The Jewish Catacombs of Rome, especially Villa Torlonia: Synthesis, Diagnosis and Projects for the Restoration and Enhancement

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Synthesis and Diagnosis

The agreement between Italy and the Vatican (1984) attributed to the Ministry of Cultural Heritage the care and management of the Jewish catacombs in Italy. In 1988 the Archaeological Superintendency of Rome took over the management of the only complex in Rome to be owned publicly. The law 101 of 1989 established a joint commission with the Union of Italian Jewish Communities with the task of "determining the means for the Union to participate in the conservation and management of the Jewish catacombs and the conditions for respecting Jewish ritual rules." The problems of care and management soon became complicated both by the recent norms for public safety and by the competence above ground of the city of Rome, the owner of Villa Torlonia. The technical and scholarly information by U. Fasola of 1976[1] still constitutes today the starting point for both illustrating the monument and for drawing up the project of restoration and consolidation.

Fig. 1 Oil lamps discovered inside the catacombs (5th century)

The complex consists of two distinct parts excavated in the lithoid tuff shortly beyond the Aurelian Walls, to the right of the Via Nomentana, in a sepulchral area. The discovery was made by chance in 1918, and although many of the graves were sacked, later research has allowed a sufficiently clear reconstruction of the historical-archaeological picture. The area occupied measures 117 by 87 m., for a total surface of c. 12,000 m^2, the linear distance between the two entrances is less than a kilometre. The oldest galleries, characterised by a grid pattern and graves at right angles to the corridor, must have been planned. The good quality of the tuff and the existence of spaces above ground available to the Jewish communities (cf. the course of D14), led to an encounter of the galleries, where a stair between E1 and C1 marks the junction of the levels, with a difference of 1.40 m. There are some 3828 niches (3703 are open), ranged over a period traditionally fixed between the end of the 2nd and the 4th centuries[2] (presence of Diocletianic stamp in A6–A7).

According to L. V. Rutgers, the oldest sector E dates to the mid 2nd century, on the basis of a campaign of carbon 14 analysis carried out on carbon fragments mixed in the lime of the niches; and the plan of the Torlonia catacombs was adopted later in those of Calixtus.[3] Here I propose the extension of the date well into the 5th century, by the presence of clay lamps both of local production and from Africa Proconsularis dated rather precisely [4] (Fig. 1). Sarcophagus fragments from A suggested the presence of a covered terrace area.

The identification of some inscriptions, i. e. *Caelia Domnina*, the wife of the archon of the synagogue of the *Siburenses*, has suggested the community in the *Subura*, known in the first half of the 1st century C. E. *in aggere*, therefore not far away.[5]

Sometimes, earlier *hypogea* (Vigna Randanini) or *cuniculi* for waterworks (Torlonia) were reused. Fasola and Tolotti [6] supposed a system of cisterns to fill with water according to gridiron schemes documented in the older regions of the Torlonia catacombs.

The older catacomb[7] (Fig. 2) to the west included the atrium prescribed by the Mishna to receive the bier and its bearers (*hatzarah*).[8] It is the deepest region (more than 9 m) which grew up around sector E and developed into D, with narrow and low galleries, orderly and uniform burials in niches originally obtained from walls decorated with pilasters. Some 70 of the niches are surmounted by arches forming *arcosolia*, and several of them present dividing elements of inclined tiles in order to prevent contact between the corpses.

The slightly more recent, eastern catacomb was articulated originally in sectors A and C, followed a deepening of A and the enlargement of B. Regular and irregular galleries alternate, with a lessening of coherence and regularity. Significant differences can be seen in various architectural and decorative solutions, i.e. *arcosolia* and *cubicula* for prominent family groups, with details suggesting a three-dimensional image of columns.

