still existing material – thus differs from the past aim of bringing back the original by rebuilding a lost form.

Many factors are involved in what we might call deterioration scenarios. The most important are without a doubt natural causes; variation in temperature, relative humidity, sand, wind, sunlight, rain and salt are but a few of the numerous reasons why monuments are (and were) damaged through the centuries. Another damaging factor is engendered by human intervention. In Egypt it was not uncommon to have local inhabitants populate temples during various periods of history. During these periods, fires were lit inside to cook and illuminate the space, producing soot layers on the walls and ceiling. Nowadays, tourism contributes a great deal to further decay. More and more, reliefs and wall paintings are touched as much out of curiosity as out of ignorance, and it has become habitual to take pictures with flash – without considering the consequences. The guardians of these monuments as well as tour guides have a great responsibility to increase the awareness of visitors and to teach others that these monuments are part of a collective world heritage, not just the property of Egypt. Numerous conservation interventions have been undertaken to reduce the consequences of these types of deterioration, however not always with success, as experience and skills can be found wanting.



Figure 4. The conservation-restoration team at work on different wall paintings in the burial chamber.

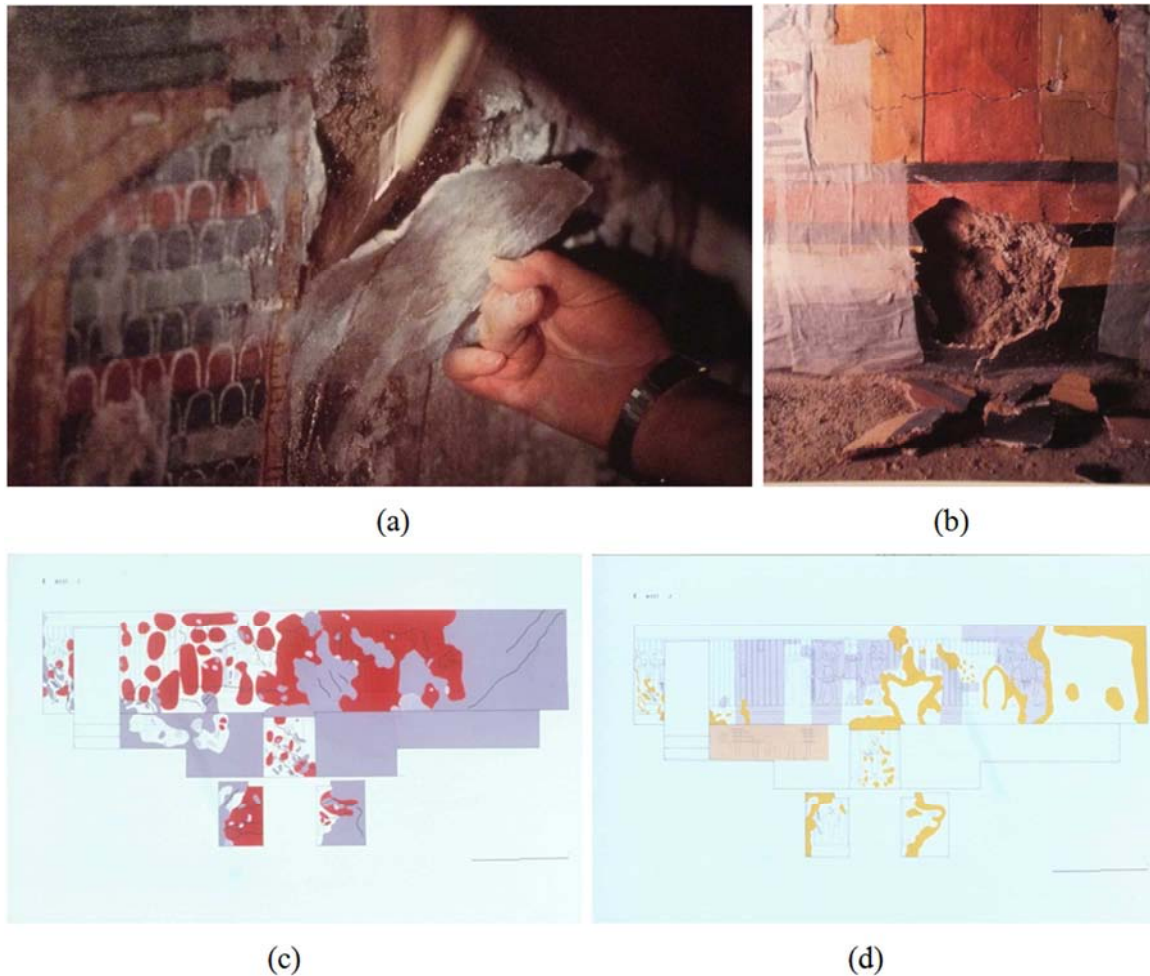


Figure 5. A separated (detached) paint layer; swelling of the paint layer and its losses, graphic indications of critical areas requiring conservation-restoration in red and previous interventions in yellow and purple.

There are several standard principles and methodologies that guide the conservation of cultural heritage, and these are implicit in the planning and execution of the conservation-restoration technique of wall paintings. Intervention processes are based on a thorough assessment of the paintings in question and their condition.

The choice of cleaning materials and methods depend upon the nature of the substances to be removed, and fundamentally upon the status of the wall painting.

Cleaning operations are never begun without previously identifying the techniques of the original artist/painter in order to determine the materials first used. In addition, cleaning operations are invariably begun on less important areas of the painting, leaving the more important ones – those that are the most delicate – for the final stages. The surface of a wall painting generally has a particular texture, which encourages the accumulation of dust particles on its surface. These are eventually incorporated into the paint layer, so that any attempt at removing them entails an abrasion of the surface of the painting, which destroys its luster [3].

