

The restoration of the Basilica Minore di Maria SS. Incaldana in Mondragone (northern Campania): the role of color

Francesco Miraglia¹

¹ *Dipartimento di Architettura e Disegno Industriale, Università degli Studi della Campania "L. Vanvitelli", Aversa, Italy. francescomiraglia@gmail.com*

Corresponding author: Francesco Miraglia (francescomiraglia@gmail.com)

ABSTRACT

The Basilica Minore di Maria SS. Incaldana, located in Mondragone (a city of Northern Campania), for many years was affected by many degradation pathologies.

So, its restoration have been divided in: consolidation and replacement of deteriorated plasters of internal walls; painting of the internal walls with new colors; removal of the plaster on the left and right pillars of the central nave to analyse and date its masonry characterizations; painting of the façade.

In the study phase we used a remote sensing thermographic camera to know its construction techniques and its pathologies in a non-invasive way.

KEYWORDS Restoration, Thermographic analysis, Stratigraphic analysis, Sacred architecture

RECEIVED 03/02/2020; **REVISED** 03/07/2020; **ACCEPTED** 08/07/2020

1. Introduction

The restoration of the Basilica Minore di Maria SS. Incaldana in Mondragone has made it possible to safeguard its interior and its external façade.

The interventions were three: consolidation and replacement of deteriorated plasters; new colors for the internal walls; removal of the plaster of the left and right pillars of the central nave near the transept, creating stratigraphic windows.

The restoration allowed to protect the church after many years of neglect and damage.

2. Historical-constructive analysis

The church was built by Carafa family at the end of the 16th century, on a pre-existing and smaller sacred structure. The presence of this church is shown by some circular pillars made of tufa, placed around the original presbytery, discovered during the recent restoration work.

The plant made by Carafa family was divided into three naves culminating with three semi-circular apses, introduced by a wide transept surmounted by a mighty drum dome and an eight-spindle vault.

The central nave was originally covered with a wooden structure, replaced over time by a barrel vault. Instead, the side naves were, like today, covered by cross vaults (Fig. 1).



Fig. 1. Basilica Minore di Maria SS. Incaldana, drone view before restoration work (Ph: Antonio Smirne).

The church revealed a basic project certainly drawn up by a master builder. The precise iconographic geometry of the sacred building wanted by the Carafa, typical of the

late Gothic forms, is an expression of an art that is no longer spontaneous and popular, but desired by a wealthy client: the feudal lord. With the construction of the church, the three urban centers of the “Terra di Mondragone” in the early 17th century had four parish churches.

An interesting description of the church is in the list of Mondragone’s feudal properties compiled by the engineers Galluccio and Ruggiano after the death of Prince Carafa di Stigliano (1690). However, this important historical document does not contain any information on its original colors.

In the twenties of the 18th century the new feudal lords, the Grillo of Clarafuentes, carried out an intervention of restructuring and expansion, which led the church to its current conformation.

Among the various interventions carried out, there was the replacement of the roof of the central nave and the realization of the barrel vault which replaced the pre-existing wooden roof.

3. Restoration work

Several pathologies of degradation, according to the recommendations of the “Ente Italiano di Unificazione” (UNI 11182/2006), have been found in the church and on its external facade, mostly related to capillary rising damp.

They are, for the internal environments: *detachment*, *missing part* (also found in other glossaries as *lacuna*), *discolouration* (also found in other glossaries as *chromatic alteration*), *efflorescence* (Fig. 2). On the external surfaces, on the other hand, the pathologies found may refer to *missing part*, *discolouration* and *crack*. Despite various analyzes of coloring and historical documents, no historicized colors were identified.



Fig. 2. Basilica Minore di Maria SS. Incaldana, left nave before restoration work.

In the church has also been identified the presence of various layers of colouring, not breathable, affixed in recent decades. Instead, on the external colourings it has still been possible to determine the shade, as the degradation has acted, as in most cases, on the intensity and saturation. In this way it was possible to reproduce the pre-existing chromatism of the external façade.

It should also be noted the presence of rainwater infiltrations in correspondence of the upper surfaces of the sacred structure, due to widespread disconnections of the bituminous sheath above. The result was an accurate macroscopic analysis of this area, carried out with a limited margin of error.

In the pre-intervention phase was used co called "remote sensing thermography", for years the subject of great interest on the part of restoration operators, to detect the presence of any manifestations of moisture and/or lesions of plaster. It allows the visualization, in two dimensions, of the radiation measurement of the materials, using the thermal imaging camera, a device capable of detecting the temperatures of the bodies through the measurement of the intensity of infrared radiation emitted by them above absolute zero.

Thermography made it possible to visualize absolute values and temperature variations of the objects, to verify the presence of pathologies of the various stone elements (Fig. 3).

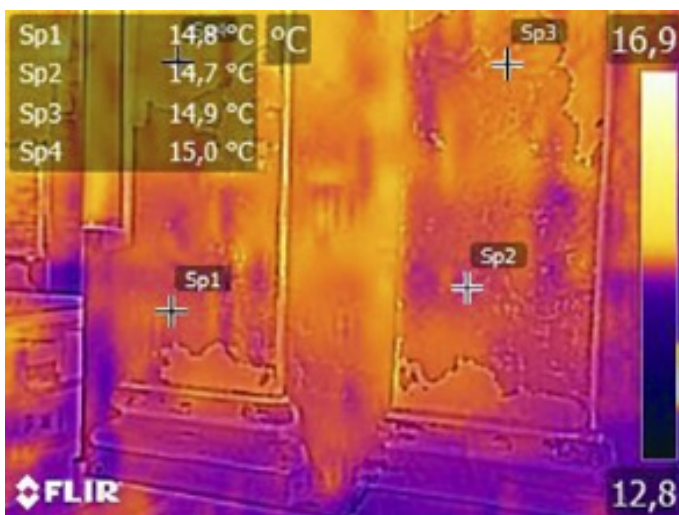


Fig. 3. Basilica Minore di Maria SS. Incaldana, thermographic analysis.