The frescoes display religious-symbolic subjects, such as the arc of the Covenant, the cupboard with the rolls of the Law, sacrificial instruments and especially the menorah

(Fig. 3), framed by an open tent with weighted folds. The heavenly vault recalled the concept of the *paradeisos*, while the interaction with the cultural-artistic *koinè* of the time is attested by more neutral subjects, such as peacocks and dolphins, a flying bird and particularly by painted reproductions of strigilate sarcophagi with lion heads, surmounted however by the inevitable scheme of ritual objects associated with the Jewish religious sphere. Rutgers convincingly dated the frescoes to the 4th century (320/340 the cubiculum, 350/370 the *arcosolia*), because of stylistic comparisons and on the basis of carbon 14 analyses.[9]

The burials are single for the most part, with the exception of mothers who died in childbirth and were buried with the newborn, closed by terracotta tiles bearing the name, family and possibly the profession of the deceased. Stone inscriptions are rare, mostly from sector A and in Greek, although there are six in Latin and one bilingual.[10] Furthermore, letters, sometimes rubricated, are often incised in the lime. The chronology is based on the characteristics of the texts, often by comparing them with contemporary non-Jewish inscriptions, showing the process of social interaction that generated a common language. The brick stamps do not precede the Severan period, but there are also reused bricks from the time of Claudius, Trajan and Hadrian. Many skeletal remains, which the Jewish religion prescribes should be removed from view with ritual burial, were left in the niches. The ritual indications given by the Union of Italian Jewish Communities (UCEI) were accepted by the project for consolidation and restoration coordinated by the Superintendency (*infra*), as a result of multidisciplinary studies carried out together with ICCROM (below).[11]

In addition to the problems of soil stratigraphy (below), a contributing cause of the detachments is the configuration of the galleries, normally narrow and low, together with the crowding of the niches, especially in the more recent regions and galleries.[12]

The botanical study has identified processes of massive development of roots, penetrating up to 10 m into the tuff banks from the ground level; becoming woody, they provoke the detachment of parts of the rock substratum and the degradation of the vaults and walls.[13]

There is little outside influence on the microclimate, which therefore remains rather constant.[14] The closure of the ventilation shafts during the Fascist period and the carbon dioxide released by the roots have produced an unnatural accumulation of radon in the galleries, which made it impossible for visitors to stay for more than 30–40 minutes. The situation was improved significantly with the installation of a mechanical system of natural ventilation that does not contrast with the requirements of the frescoes.[15]

The investigations into the causes of the infiltrations and percolations of water were carried out with great difficulty (no information about the system for collecting rain water). It was ascertained, however, that the infiltrations are concentrated in the zones with modern buildings, and that the location of the collapses and of the reinforcement measures carried out by the Pontifical Commission coincide often with the course of the pipes above.[16]

Microbiological analyses were carried out in order to quantify the flora present in the air and on the frescoed surfaces. They showed the presence of heterotrophical bacteria, microscopic fungi and actinomycetes, which normally in the absence of visitors do not surpass the indicative value of a spontaneous biological deposit. Finally, the examination of the state of preservation of the frescoes shows that there are no particular problems of cohesion and adhesion, but are covered by a film of calcium carbonate. The damage found can be attributed to the creation of new niches in the tuff walls, as is attested by the raising of flakes in the painted surface and plaster in correspondence with closing plaques.

Mineralogical analyses have examined the composition of the layers of painting, identifying points of suffering and renovations in cement: restoration is therefore especially complex.

