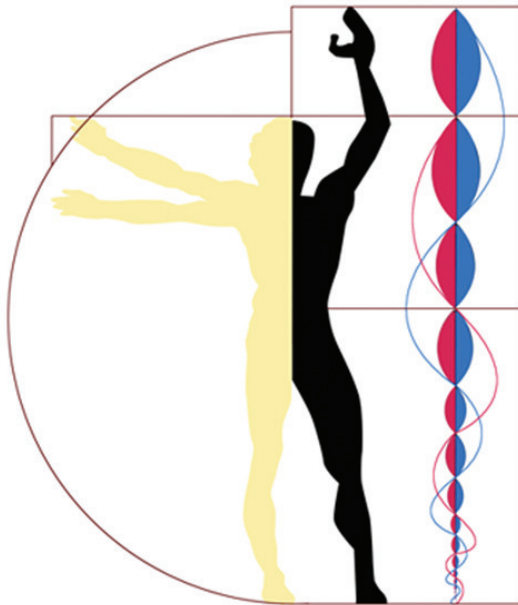


Fabbrica della Conoscenza

XIII Forum Internazionale di Studi

Le Vie dei
Mercanti

Carmine Gambardella



HERITAGE and TECHNOLOGY

Mind Knowledge Experience

Fabbrica della Conoscenza numero 56
Collana fondata e diretta da Carmine Gambardella

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Carmine Gambardella

**HERITAGE and TECHNOLOGY
Mind Knowledge Experience**

Le Vie dei Mercanti _ XIII Forum Internazionale di Studi

Carmine Gambardella

HERITAGE and TECHNOLOGY

Mind Knowledge Experience

Le Vie dei Mercanti

XIII Forum Internazionale di Studi

Editing: Manuela Piscitelli

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Via Monte di Dio, 54

80132 Napoli

Telefono e fax +39 081 7646814

www.scuoladipitagora.it

info@scuoladipitagora.it

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Il Progetto "Ecoturismo urbano per la fruizione sostenibile dei Beni Culturali in Campania", in attuazione degli Obiettivi Operativi 2.1 e 2.2 del Programma Operativo FESR Campania 2007/2013 per la realizzazione e/o il potenziamento, nel territorio della regione, di forti concentrazioni di competenze scientifico tecnologiche, di alto potenziale innovativo, intende favorire la concentrazione di competenze scientifico-tecnologiche finalizzata a rafforzare la competitività dei sistemi locali e delle filiere produttive regionali non solo nei settori dei servizi associati al turismo e beni culturali ma anche in settori ad altissima tecnologia che possano rappresentare una svolta tecnologica e culturale all'approccio innovativo per lo Sviluppo sostenibile in aree ad altissima vocazione turistica.

Conference topics:

Heritage
Tangible and intangible dimensions
History
Culture
Collective Identity
Memory
Documentation
Management
Communication for Cultural Heritage
Architecture
Surveying
Representation
Modelling
Data Integration
Technology Platforms
Analysis
Diagnosis and Monitoring Techniques
Conservation
Restoration
Protection
Safety
Resilience
Transformation Projects
Technologies
Materials
Cultural landscapes
Territorial Surveying
Landscape Projects
Environmental Monitoring
Government of the Territory
Sustainable Development

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Kutgun Eyupgiller

Professor, Department of Architecture, Istanbul Technical University

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Luciana Mainolfi

Administrative responsible for the management
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Alessandro Ciambrone

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Luigi Corniello, Giuseppe Giannini (logo)

Graphics and Layout

Giuseppe Klain

Web master

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Peer review

Scholars has been invited to submit researches on theoretical and methodological aspects related to Heritage and Technology, and show real applications and experiences carried out on this themes.

Based on blind peer review, abstracts has been accepted, conditionally accepted, or rejected.

Authors of accepted and conditionally accepted papers has been invited to submit full papers. These has been again peer-reviewed and selected for the oral session and publication, or only for the publication in the conference proceedings.

Conference report

357 abstracts received from:

Albania, Argentina, Australia, Benin, Brazil, Bulgaria, Canada, Croatia, Egypt, France, Greece, Iraq, Israel, Italy, Japan, Latvia, Malta, Mexico, Norway, Poland, Portugal, P.R. China, Russia, Slovakia, Spain, Turkey, United Kingdom, USA.

