

Interdisciplinary Handbook on Heritage Protection, Management and Communication

Volume I

PROTECTION



Interdisciplinary Handbook on Heritage Protection, Management and Communication

Volume I – Protection

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PROTECTION OF CULTURAL HERITAGE

EDUGAME HANDBOOK chapter

by

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1. Protection of Cultural Heritage

Introduction

Forward

This chapter is introducing the Protection field in the practice of the conservation of Cultural Heritage (CH) and, specifically, architectural and territorial heritage.

The section must guide the experts (freelances, public administrators, consultants, amateurs, volunteers and scholars) in conceiving the restoration approach in order to transfer Cultural Heritage to the future generation, that is the aim of each international declaration founding the protection actions.

According to the new social and economic implications, it is necessary to approach the safeguarding of Cultural Heritage in a proper way, which means the intersection and the combination of the traditional tools and contents with new needs. The social changing, the economic transformation and the environmental revolution in the world, particularly in Europe, are introducing a new way to conceive the restoration discipline, contriving new approaches, with the involvement of new items (f.i. the economic matters) rooted in the precise consciousness of what is Cultural Heritage.

In order to hand over the new generation and the Cultural Heritage in the future it is necessary to recognize heritage in all its historical values whose signs must be surveyed and conserved.

At the same time, it is important, also according to the European directives, to recognise the common values brought by the sharing of the restoration and conservation approach in the European Countries. This reason is, also, very well connected with the necessity to create a common historical conservation labour market, introducing figure of preservionist, perhaps not interchangeable but able to build an intercultural dialogue of high quality and with useful practical spill-over on the labour market.

For this reason, it is important to define the protection approach that is closely related to the practice useful to recognise, maintain, restore, conserve and re-use the Cultural Heritage. The practice is developed in a political and dynamic environment where several stakeholders are involved. The cultural, social, and economic asset of

this environment can have a great influence on the procedural growth of the preservation and/or restoration action.

In this regard, it is important to have a solid knowledge of procedures and methodologies of the reasons for the conservation of the heritage, of the purposes of this conservation and of the ways through which the reuse project can be implemented.

This body of knowledge is the foundation of the profession, and this chapter aims to introduce it, though not exhaustively.

As Richard D. Wagner and de Teel Patterson Tiller state: *“At the onset of the 21st century, it is important to ask if the policies and practices that sustained historic preservation in the last century will still be viable in the current century. The world is far different than it was just fifty years ago in our attitudes toward caring for the environment, shifting demographics within and between nations, acceptance of new technologies, economic growth and equality, and education. How the traditional policies and practices of historic-preservation will be affected by those drivers of the future is important to understand before we can determine if they will still be valid in the future, or if they must be changed to meet the challenges presented”*¹



Graphic elaboration by Nora Lombardini.



Lisbon, Padrão dos Descobrimentos/Monument to the Discoveries. Picture by Marta Rota, 2015.



Equestrian statue of Cangrande della Scala, Museo di Castelvecchio, Verona, Italy. Picture by Marta Rota, 2017.

¹ *Creating Historic Preservation in the 21st Century*, edited by R. D. Wagner, de TEEL Patterson Tiller, Cambridge Scholar Publishing, 2018.

Protection

Protection of Cultural Heritage aims to prevent its loss when it is recognized as an expression of a Nation's identity to transfer it to the next generation. Protection starts with the recognition of Cultural Heritage and is activated through the implementation of good conservation and maintenance practices characterized by social value and economic impact at both regional and national scales. The protection, despite having a specific purpose, which is to defend Cultural Heritage, can itself become a driving force of enhancement when the action does not take place only in specific and specialized social sectors, but undergoes a dissemination process as a value bearer. The moral value of the defence of what after the WW2 was defined Cultural Heritage, is sanctioned by Athens restoration charter. The international conference in 1931 invited to implement the principle of mutual collaboration as a program of "safeguarding the masterpieces where civilization has found its high expression and appearing threatened." Restoration and conservation concretize the concept of protection of Cultural Heritage. The locution "Cultural Heritage" (CH), far more articulated than that of a monument, appeared for the first time in 1954 in the report of the Hague/Aja Convention or 1954 Convention for the Protection of Cultural Property in the Event of Armed Conflict². It implies a protection interpretation that goes beyond representation of national ideology, taking supra-national importance. Protection is an action put in place against risks that can damage CH. It is necessary to identify the risks and define them. The risks³ that can damage Cultural Heritage are natural or due by incorrect human behaviours. The natural risks are (in general), according to the European Parliament 2007⁴: "*Hurricanes, floods, earthquakes, landslides, volcanoes, wind effects, fires, environmental fatigue or similar long-term climate effects and other disasters sometimes cause irreversible damage to Cultural Heritage, or completely destroy entire areas of Cultural Heritage, both movable and immovable*"⁵. The incorrect human behaviours able to damage CH are: the cause of pollution; disrespect of the value of Cultural Heritage; wrong use or re-use.

² <https://en.unesco.org/protecting-heritage/convention-and-protocols/1954-convention>.

³ <https://whc.unesco.org/en/disaster-risk-reduction/>.