The Crafts Council for Conservation Science publication, *Science for Conservators* defines dirt as a material that is in the wrong place and further classifies it in two ways:

1) Foreign matter, not part of the original object, such as

soot, grease and stains, but which has become fixed to it; 2) Products of alteration of the original material, e.g. calcium sulphate on the surface of limestone. A product of alteration forms through the chemical combination of the original material with chemicals from the environment. It would seem, in light of these definitions, that the removal of dirt – itself a product of alteration – may involve the removal of some of the surface. Even the removal of foreign matter, when pursued too far, can cause losses, e.g. dirt filling very fine cracks in a weathered surface. Therefore, the cleaning of masonry buildings must involve consideration of any immediate or potentially induced losses; the short-term result of potential cleaning must be weighed against the long-term result associated with leaving the dirt in place. Dirt-filled cracks and open joints may obscure different kinds of decay; e.g. heavy encrustations on sheltered limestone or marble altering the surfaces on which they form and encouraging deterioration [4].

4. Conservation-Restoration Technique & Case Study: A Dual Approach

Conservation-restoration presents a dual approach because

it is in this way that human artistry expresses itself: there is an aesthetic aspect derived from the innate artistic inspiration of the artist/painter as well as a historical aspect placing the work in a determinate place and time [3].

It is important to emphasize that, wherever possible during the cleaning phases, the historical and aesthetic aspects of the monument are respected. This may involve safeguarding restoration carried out in the past and preserving the original patina.

It is with this in mind, that conservative conservation-restoration based on modern restoration techniques should be able to improve on previous primarily conservation-focused efforts.

The conservation-restoration process starts with the segregation of very small, square sample areas of the wall.

These areas are used to conduct different tests, which then form the basis of a conservation-restoration plan for the project, including the study and documentation of the state of conservation of the monument. The purpose of this documentation is to define the exact characteristics of the monument, not only as they appear currently, but also as they were originally, and delineate what changes have occurred in the course of history.

This documentation should provide a detailed report of the results of the examination, revealing the technical structure of the monument and identifying alterations that the structure has undergone. These alterations may consist of the deterioration of materials or transformation by means of addition or restoration, which must be assessed both historically and critically.