More than 500 authors involved.

291 papers published.

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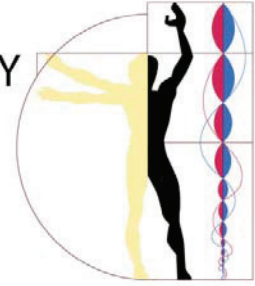
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From ruin to hinge of urban renewal: the restoration of the church of St. Demetrius in Ceglie Messapica (BR)

Antonio BIXIO,¹Ippolita MECCA²

⁽¹⁾Department of European and the Mediterranean Cultures, University of Basilicata, Matera, Italy

antonio.bixio@unibas.it

⁽²⁾imstudio@live.com

Abstract

The case of the Church of St. Demetrius in Ceglie Messapica is a typical example of how the recovery of a worship's building, decommissioned and transformed into a ruin, may be central in the policy for the promotion of a historical center. In a moment of global crisis where the architectural heritage suffers the lack of economic resources for the recovery, protection and enhancement, restoration applied on the church of St. Demetrius wants to be a model of intervention considering that was made possible with a budget extremely limited.

Beyond the technical and technological solutions adopted, the restoration project, which not aims to return the monument to the cult but proposes a new use, bases its foundations on an accurate phase of knowledge of the object, from the relief to the historical and archival research, from the analysis of diseases and disruptions to the understanding of the role of the building for the community.

And it is necessary, in fact, establish a strong feeling between "knowledge" and "project", putting to any projectual proposal a comprehensive study of the structure, that is the knowledge of matter, physical and pathological, the identification of the layers of time that have made unique the monument.

Advanced techniques of representation have enabled the "participation" in the project even to the non-experts and then to the ordinary citizen. The success of the proposed intervention was born, so, even before the beginning of the works.

Keywords: knowledge, Ruin, Restoration, Intervention, Project

1. The path of knowledge

Preserve buildings means placing oneself the aim of conserving material, formal, aesthetic and historical aspects that characterize them and that are configured as vehicles of values, as a testimony of the experience, as a set of messages that come to us from the past. In this sense, a building is both document and monument.

As document is characterized by the set of traces and signs that are deposited on the materials from which it is made; as monument is instead intended as architecture, in the sense of physical realization of an architectural thinking (compositional, figurative and expressive) which is organized in space and place, and that has changed in the form and manner during its history.

The process of knowledge, which goes from the historical archival research to the survey, is the basis of every project. Design means to systematize the initial, objective and subjective data. The objective components correspond to what exists, to the numeric data, the economic availability, the state of the places, etc. The subjective components are, however, the designer in his own ability to interpret initial data and to propose, with the architectural project, the appropriate solution.

In a historical context as that in which it is the Church of St. Demetrius in Ceglie Messapica, the objective data of knowledge are binding even in the subjective choices of the designer. In fact you create that sort of interaction between history and design, including size and functions, building tradition and technology. The charm of the restoration project is in the combination of components apparently conflicting, but that are

critical in the reuse of abandoned historical buildings. Interpret history by adopting what technique and modern technology propose nowadays is the most difficult challenge in a restoration project.

From this premise comes the obligation and the duty, by the designer, to know in depth the artifact, and to frame the same both in the historical context and the city, both in construction techniques and in the analysis of the state of consistency and instabilities existing.

In the practice of the survey, the historical investigation plays a key role, not only because through the knowledge of the history of the studied object you are able to decipher and interpret correctly the elements of architecture which is the object of study, but also because the historical knowledge allow us to trace a correct and accurate path of analysis.

In this regard it should be emphasized that, in the survey, you can not indicate a unique approach, established once and for all, therefore it is necessary to define a project that is specific for each particular situation, and that can provide sure and reliable answers .

The elements derived from history, in some cases, can be the basic trace around which to build the entire project, starting from the assumption that the way to do architecture or the laws that govern the growth of a historical core, are different in different historical periods and that, through their understanding, passes the opportunity to realize a survey without misunderstandings.

The knowledge of history of architecture is, therefore, one of the key points in the preparation of those who are going to complete any type of architectural or urban survey.

Detecting means returning to the project, rebuild through drawing the plot of the complex operations which led to to the construction of an artifact, so the historical knowledge help us to understand and decipher not only stylistic and formal elements but also technical and construction ones.