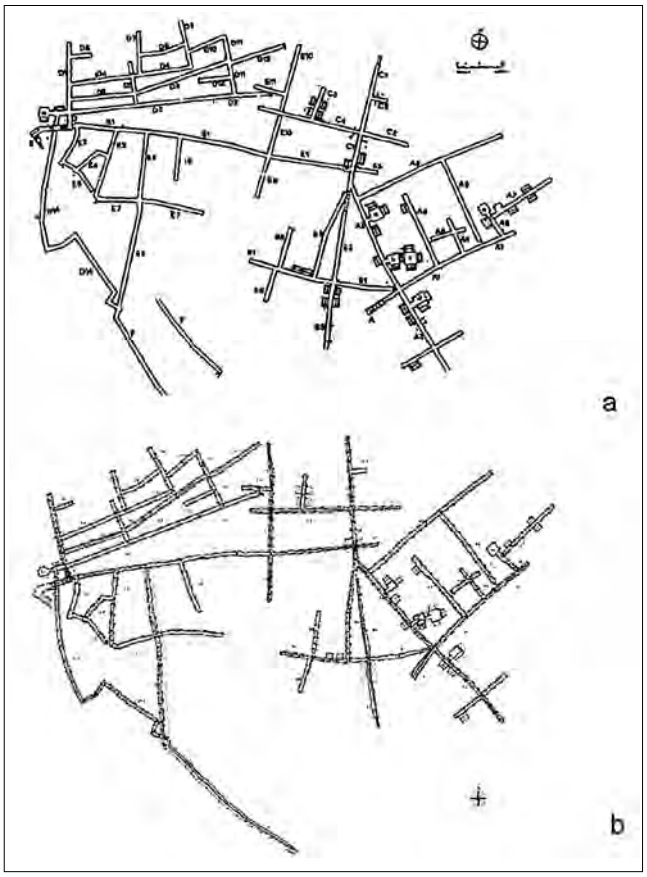

Fig. 2 Planimetries of the catacombs by: a) p. Umberto Fasola 1976, b) Soprintendenza Speciale per i Beni Archeologici di Roma 2003

Projects for the restoration and enhancement

The Catacombs have undergone urgent and necessary works such as the installation of electrical and burglar alarm systems, as well as the reopening of the entrance near Via Spallanzani, since being consigned to the Soprintendenza Archeologica di Roma (1988). A control room for the monument's surveillance was also set up during that period in an area near the ex-stables of the Villa. The Superintendency continued maintenance of the cemeteries in the following years,

Fig. 3 Painted arcosolium with menorah and religious symbols

Fig. 4 Main passageway, open to the public

but had to limit intervention to essential security operations, due to the lack of funds.

The interdisciplinary study team constituted in 1995, thanks to a donation of the World Monuments Fund, had the purpose of examining, together with the technicians of the Superintendency, the general condition of the monument in view of a possible opening to the public. This has finally created an interest towards the undeservedly forgotten Torlonia catacombs, singular testimony of the Jewish presence in Rome. On that occasion studies were effected, including researches of various problems: hydro-geological, chemical, microbiological, mineral, botanical analysis, conservation of the mural paintings, as well as studies pertaining to the static and structural problems of the entire system of underground galleries to determine whether the monument should be opened to the public.

Since 2002 the catacombs became the object of research and in-depth investigation, with the purpose of developing a working plan for consolidation and restoration elaborated by the writers and by Prof. Fabrizio De Cesaris for the structural aspects. A detailed mapping of the structural deterioration was effected to determine the state of conservation of every stretch of the catacombs which, unlike other monuments constructed with selected and homogeneous materials, present different characteristics according to each area.

In fact, the unique structural conditions of the Catacombs are a consequence of their very nature, and have been subject over time to degradation and alterations. The soil layers where the catacombs were excavated are made up of ancient tuff, in particular brown "earthy" tuff, of a good consistency, altered white pumice (the so called "granturco"– corn) and gray or greenish tuff, of a granular texture (the so called "peperino").

At the beginning of the 1970s the Pontificia Commissione di Archeologia Sacra had already found serious fissures in the tufaceous subsoil, causing them to insert masonry supports to prop the walls of the galleries and the vaults. The areas posing a major threat were consolidated with septal slabs, rectangular blocks made of pale brown tuff, and bound with lime mortar and pozzolana; these works, while not completely satisfactory from an aesthetic point of view, were effective and are still structurally valid today.

The disorders and instability can be sorted into different types: longitudinal fractures and caving in of the vaults, the collapse of tunnels, and the sinking in of the pillars. An examination of the structures and the collapses has established that, in general, the structure has resisted in time, but there has been such an extent of local cracking and collapsing in the principal and secondary tracts that the security of the visitors in the cemeteries and the villa above cannot be guaranteed. The causes of material detachment can be attributed to the different stratifications of the tufaceous soil, as well as to the very form of the galleries. On the whole the volcanic tuff, of which they are formed, has a good consistency and sufficient mechanical resistance, but in the superficial and more delicate layers, corresponding to alterations in the pumice, local detachments are frequent and can constitute a danger for the stability of some areas. The other difficult aspect is due to the shape of the galleries themselves and from the considerable number of walled niches.

The Catacombs consist of a series of "cunicoli", modest-sized galleries (0.60–1.00 m wide) with overlaying and stratified burial sites along its paths; the vertical walls (2.00–3.00 m high) have been weakened by the excavation of the burial recesses that exploit the walls to their full capacity (Fig. 4). The gallery ceiling can be divided into three types: segmental arch, flatbed arch and inverted arch; here is where the burial recesses were excavated up to the vault springers. The flat vaults are also a cause of concern. The precariousness of the structure is due either to excessive excavation, probably to increase the insufficient number of

burial sites, or to irregularities in the vertical separation elements (pillars-pilasters) between the wide and asymmetrical burial recesses.