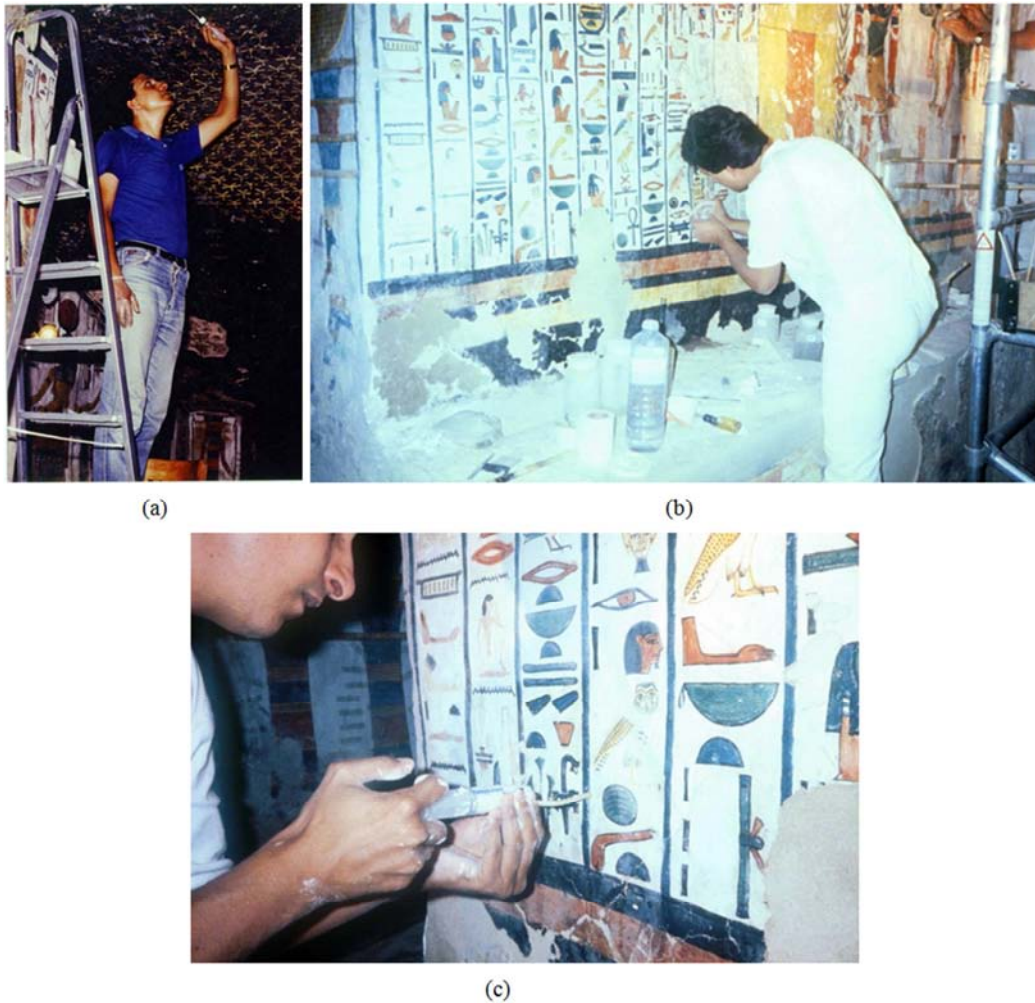


Figure 6. A conservator (the Author), during the consolidation phases of the wall paintings and ceiling.

One of the first conservation-restoration projects done in Egypt, based on modern restoration techniques, was the restoration of the tomb of Nefertari, in the Valley of Queens in Luxor in 1986. I was honored to be one of the conservators who participated in this groundbreaking and innovative project.

The tomb was first discovered in 1904 by the Italian explorer Ernesto Schiaparelli. Despite its vivid colors and

fairly good state of preservation, the tomb was found in a very precarious condition, primarily due to the poor quality of local limestone on which the paintings were applied. Unlike the limestone at Giza and Saqqara that permitted the carving of high quality reliefs, rock in Western Thebes is fracturous, either from seismic activity or the upswelling of shale deposits beneath the limestone.

The first conservation procedures were undertaken by Prof.

Lucarini, and through the years, many restorers – among them Stoppelaere in the 1930's, and Ahmed Youssef in 1934 – tried to preserve the paintings.



(a)



(b)



(c)

Figure 7. The process of wall painting conservation-restoration before and after.

Unfortunately, the results were not always what were hoped for, and the walls were often left even more damaged than before. The tomb remained closed, from its discovery on, until more serious attention was given to the sepulcher starting with UNESCO in 1970 and ICCROM in 1978.

In order to save this unique tomb, from 1986 until 1992, the Egyptian Antiquities Service in association with Getty Conservation Institute – directed by Italian and Egyptian experts – completed the most crucial conservation of the wall

paintings. The project was called, the Nefertari Conservation Project. It is generally believed that the tomb was repainted, but this was not the case – a conservation-restoration technique was employed which maintained the original colors.

