



## Thoughts about the mosaic of the Virgin Mary in the Monastery of Gelati, Georgia.

*Roberto Nardi*

Centro di Conservazione Archeologica – Roma

August 30th, 2023



The mosaic of the Virgin is located in the apse of the Gelati Monastery Church, crowning the altar. For centuries it has been the focal point of religious and believers alike: the power of the theological message it embodies, and the power of the reflected light of the gold, silver and polychrome tesserae, have accompanied the daily liturgy of thousands of faithful, making the experience of faith profound and indelible. But the years have not passed lightly, and a heavy price has been paid by the church's structures, frescoes and mosaic. The latter, lacunose and altered, is in a condition that leaves the observer speechless. It is hard to say whether at a preliminary and superficial glance the chaos of different interventions and materials intermingled with the original scares more, or the actual state of the surfaces and deep layers, with the rich case history of currently active deterioration agents.

Centro di Conservazione Archeologica, Srl.

Via del Gambero 19, 00187 Roma - Convento di San Nicola, Belmonte in Sabina, 02020 Rieti

P.IVA 06969901005 [www.ccaroma.org](http://www.ccaroma.org) [cca@ccaroma.org](mailto:cca@ccaroma.org)

This paper is the result of a quick and preliminary observation conducted by the writer and Andreina Costanzi Cobau during their visit on July 14 and 15, 2023, days when the Gelati Rehabilitation International Committee met in situ. It is therefore important to preface that what is described below is the result of personal impressions derived from direct observation of the surfaces, verbal discussion with Georgian colleagues, study of some historical information and the technical document provided by the Committee<sup>1</sup>. No instrumental analytical support, no documentation of the state of preservation and no experimental tests have yet been carried out to support more solid interpretations. Nevertheless, the following comments are sent at the explicit request of Archimandrite Kirion, with the simple aim of supporting a possible technical methodological discussion preparatory to the definition of a conservation intervention strategy.

Having said the above, the first impression we received in observing the church, the frescoes and the mosaic in particular is that we are dealing with a patient who has been through too much, and for that reason would not be able to sustain further circumstantial and partial remedial interventions; much less be able to sustain experimentation.

Mosaic demands a comprehensive intervention that can remove the source of the problems and at the same time restore the condition of the materials and structures. An intervention that is planned on the basis of an omni comprehensive study capable of answering all the fundamental questions:

- on the nature of the mosaic;
- on construction techniques;
- on historical events;
- on past and ongoing processes of degradation;
- on the structural and environmental context within which mosaic, church and monastery are located;
- on the cultural and religious value of the mosaic and on the future "use" that will be made of it.

A project that is technical but at the same time part of a larger and more intelligent plan: a **Cultural Program**.

The primary objective of this Cultural Program will be, **"To restore the Mosaic, the Apse and the Altar to their natural liturgical function."** Any technical and scientific activities implemented, no matter how excellent, shall be secondary to the primary objective.

The program is to be structured in stages, which we can summarize as follows:

- a. Preparation of the survey instruments and eventual micro safety interventions;
- b. Documentation;
- c. Study;
- d. Technical design;
- e-g. Verification; Execution; Maintenance.

---

<sup>1</sup> REPORT of the Joint World Heritage Centre/ICOMOS/ICCROM Advisory mission to the World Heritage property "Gelati Monastery" (Georgia) 28 November – 2 December 2022

### **a. Preparation of survey tools.**

All the information that will be collected during the documentation should be recorded on graphic and photographic bases that for all purposes will serve as collection and management tools. For this, it is deemed necessary to proceed preliminarily with instrumental survey campaigns that, once the final drawings are produced, will allow for action in both flat and three-dimensional surface dimensions.

Always keeping in mind that the focus of this operation is not exclusively on what remains of the mosaic but intends to refer to the entire apse, it is deemed necessary to proceed with the realization of:

- a 3D scan;
- a photogrammetric survey;
- a high-resolution photographic and video campaign.

None of the technologies mentioned could provide the basis we need on their own. This is because each of the procedures has physical limitations that prevent the completion of the work at the required resolution and accuracy. For this, the on-site survey campaigns will be followed by a post-edition process that will serve to unite the results obtained and return the unified synthetic basis needed to proceed with documentation.