History and survey are closely related since it is possible to read the architecture and redraw it, only if you know the language that was used to build that particular architecture.

In this sense, retrace the history of the city of Ceglie Messapica, we felt it was the right way to propose a series of considerations on the monument under study, to define, then, the directives of the restoration project.

Similarly, the analysis of the inhabited city center from the point of view of historical growth is served to highlight the importance of specific knowledge in relation also to the history of town planning, in the moment in which knowledge and recovery of the individual building are closely linked to knowledge and requalification around the historic city center.

In this case, the complexity of the topic is given not so much by the situation of ruin of the object of study, but from the difficulty of pick up the threads of a past that gave it identity , both in his the role of historical and architectural monument, both in its historicized function in the historic center of Ceglie Messapica.

The historical analysis linked to the survey nevertheless has ways of investigation related to operational practice, it is not limited to a mere collection of data, but is the guide for the drawing of the detected elements, so in this way is useful to support the research carried out on the texts with a collection of iconographic and photographic material , that is able to clarify the history of the building in different historical periods. The availability of old plans, historic photos, etc., helps to better organize the operations to be conducted in situ since it is easier to understand the genesis of the design of the body that you have to detect and recover.

Although the researches on the texts are conceived and organized keeping in mind that these are just one of all the moments of a complex process of knowledge, which aims not only to the historical reconstruction but especially to the graphic description of the building or of the urban core that are being studied.

The historical analysis used to the survey follows, therefore, a specific methodology and is often conducted in parallel with the graphical analysis, since drawing and history are the guide elements which are responsible for the opportunity to complete a correct survey.

2. Operational methodology for the restoration project

The instrument through which conservation takes place is the restoration project. This is configured in a proceeding in which are noted the dimensional connotations of the building , its material and technological characteristics as well as the static, spatial and functional patterns. The signs and traces that overlap on the object are also collected, as well as the information on the conservation status of the elements that compose it.

But no intervention can be planned and implemented without an accurate knowledge of the object on which you has to operate. It is 'necessary, therefore, to establish a strong link between “knowledge” and “project”’: one cannot ignore the meticulous listening of the building on which you operate in order to fully understand the material, physical and pathological status, to read components, lines, layers, signs of time that made it unique and irreproducible.

The operations of historical research, survey, scientific investigation, diagnosis, identification and physical-chemical quantification, although conducted by different professional figures, become useful and functional to the final objective, only if humbly communicate with each other. In this way they become a full document formed by all the information acquired in the construction site, useful for subsequent checks on the state of

the building. Today surveying techniques can take advantage of increasingly sophisticated tools and software capable of returning the entire building or parts of it in a precise and detailed way. Even diagnostics, thanks to technological innovations, allows an analytical knowledge of any local situation, arriving to a precise reading of the elements that characterize the material and to the identification of possible pathologies in progress. For this reason it is essential to prepare two separate projects: a diagnostic one (knowledge) and an intervention one (therapy). The diagnostic project, using the contributions of interdisciplinary has as its purpose the full maintenance of the matter object of intervention through the relationships between data and matter, history and architecture, cause and effect. This cannot be seen as a closed project, indeed must be designed and structured as something dynamic, able to cover all the needs in order to capture complete and reliable data about the building. The second project is realized only after the first one, and with purely therapeutic purposes, comforted by the careful control of the outcome. A sort of "diagnosis of second level" dedicated to the choice of products, materials and techniques both traditional and innovative if they are compatible with the existing. This process is important to know that the matter "is" the one that "will", to test the techniques and products that can consolidate and store the object without distorting it. For this reason, the preventive knowledge phases and the "medical history" will always preponderant in a correct restoration project.

The preliminary study begins with the historical research on bibliographic and archival sources , with eventual archaeological excavations, with the general and detailed photographic survey, with the geometric, material and degradation survey, which will guide the choice of intervention to follow. For a proper diagnosis of the materials and the state of degradation you have to perform a series of technical-scientific investigations that allow to establish the scientific nature of the material and of the layers of deposit. The preliminary stage of knowledge allows to operate in compliance with certain basic principles, including the minimum intervention, the compatibility between building and technology of intervention and a proper maintenance project.