The presence of pumice layers reduces the cemeteries' stability, often causing parts of the vaults to collapse severely, often effecting a great part of the galleries. There have been landslides of the horizontal diaphragms separating the burial recesses, with a subsequent collapse of pilasters, lintel sinking and breakthrough of gallery walls. The instability is more serious in areas with water infiltration and tree-root penetration. The coexistence of different, seemingly contrasting problems (environmental and structural), archaeological and fresco protection and respect of the burial sites, has manoeuvred and conditioned the planning of the restoration and consolidation works. The monument's image, original consistency and structural nature could not be altered, and the works had to be done with compatible and identifiable materials and techniques.

The geotechnical survey of construction materials, the microclimate monitoring, especially in reference to the frescoes, the botanical research and the elaboration of a relief map of the catacombs with respect to the grounds above have refined, integrated and perfected the restoration project concluded in 2005. Consequently, three distinct and homogeneous areas were determined, based on a risk evaluation (serious, medium and low); inaccessible areas, areas of difficult access reserved to scholars only, and principal paths open to the general public were also identified.

The interventions were selected on the basis of technical requirements and potential uses. Important reinforcement works were decided upon to guarantee security in the broadest sense of the term, in the catacomb's main access route while temporary works to block instabilities and permit the permanence of scholars were carried out in the secondary paths (Fig. 5).

Local works were designed to reduce the invasiveness of the restoration without modifying its image, but help stop the deterioration (partial or total substitution of septal slabs, addition of sealing plates to the burial recesses, recovery of portions of tuff materials in the corners of the galleries). Attention and rigour of intervention will also be extended to the tuff structures inserted in the 1970s to support the burial recesses. They will be treated and dulled to reach an adequate colour and texture.

In areas where disorders have caused collapses, reversible structures made from modern materials were inserted, identifiable and compatible with the monument's image (support ribs in the gallery and burial sites' vaulted structures). The path's viability was improved with connecting ramps to limit and eliminate the drops between levels. Termination of the electrical system and installation of a burglar alarm system, integrated to the environment with functional materials (water-resistant illumination and minute copper cables), compatible with the ancient context, will complete the internal works.

To guarantee the safety of the visitor's route, a second entrance, closed during the Fascist period, will be reopened. The Via Spallanzani entrance, located on the exterior of the catacombs, and adapted to present existing norms, boasts a glass staircase that allows the visitor to admire the ancient

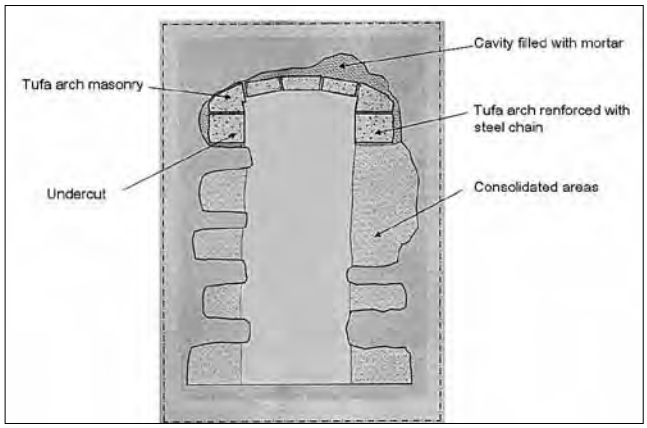

Fig. 5 Project for the restoration and consolidation

stair steps and ablution tank, used during rituals. The entrance to the catacombs was designed (Soc. Iges S.r.l.) with modern materials, structures and architectural solutions: a spiral descent leading to the entrance level will give access to the galleries and a partial covering of flat plates with a roof garden will blend into the villa's surface vegetation.

As mentioned the works' purpose is to block the degradation innate in the very tufaceous nature of the monument; carefully planned maintenance and continuous monitoring will allow any future alteration within the cemetery to be kept under control even with respect to the ground above.