At this stage of preparing the survey instruments, it is also useful to envisage some modifications to the scaffolding, at least for the apse area. These modifications will be according to the instrumentation that will be used but above all to respond to some safety rules that we did not encounter during the July visit. In particular, we suggest the installation of safety netting to be installed below the work platforms (sub-bridge nets) and the improvement of the side protection rails.

During the preliminary phase, it will be decided whether urgent temporary work is needed to secure the mosaic. At this stage the only thing that can be said is that it would be desirable to avoid intervening on the mosaic before the documentation and study are completed. But this may not necessarily be possible. Only an acquired knowledge of the state of preservation and the confidence that will develop between the conservators and the mosaic during the preliminary study and documentation will be able to tell.

### **b. Documentation.**

The goals of documentation are many and well-known. Perhaps it is useful to point out some of them, just because they well apply to Gelati.

The first, obvious one, is to crystallize the current state of the surfaces and structure of the mosaic in order to set "a zero point" that will serve as a reference for what will be done in the future and possibly interpret what happened in the past.

Another objective is to identify the distinctive elements present on the surfaces and within the mosaic in order to break down and classify what today seems to be a set of problems that are more or less difficult to understand.

A further possible goal of this operation is to bring out anomalies that may prove useful in identifying unexpected or new information.

In the case of Gelati, the documentation will have to be twofold: it will be done manually, on a digital basis, by conservators with experience in this specific field, because a professional's ability to analyze and synthesize is not replicable instrumentally. Contextually, it will be necessary to resort to instrumental means both to reach all the information not visible to the naked eye and to collect as much information as possible with an objective system, independent of the operator's critical judgment.

For the documentation entrusted to the conservators, it is planned to use the graphic and photographic bases produced during the preparation phase, working on a 1:1 scale, noting all the features that will be identified on the surfaces and in the structure of the mosaic. A list of items will be produced during the preparation phase of the survey instruments and will still be dynamic, open and editable throughout the survey phase.

For the instrumental component, it is envisaged for the time being to perform:

1. Depth survey by Geo-radar;
2. Surface survey by Thermo-vision;
3. Processing and edition of the images made by 3D scanning, which will be carried out with a RIEGL laser scanner that allows processing of the reflectance data, i.e., the response of the material to the laser beam, in order to produce descriptive and selective image processing.

Any other instrumentation will be fielded if scenarios not evident today are identified during the course of the study.

Even in the case of documentation, it will be the combination of the various methods working symbiotically that will produce the final result we need to deepen our understanding of the mosaic.

### **c. Study.**

The current state of the mosaic suggests extreme caution in proceeding with conservation intervention: at least until its nature, history, and state of preservation are known, it would be advisable not to proceed with direct interventions on the mosaic surface and structure. It will be the direct analysis of the mosaic surfaces and the study of the documentation, together with the confidence that conservators will gradually acquire, that will open the way for us to plan the conservation intervention in detail.

What we want to acquire with the study are all the answers that we do not have today to such substantive questions as:

- the nature of the mosaic, that is, how and with what materials it was made;
- its history, from the time of its creation to the events that have occurred up to the present day, including past catastrophic events and restorations;
- the interrelationship between the nature of the mosaic, historical events, the environment and their consequences;
- the current state and ongoing processes of deterioration.

In addition to all this, the study will provide us with possible questions we do not have today and hopefully further answers.

#### **d. Technical planning.**

The definition of a technical project of intervention must come to terms with some questions that at the present state of our knowledge have not yet been answered. These questions are related to the surrounding environment of the church, its architectural structure, the origin of the aggressors, the state of the mosaic, and the historical events that have changed its nature.

As for environment and structures we leave the field to our architect and engineer colleagues simply expecting that:

- the roof will be rehabilitated;
- water infiltration be eliminated;
- the original rainwater drainage functions be reestablished from the roof level down to the ground;
- That the underground channels for capturing and disposing of rainwater and groundwater be reopened and restored to their original functions;
- That the dome windows be reopened restoring the original natural balance between light sources within the church.