3. The Church of St. Demetrius: from ruin to multifunctional center

This methodological approach was applied to the restoration of the church of St. Demetrius in Ceglie Messapica (BR). The present church is the result of a rebuilding from the foundations of an old church always dedicated to St. Demetrius, whose origins are very old, because they related to a clear Byzantine origin of the cult, but also because there is evidence of such a church in ancient documents that show the numerous pastoral visits made by the bishops of the Diocese of Oria from 1565 to 1900, in the same place. In fact, since 1500, there was a church dedicated to St. Demetrius, which was destroyed in the first half of the nineteenth century.

The first documentary source that directly quotes the church of St. Demetrius dates back to 1565, when it was carried out in Ceglie Messapica a pastoral visit by Archbishop Carlo G. Bovio. They talk about it again in 1627 during the pastoral visit made by the Bishop Ridolfi and again in the report drawn up by the archpriest Donato Maria Lombardi, between late 1747 and early 1748, in response to the Instruction of the Holy Apostolic Visitation sent to all the parishes of the Diocese of Oria by the Bishop Castrese Scaia. As reports Ciraci, in 1791 the church suffered a fire and finally on the entrance portal there is the date of re-building of 1854.

The latest news concerning the renovation of the paintings in the vault of the presbytery of the church dating back to 1929 and the collapse of a part of it in 1967. The church was built on the ground capitate, in the "Garden of the Great Church", with the support of the brotherhood of the Death of St. Demetrius (founded in Ceglie Messapica in 1621), was finished in a few months and consecrated in 1855 by Bishop. Luigi Margarita.

All this information, collected from bibliographic sources and from public and private archives, were later corroborated by archaeological surveys conducted within the church. Archaeological excavations were conducted in April 2012 by the Cooperative Society "S.A.E.T.T.A." in the persons of Dr. Elisabetta Caliandro, dr. Clavica Arturo M. and Mr. Tamborrino Domenico, under the scientific direction of Dr. Daniela Tansella, official archaeologist of the Superintendence for Archaeological Heritage of Puglia.

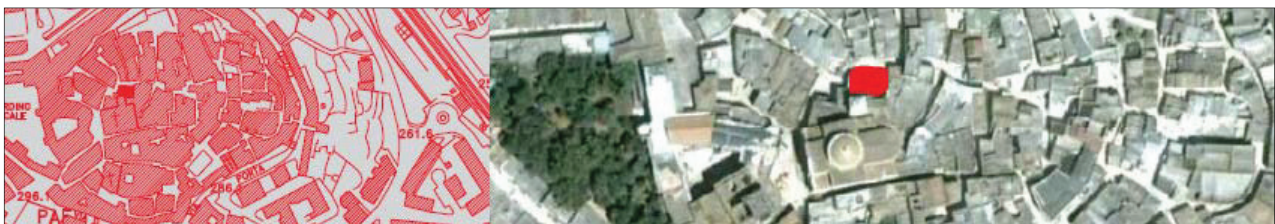


Fig. 1: Old Town of Ceglie Messapica and identification of the Church of St. Demetrius



Fig. 2 and 3: Overview of the archaeological excavations



Fig. 4 and 5: Detail survey of dividing wall and tomb



Fig. 6 and 7: Main facade and side elevation on Giovanni Mele Street

The church of St. Demetrius is in neoclassical style, with a single nave, with two altars, one central and one lateral. The vault of the nave was decorated with frescoes depicting floral motifs and the one of the apse was painted with angels and scenes from the life of the Mother of Jesus. The access of the bell tower is from inside through a steep staircase placed on the right of the main entrance. Before the restoration, the church was in a state of total neglect and decay, due to a collapse occurred in 1967 that caused the total loss of the covering vault, of the bell tower and of parts of the walls, representing

an outstanding point in the old town of Ceglie Messapica near the Mother Church and few meters far from the castle.

The remaining structures, however, were still a valuable testimony of religious architecture during 1800. For this reason the council has opted for a restoration and a reuse of the structure, in which the new destination use was born from the need to create a socio-cultural space in the historic center of the city. With this intervention you can make the church again usable: for centuries it has been part of the daily life of citizens of Ceglie Messapica, and even today it is part of the memory of the oldest inhabitant, which remind the church before the collapse. Among the objectives of this intervention, in addition to the reuse of the property, other important steps are: the enhancement of the historical and cultural center of the city, which in recent years has been “rediscovered” by a significant flow of tourists; the creation of the basis for the housing facilities of the old town, which in recent years has seen the decline in the number of the residential presence in favor of moving to the suburbs, an area in which there are no decaying buildings that can constitute element of danger in case of particularly intense weather events or in the event of natural disasters; the operation to “give safety” to an important artifact that, in the event of total collapse, would lead to much higher costs from a social point of view, as it may adversely affect also on the adjacent structures. All the design intervention moves in order to restore and recover the entire building operating with the methods of architectural and archaeological restoration, with an eye to solving structural problems and to the preservation of the architectural elements still present.