Conservative conservation-restoration also includes the treatment of losses or damaged areas in mural paintings – practically approached, as with other monuments – with aesthetic and historical considerations paid heed. In addition, it includes a final retouching phase (a phase known and used in the past but never fully articulated or properly understood), which in this specific case, was aimed at veiling the abraded area (absence of color) to confer a uniform appearance to the walls.

The aim of conservation-restoration is not only to conserve the integrity of the resource, but also to reveal its cultural values and to improve the legibility of its original design. The aim of modern restoration – to reveal the original state within the limits of still existing material – thus differs from the past aim of bringing back the original by rebuilding a lost form.



Figure 8. Wall paintings in the burial chamber after conservation-restoration.

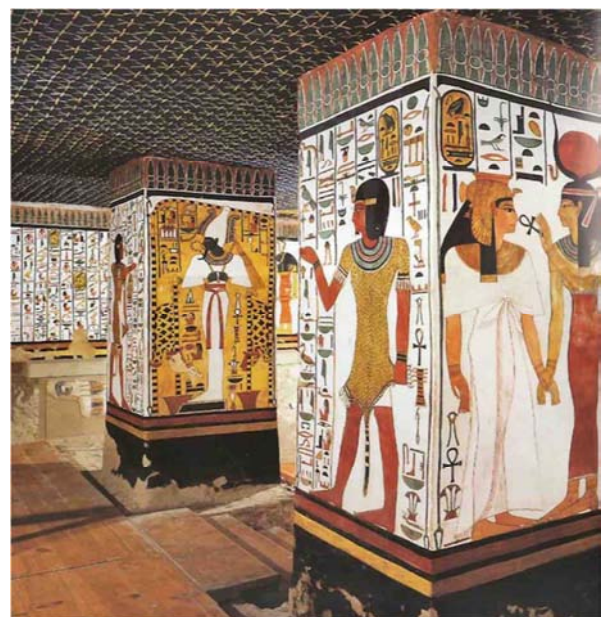


Figure 9. Wall paintings on support columns in the burial chamber after conservation-restoration.

Retouching – a completely reversible process – is carried out using a mixture of watercolors referred to as the, “dirty water” technique. This technique is used to match color tonality; toning down excessively light colors produced by the mechanical removal of resistant dirt in abraded areas. This technique softens the visual flow from one painted area to another, allowing the eye to move over the entire painting without distraction in a manner consistent with the original design [5].

Despite current best practices, the conservation-restoration of wall paintings has come under critique and undue negativity due in large part to amateur restorers and curious Egyptologists of earlier eras making *ad hoc* attempts at cleaning painted walls in an attempt to decipher signs and glyphs covered by dirt. In so doing, they caused irreversible damage, which in turn has translated into skepticism towards conservation-restoration.

It is obvious these individuals were completely oblivious as to the use of more suitable materials for the job. In Rome, it is narrated that in 13 BC, the intervention of an incompetent restorer compromised the beauty of a famous painting by Aristides. Restoration was at that time considered mainly as a renovation or total reconstruction of damaged artwork, with the intention of improving rather than preserving.

Conservators who make use of this conservation-restoration technique feel it is important that those who are currently unaware of advances made in this field be made aware; realizing its effective, and the availability of this more suitable method of intervention – already in use for some time in other countries. This methodology and technique makes possible the prolongment of life of these spectacular marvels from the past so that they may continue to fascinate and educate all

those interested in their story, and our collective past.



Figure 10. After conservation-restoration, Queen Nefertari, stands in regal splendor with her hands raised in adoration before the first gate. As elsewhere in the tomb, she is dressed in a full-length white semi-transparent dress, tied in the middle with a long red sash.



Figure 11. Wall paintings after restoration; Osiris wears white from shoulder to toe, setting off the deep and brilliant colors of his necklace and headdress, The ram-headed, mummiform god standing on a small Ma'at plinth; attended by Nephthys and Isis, is Osiris-Re, a fusion of the two gods.

5. Conclusion

To conclude, when dealing with ancient painting processes of unique purity, form and color, any intervention that is not carried out with the greatest care, stands out glaringly as an extraneous element. Where there is any doubt, it is preferable to accept defects or losses so that the whole reflects the age long history of the work of art.

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