Referring instead to the mosaic more specifically, some of the questions still open on the table include:

- the nature of the salts and their origin;
- the consistency of the original materials, from the tiles to the bedding and structural mortars;
- the origin, type and extent of the detachments between the mosaic and the preparation layers;
- severity and extent of salt crystallization damage within the body of the tesserae with particular reference to the condition of the gold and silver tesserae *cartellina*;
- quantification and location of the gypsum-based consolidations whose presence we have visually identified and whose verbal confirmation we have received from the restorer Mr Vladimer (Lado) Gurgenzadze;
- the function now performed by the large number of metal restoration pins inserted in the 1990s and before;
- the state of the areas detached and reapplied during previous restorations;
- the state of the restoration additions;
- the state of the lower areas of the apse where the mosaic was replaced with pictorial reproductions.

All of these questions, along with others that will surely come in the course of the study, will have direct consequences for technical operational choices. One example is how new salt contamination can be inhibited; or how and to what extent extractions will have to be performed; or whether different procedures for stabilizing or precipitating salts will have to be identified in parallel.

Continuing always in the series of examples, we have to ask ourselves to what extent it will be appropriate to fill the voids currently generated by the detachments between the preparatory layers since, at the moment, it is precisely these voids that interrupt the migration of salts to the mosaic surface.

Or, what will be the best decision vis-à-vis the numerous metal restoration pins?

Same question for mosaic restored areas that have curvatures that are not compatible with the original.

All of these questions, along with the interpretation of study data, together with the newly acquired confidence with the mosaic, the church, the monastery and the sites, will be the starting point for the executive technical planning of the conservation intervention.

About this and the subsequent stages - verification, execution, maintenance - it is too early to speak. If not to point out some methodological criteria that one would like to suggest:

1. Extreme caution in interventions: the mosaic, the apse, the church and its structures, the external environment, constitute a single interconnected system; a misstep in one direction can lead to unpredictable consequences for the whole, see the case of the roofing and soluble salts;
2. Timing: the Church and the Mosaic have existed for centuries and this is the scale of measurement with which we must relate; apart from some urgent interventions that will possibly require immediate treatment, for the rest it is suggested to proceed with extreme care, taking as much time as necessary. There are no races against time that impose shortcuts or quick fixes, there are only procedures with natural time frames that will have to be respected in full;
3. Compatibility between original materials and restoration materials: the mosaic was made with lime, stone and glass-based materials and it is to these that we will have to refer in our operational choices; today we have the technical ability to intervene with materials that are completely similar to the originals, from the mortars to the tesserae, and we also have the technology to document with millimeter accuracy everything we do. There would be no reason to mortify the mosaic, or rather to compromise it, by using incompatible synthetic materials or surrogates not capable of reproducing characteristics peculiar to the very nature of the Mosaic, such as light;

#### **e-g. Verification; Implementation; Maintenance.**

We bring these three operational steps together in one paragraph since all three will be consequential to the previous operations.

Verification will consist of conducting an initial campaign of application of the proposed technical program with the objective of applying to the Gelati mosaic techniques used elsewhere, and therefore guaranteed, under conditions that will not necessarily be identical to the case at hand. For this reason it is considered important to begin the intervention with a defensive phase of verification of what has been designed.

This will be followed by the full implementation of the actual intervention.

A routine maintenance plan for the mosaic will complete the intervention. This will be drawn up in the form of recommendations, sequences of technical operations to be carried out according to a specific schedule, and descriptive maps of the location of the operations. A maintenance handbook will serve as a guide and documentation of maintenance for years to come.

In conclusion of this short paper we would like to point out one last recommendation: the accessibility of the conservation intervention to the outside world. The Virgin Mary Mosaic of the Gelati Monastery belongs to all people, and everyone will have the right to know what is being done, in the interest of the Mosaic and the Church. Therefore, it will be important to maintain an attitude of total openness to the ecclesial world, to the faithful, to the authorities, to the professional and academic world, and to the media. In the interest of all and, more so, in the interest of the Mosaic of the Virgin Mary and the Monastery of Gelati.

Roberto Nardi

  
CCA srl  
Centro di Conservazione Archeologica

Roma, August 30th, 2023