The church is made of masonry of “carparo” placed in regular rows, outside the wall is visible, while inside the church was completely plastered and decorated in the style of neoclassical architecture. The blocks of the bearing structure were connected by poor pozzolanic mortar mixed with bolus, because of this reason and because of the aggression of atmospheric agents, the wall facings, especially where the plaster was detached, were poorly cohesive, in fact, were almost without mortar between connections and were covered with infesting vegetation, mosses and lichens.

The survivors walls of the church were very disarranged and had many lesions, quite evident in the union between the main facade and sidewall that for its shape and for a not perfect union between the transversal masonry represented a point of weakness of the structure.

The lack of covering and therefore the action of atmospheric agents, in the long years of neglect, had caused a total washing away of the interior of the church, resulting in degradation of the plaster and detachment from almost all of the walls.



Fig. 8: Apse: decorated star vaults



Fig. 9 and 10: View of presbytery and interior view of the church entrance



Fig. 11 and 12: Central altar and Lateral altar

To identify the chemical and physical characteristics of the stone material used for the construction of the church, its origin and its compatibility with those of new quarries were performed petrographic analyzes on samples of material taken from the site and on those taken from the quarries. This allowed us to define the petrographic composition of the stones used in the construction of the church, to identify and find stone materials petrographically identical to the historic ones to be used for the restoration work. The structures in fact needed to integrate the existing material and that recovered from the ruins of the church itself, with new material with similar compositional and textural characteristics.

The performed historical analysis, the surveys and the tests carried out, the study of diseases and instabilities present on the structure led to an intervention essentially “reconstructive” of the wall texture, to the restoration of old spatiality (though using modern materials) in order to give back to the community the building as a social and a cultural space in the historic center of the city.

It is important also to add that all the proposed interventions were determined on the basis of the knowledge acquired in the course of the inspections and of the analysis phase. The foundations were consolidated thanks to underground foundation on piles of “root type” and a ventilated crawl space was made being careful to protect the pre-existing walls and tombs discovered during archaeological excavations through the realization, only in this area, of an appropriate steel structure on which to rest the floor.



Fig. 13 and 14: The new roof



Fig. 15 and 16: Constructive steps: new covering

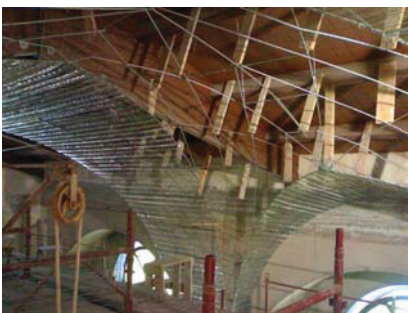


Fig. 17 and 18: Construction phases of the decorated star vault with pernevometal

Masonry was consolidated by disassembly of parts of masonry for the height deteriorated by lesions and subsequent reconstruction, with the same material deriving from demolition; the removal of the vegetal layer; the joints sealing with mortar made of pozzolan and lime; the integration of damaged blocks of stone (undo-redo) with new blocks; the mending of the dividing walls without tothing through arrangement of diatones placed across the wall. The project involved, as the next step to the static consolidation of the present walls , including plumes of support for the collapsed vault, the reconstruction of the parts of the masonry and of the same plumes through blocks from a local quarry.

The petrographic analysis carried out, by Dr. Geol. L. Spalluto, showed that the outcropping litotypes in the quarry located in Contrada Grieco (Town of Ostuni) are the only ones among those analyzed, petrographically compatible with those used originally to build the Church of St. Demetrius.