After identification of the deterioration phenomena, a series of interventions were carried out, outlined in accordance with the modern exercise of protection and the rules contained in the Italian law called "Codice dei beni culturali e del paesaggio" (D. Lgs. 42/2004).

Restoration work was designed by architects Francesco Miraglia and Corrado Valente and directed by architect Francesco Miraglia.

Objectives of the interventions were: consolidation of the historicized plasters with integration of the compromised ones; redefinition of the colors, replacing the previous ones (dating back several decades and inadequate).

During all phases of the interventions, constant attention was paid to eliminate the problems related to the widespread presence - especially in indoor spaces - of capillary rising damp, responsible for the presence and multiplication of biodeteriogenic organisms, favoured by the use, over the years, of cement-based plasters and fillers.

Plasters based on certified lime and selected aggregates were chosen to give a material support to the new colourings, also based on lime, that could prevent - in the long term - oxidation or loss of adhesion. The plaster additions, which concerned a significant portion of the vertical surfaces, were made using three products, with various grain sizes (Fig. 4).



Fig. 4. Basilica Minore di Maria SS. Incaldana, right nave during restoration work.

Attention was also paid on the scientific analysis of the complex stratifications of the structure, through the creation of two stratigraphic windows on the pillars of the central nave, located in correspondence with the transept, to assume useful information on the presence of as many circular pillars in tufa, constituent of the original late 15th century church (Fig. 5, Fig. 6).

4. Choice of new colors

The new colors were chosen after having analysed the church from a historical point of view, assisted by the application of preliminary investigations and knowledge of construction techniques and constituent materials.

After unsuccessfully searching for any chromatic evidence, it was decided to choose new colors. The choice of new colors for the interiors is based on the observation of the absence of historicized colors (evidently eliminated during previous interventions); this allowed the choice of the colors in order to meet the renewed needs of the worship building.



Fig. 5. Basilica Minore di Maria SS. Incaldana, left nave, stratigraphic window.



Fig. 6. Basilica Minore di Maria SS. Incaldana, right nave, stratigraphic window.

The result was an overall analysis of the lighting criteria - both natural and artificial - of the interior spaces, in order to use softer and clearer colors. It was, therefore, aimed at making the sacred environment brighter, avoiding the previous visual context, which did not give back the right value to the membranes and finishes.

The new colors, approved by the Superintendence for Architectural Heritage and Landscape, were also chosen for their figure: starting from a neutral color (white), they became, in correspondence with the upper portions of the structure (arches and vaults) more lively (sand and indigo) (Fig. 7, Fig. 8).



Fig. 7. Basilica Minore di Maria SS. Incaldana, testing of the new colors for the superintendence approval.

In order to restore the wide external front, instead, colors equal to the pre-existing ones have been identified, varying the brightness to make them softer. The white of the high overhanging pilasters, therefore, was interspersed with the yellow of the walls (Fig. 9).

5. Conclusions

The restoration work has made it possible to eliminate the pathologies of degradation of the church. In addition, they have made it possible to restore the sacred building to a more harmonious figural condition, eliminating the chromatic chaos especially in the interior, caused by decades of deplorable neglect and inadequate interventions.



Fig. 8. Basilica Minore di Maria SS. Incaldana, central nave after restoration work (Ph: Angelo Razzano).

6. Conflict of interest declaration

This research did not hold any conflict of interest.

7. Funding source declaration

This research did not receive any grant.



Fig. 9. Basilica Minore di Maria SS. Incaldana, external façade after restoration work (Ph: Angelo Razzano).

7. Funding source declaration

This research did not receive any grant.

8. Short biography of the author

Francesco Miraglia - Architect, Ph.D. in Conservation of architectural heritage, former Honorary officer for the protection and supervision of the architectural heritage in the provinces of Caserta and Benevento (MiBACT), former Adjunct Professor of "Caratteri costruttivi dell'edilizia storica" (Università della Campania).

Author of many studies on the protection of cultural heritage, he is the coordinator of the scientific committee of "Terra Laboris. Itinerari di ricerca" (Caramanica Editore). Since 2006 he has been a member of "Società Napoletana di Storia Patria" (Naples). Since 2017 he has been an ordinary member of "Centro di Studi per la Storia dell'Architettura" (Rome). Since 2019 he has been a member of "Istituto Italiano dei Castelli". His professional activity is focused on the conservation of cultural heritage.

References

- Crova, C., Miraglia, F. (2018), *Use and efficacy of Thermography for stratigraphic analysis of historical buildings*, in «Conservation science in cultural heritage», 18.
- Miraglia, F., Valente, C. (2018), *Il restauro della Basilica Minore di Maria SS. Incaldana a Mondragone. Metodologia, interventi, prospettive di ricerca*, Caramanica Editore, Marina di Minturno.
- Alagna, S. (2008), *Stratigrafia per il restauro architettonico. Il metodo dell'analisi stratigrafica delle superfici murarie per la conoscenza e la conservazione del costruito storico*, Aracne editrice, Roma.
- Conti, C., Martines, G. (2007), *I saggi e le indagini preliminari*, in Carbonara, G., a cura di, *Trattato di restauro architettonico*, 2, UTET, Torino, pp. 587-600.
- Valente, C. (2005), *Mondragone Sacra. Viaggio nella memoria dello Spirito*, Caramanica Editore, Marina di Minturno.
- Bellini, A. (1996), *Tecniche per la conservazione*, Franco Angeli, Milano.