Zusammenfassung

Die jüdischen Katakomben in Rom, insbesondere der Villa Torlonia: Synthese, Diagnose und Projekte zur Restaurierung und Optimierung

Die Torlonia Katakomben befinden sich in Rom entlang der via Nomentana. Sie liegen im Vorstadtbereich auf einem Sedimentgrund aus vulkanischer Erde des Quirinal Hügels und wurden 1918 zufällig entdeckt. Die Katakomben befanden sich lange in Obhut des Vatikans, aber seit 1988 befinden sie sich im Besitz des italienischen Staates.

Die Ausschachtungen für die Galerien der Katakomben erfolgten durch verschiedene Schichten von Tuff und Pozzolana (ein lockerer Boden) und ihre Tiefe beträgt zwischen 7–9 Meter. Dabei wurden die Decken der Galerien eben geschnitzt und zu viele Gräber untergebracht (ca. 4000). Infolgedessen bestehen gravierende Stabilitäts-Probleme: Risse längs der Decke, Behinderung der Galerien, teilweiser Einbruch, Nachgeben von Säulen. Andere Probleme sind durch Baumwurzeln, Wasserversickerung und chemische Verunreinigung durch das Vorhandensein von Kohlendioxid und Radon entstanden.

Allgemein sind die jüdischen Katakomben in Rom nicht vor dem 2. Jahrhundert n. Chr. entstanden, als Beisetzungen immer mehr an Popularität gewannen. Nach Rutgers Hypothese lassen sich die ältesten Gräber aus der Mitte desselben Jahrhunderts datieren. Der ältere Teil der Katakomben ist der untere (Sektion E), welcher über eine Treppe erreichbar

ist, die hinab zu einem Eingangsbereich führt. Die große Mehrzahl der Gräber besteht aus einfachen Löchern, die hoch in die Mauern der Galerien geschnitzt sind (Loculi). Dies zeigt, dass die jüdische Gemeinde Roms nicht reich war. Viele trugen Inschriften auf Marmor oder anderen Steinen und wurden oft mit Ziegelsteinen verschlossen, worauf Name, Familie und Beruf des Verstorbenen stand. Dennoch wollten manche Familien eine Spur ihrer Rolle und ihrer Stellung in der Gesellschaft hinterlassen. Dafür bauten sie eine Grabkammer (Cubiculum) oder ein Arcosolium und dekorierten diese mit Malereien. 69 dieser Ziegelstein-Stempel waren nummeriert; da einige jedoch wieder benutzt wurden, erschwert dies die chronologische Einordnung. In der Datierung können sie zwei Hauptgruppen zugeteilt werden, die zum einen die Zeit des Trajan und Hadrian umfasst, hauptsächlich jedoch in die Regentschaft des Imperators Severus fällt; Fasola fand sogar einen Ziegelstein-Stempel aus der Herrschaft Diokletians.

Es ist schwer die Marmor-Inschriften zu datieren, welche hauptsächlich auf Griechisch geschrieben wurden (nur sechs sind in Latein), weil sie kein konsularisches Datum tragen oder in einem stratigraphischen Kontext abgeleitet werden können. Der Großteil dieser Ziegelstein-Stempel kann aber auf das 3. und 4. Jahrhundert datiert werden.

Zudem fanden sich einige Fragmente von Sarkophagen, die wahrscheinlich benutzt und wieder benutzt wurden, um Gräber zu verschließen, sowie auch ein paar goldene Gläser, welche in der ersten Hälfte des 4. Jahrhunderts produziert wurden. Eine große Anzahl von sehr interessanten Öllampen aus Terrakotta verweisen auf zwei verschiedene Produktionsstätten: in Nord Afrika und im Bereich Rom und Ostia. Diese Objekte werden selten als jüdisch charakterisiert, außer sie reproduzieren die Menorah. Dies begründet sich darin, dass in der späten Antike Heiden, Juden und Christen oft auf dieselben Werkstätten zurückgriffen. Jedoch scheint eine Datierung bis zur Mitte des 5. Jahrhunderts auf der Basis dieser Funde wahrscheinlich.

In den oberen Katakomben (A) sind die Fresken spektakulär, dominiert von jüdischen ikonographischen Motiven und religiösen Symbolen wie Tora-Schrein, Menorah, Etrog, Schofar; es erscheinen auch neutrale Themen wie Delphine, Pfauen usw. Das Repertoire ist typisch für spätantike Wanddekorationen (stilistische Parallelen bestehen mit dem Hypogäum unter der Via Latina und der Katakombe des Petrus und Marcellinus) und der Bezug in der Chronologie auf die christlichen Katakomben datiert sie auf das 4. Jahrhundert, nämlich zwischen 320 und 340 für die Grabkammer und zwischen 350 und 370 für die Arcosolia.