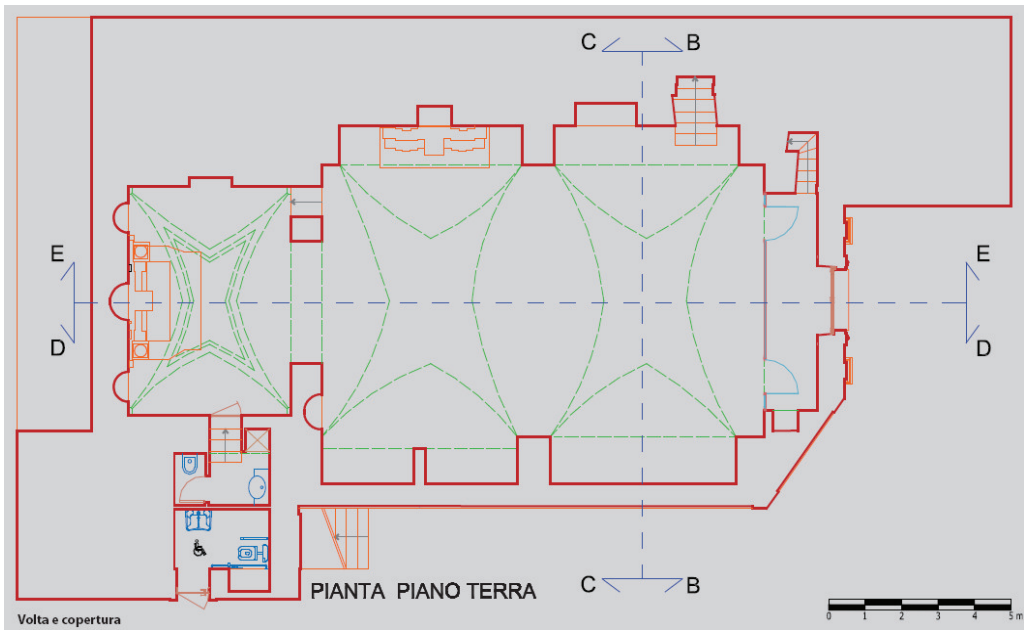


Fig. 19: Table of project - plant



Fig. 20: Table of project - sections

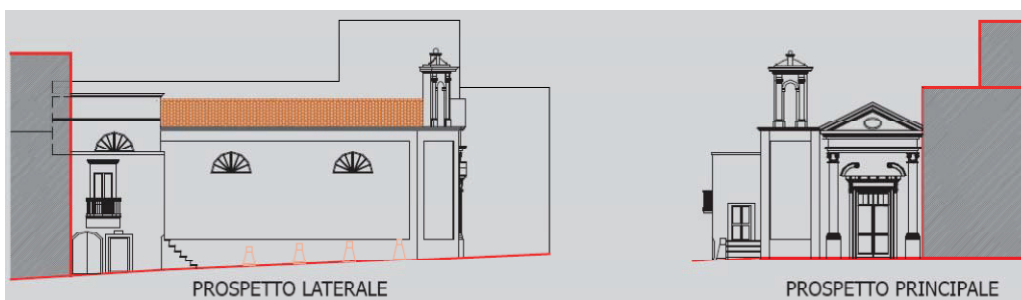


Fig. 21: Table of project - elevations

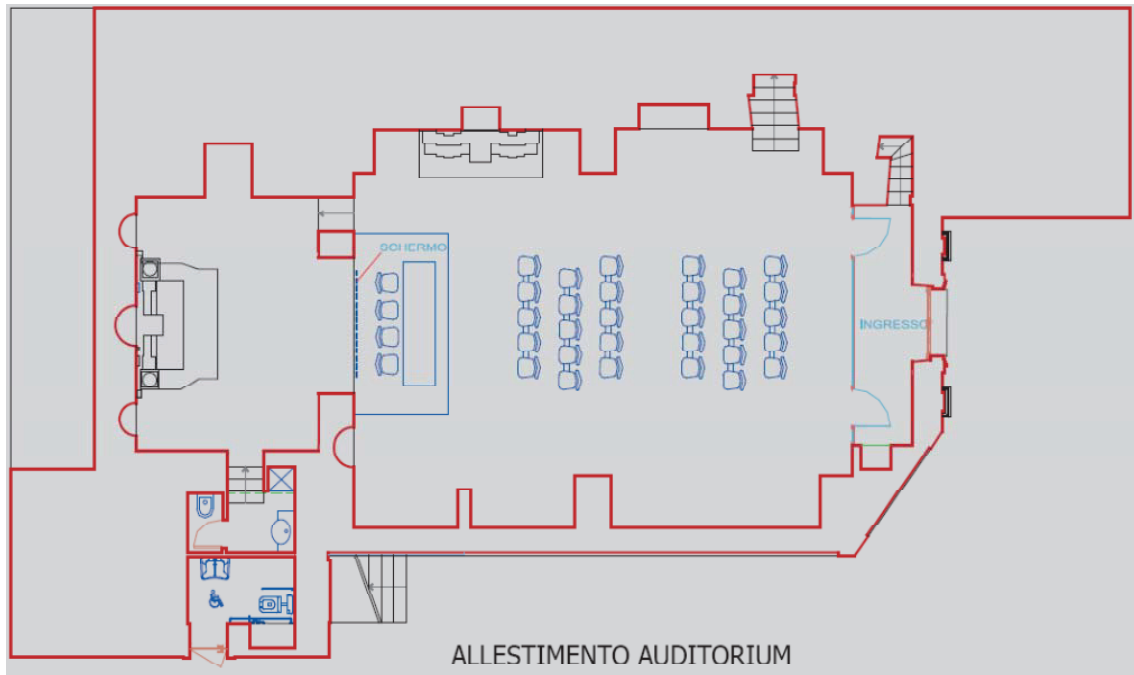


Fig. 22: Table of project - construction of the auditorium

The project involved the construction of a new covering, a ventilated roof of laminated wood, with final seed coat made by curved tiles, while in the interior of the nave, to restore the ancient image of the church, made a not load bearing valut (according to the old shape as deduced from the reading of traces of the collapse on the walls) using a port plaster net of *pernevometal* type. Finally the bell tower was rebuilt in the same place and with the same features as the original, all the decorative elements inside and outside were restored, and the new finishes and new plants more suited with the new use were realized (e.g. exhibition hall and auditorium).



Fig. 23: The bell tower before the crash and the new bell tower



Fig. 24: The Church of St. Demetrius after restoration

The idea of reconstruction has been supported by historical certainties of the original architectural element placement and in respect of what is required by the Charter of the Restoration of Krakow, 2000. *“The reconstruction of entire parts “with the same style” should be avoided. The reconstructions of limited parts which have a particularly architectural importance may be accepted only if they are based on a precise and indisputable documentation ...”.*

4. Conclusioni

The knowledge of the historical construction of the masonry was a major precondition for the restoration project and for the evaluation of structural consolidation. The problems encountered in the restoration of the church of St. Demetrius were those common to all the historic