Auf Grund der oben genannten Probleme musste der Restaurierungsplan sowohl den Anforderungen der Konservierung eines unterirdischen römischen Monuments als auch dem modernen Bezug mit seiner Lage inmitten des Parks der Villa Torlonia gerecht werden.

Unterschiedliche aber homogene Antworten wurden gefunden – inklusive der Verstärkung der Tuffstruktur und der chemischen Bekämpfung im Inneren – um den Besuchern den Zugang und eine virtuelle Tour durch die jüdische Kultur im antiken Rom zu ermöglichen.

Von der großen Anzahl Bäume, deren Wurzeln Schäden an den Katakomben verursachen, sind einige selten und per Gesetz geschützt und zu erhalten, daher kann lediglich ihr Wurzelwachstum kontrolliert werden. Jedoch gibt es auch einigen Spontanaufwuchs (Götterbaum etc.), so dass hier die Gefährlichsten entfernt werden können – und das Wachstum der Anderen wird kontrolliert.

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[1] Fasola 1976. See Vitale 2003 with bibl. For the new data see Barbera, Magnani Cianetti 2003 and 2008. I wish to thank my colleague and friend Archer Martin, who accepted to translate my text.

[2] Rutgers 2005a, 2005b, 2006, 2009; Rutgers et al. 2006. For the different calculations of the Jewish population of Rome, see Rutgers 2005a and Rutgers 2006.

[3] Rutgers 2005b, p. 339; acute observations in the thesis of T. Bergamo, The Jewish Villa Torlonia Catacombs, discussed in 2009–2010 at the University La Sapienza (S. Tortorella, M. Magnani Cianetti).

[4] Fasola 1976, fig. 28; Atlas VIII, VIII C1d; D5 VIII, IX A2,: Barbera-Petriaggi 1993; Bussiere 2007.

[5] Fasola 1976, p. 15, note 10 with bibl. See Torlonia CII 18, 22, 67 and perhaps 37; CIL VI, 9821 but cites *P. Corfidius Signinus* greengrocer living *in aggere* near a synagogue, *Sibouresion/Siburresion*. For the location of *Sodales Calcarienses*, however, has been proposed Piazza dei 500, according to CIL 9223–9224.

[6] Fasola 1976, pp. 32–34; Tolotti 1980: reused D 14 (played by Rutgers as a gallery for proof), C1, B1.

[7] The new survey by the ARKGEO soc. confirmed with some changes Fasola 1976.

[8] The theory is proposed by Fasola 1976; against Rutgers *passim*.

[9] This paper owes much to the work of U. Fasola and L.V. Rutgers, as well as field work, conducted since 1996 by the writer and M. Magnani Cianetti (Barbera, Magnani Cianetti 2003, 2008, with the invaluable assistance of F. Capuani and S. Morretta (SSBAR): we thank both of them, together with I. Arletti.

[10] Fasola 1976, p. 22. It also recalls two inscriptions in Hebrew or Aramaic.

[11] The work was coordinated by G. Torraca (ICCROM), M. Magnani Cianetti and the writer.

[12] The geotechnical investigations were carried out by A. Gallo Curcio, P. Paoliani and V. M. Santoro (IGeS).

[13] The major causes of injury and the risks are trees and shrubs: *Ficus carica, Laurus nobilis, Quercus ilex, Pinus pinea*. The project involves the removal of invasive species and the conservation of valuable trees, The botanical surveys and intervention project on plants are due to G. Caneva.

[14] Changes are recorded at the port of entry and ventilation shaft still closed, while temperature and humidity differences between the various passageways are in favour of a spontaneous movement of air inside. Changes due to the opening of the door are stabilised after about three hours, any visits by the public should be limited to two per day for no more than ten people at a time: chemical investigation of M. Tabasso Laurenzi.

[15] Investigations of G. Ciotoli e S. Lombardi. The air quality measurements have determined to radon reduction and elimination of carbon dioxide, and the conditions of the frescoes are constantly monitored.

[16] The hydrological surveys were performed by I. Massari.