buildings, including the inability to know certain data characterizing originally the building, the changes that occurred over time due to the phenomena of damage resulting from anthropogenic transformations, from 'aging of materials and from the natural disasters following one another over the years.

There was therefore the need to use techniques of analysis and interpretation of the artefact through diagnostic investigations with different levels of detail. These operations have been dictated by the proposed objectives and involved parts of the monument, in order to determine numerical values necessary for the qualitative and quantitative interpretation of the structural operation.

The methodology adopted, in which the object and the history, its knowledge and its protection go hand in hand, and the attention given in this restoration intervention have had the intent to convey the “feeling” of enhancement to the conservation and the reuse of the monument. Only in this way the Church of St. Demetrius can go back to being a witness of the past again “at the service” of all.

Bibliographical References

[1] CARBONARA, G. Il restauro e la manutenzione delle chiese. in STRAPPA, G. *Edilizia per il culto*. Milano 2005, pp. 120-123

[2] ANTONUCCI, R. *Restauro e recupero degli edifici a strutture in muratura*. Rimini: Maggioli Editore, 2008

[3] TORSELLO, P. Il rudere come testo e pretesto. in AA.VV. *Il rudere tra conservazione e reintegrazione*. Gangemi Editore, 2003

[4] MECCA, I. Metodologia operativa per il restauro ed il riuso di edifici ecclesiastici abbandonati. Il Restauro di due chiese in Basilicata e Puglia. in BERTOCCI, S. VAN RIEL, S. *Re.USO La cultura del restauro e della valorizzazione. Temi e problemi per un percorso internazionale di conoscenza*. Firenze: Alinea Editrice s.r.l., 2014, Vol. 1, ISBN 978-88-6055-829-9, pp. 517-521