⁴ F. De Masi, D. Porrini, *Cultural Heritage and natural disasters: the insurance choice of the Italian Cathedrals*, in "Journal of Cultural Economics", 2021, pp. 409-433 [<https://doi.org/10.1007/s10824-020-09397-x>]; [https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/369029/IPOL-CULT_ET\(2007\)369029_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/369029/IPOL-CULT_ET(2007)369029_EN.pdf).

⁵ *Protecting the cultural heritage from natural disasters*, Policy Department Structural and Cohesion Policies CULTURE AND EDUCATION, IP/B/CULT/IC/2006_163 23/02/2007, p. III.



Messina, Piazza del Duomo after the earthquake of the 28th December, 1908. Source: Società fotografica italiana, a cura di. *Messina e Reggio: prima e dopo il terremoto del 28 Dicembre 1908*. Firenze, 1909.

WHAT IS CULTURAL HERITAGE?

UNESCO has defined 'Cultural Heritage' in its: Draft Medium Term Plan 1990-1995 (UNESCO, 25 C/4, 1989, p.57)

*“The Cultural Heritage may be defined as the entire corpus of **material signs** - either artistic or symbolic - handed on by the past to each culture and, therefore, to the whole of humankind. As a constituent part of the affirmation and enrichment of **cultural identities**, as a legacy belonging to all humankind, the Cultural Heritage gives each particular place its recognizable features and is the storehouse of human experience. The **preservation** and the **presentation** of the Cultural Heritage are therefore a corner-stone of any cultural policy”⁶.*

WHAT ARE MATERIAL SIGNS?

Material signs are divided in anthropic signs and natural signs.

Anthropic signs are: architectures, sculptures, paintings, gardens, agricultural landscapes, mining landscapes, drawings, books.

Natural signs are: all the elements of landscape, all the elements of environment.

⁶ J. Jokilehto, *A History of Architectural Conservation*, Oxford: Butterworth-Heinemann, 2002, p. 1.

Signs ⁷

The “signs” can be material and immaterial (in fact, it is possible to consider tangible and intangible heritage).

Briefly, referring to semiotics, it is possible to define the “signs” as a “*process of signs*” in which it is possible to distinguish the “*semaion*”, as the proper sign that is a physical entity; the “*semainomenon*”, or what is transmitted by the sign, and that is not a physical entity; the “*pragma*”, or what to which the sign referred.

In case of architecture, building constructions, urban structures, “*pragma*” concerned the uses and the functions.

The “*pragma*” can support, also, a commemorative meaning, developing the referent’s significances: that is not only the function, but it is possible to consider, also, the historical acceptance, as a historic document.

From the point of view of semiotics, “*pragma*”, as a component of the sign, becomes a witness as a document.

The same cultural environment, connected to a certain geographical context and a territory, in different periods recognises different objects as signs able to build its memory and denote its identity.

Identity

The concept of identity is endlessly changing. When it is necessary to define an identity, usually it is fixed a historic step that better could represent the identity itself. What is out of this historic threshold is considered as an alterity, that is considered not representative.

So, it is possible to talk about alterity, considering that every culture is extraneous with another one. But it is possible to define alterity what is inside a culture, but it is not considered able to represent the culture itself.

It is possible to define temporary frontiers, inside only one culture, and geographical frontiers, through diverse cultures.

⁷ The two definition, Signs and Identities, are from: N. Lombardini, E. Fioretto, *Human signs on the urban territory: study and conservation in the modern age*, in “Urbanity. Theories and Project Designs New strategies for Sustainable Developments of Ukrainian Cities”, ed. M. G. Folli, Roma, 2017, pp. 100-101.

As Marco Aime⁸ states, identity and culture are not immutable and immovable concepts. For this reason, it is impossible to establish a priori what will build our history and our identity in the future.

The definition of the identity of the Cultural Heritage is often connected with the research and the stigmatization of the tradition.

Cesare Pavese, a famous Italian writer belonging to the half of the XX Cent., in the introduction to the “*Moby Dick*” by Herman Melville, affirms: “*because having a tradition is less than nothing, only by seeking it it’s possible to live it*”⁹.

It is thinkable to define cultural identity starting from understanding the cultural diversity: history, language, food, art, religion, dress, landscape, environment, society, economy, immaterial heritage.

Presentation & Valorisation

Concerning to the CH presentation and valorisation, it is necessary to guarantee:

- The legibility of the object
- The use of the object, according to the necessity to give it the correct valorisation and according to the reason of its legibility.



Civita di Bagnoregio, Italy.
<https://civitavecchia.portmobility.it/it/civita-di-bagnoregio>



Trulli, Alberobello, Italy.
<https://whc.unesco.org/en/list/787/>



Saline, Cervia, Italy.
<https://www.ravenna24ore.it/notizie/societa/2021/08/14/sale-dolce-di-cervia-al-via-la-raccolta-2021/>

A good presentation depends on a good management of the object.

... *In the Cultural Heritage field, an eminent place is reserved to the valorisation expressing itself through human resources, and specific know-how. In this way it is possible to offer to the public a better fruition of the cultural object. A correct*

⁸ Marco Aime, *Eccessi di culture*, Torino: Einaudi 2004.

⁹ “*Poiché avere una tradizione è meno che nulla, è soltanto cercandola che si può viverla.*”. C. Pavese, *Prefazione* (1941) to H. Melville, *Moby Dick*, Milano: Adelphi. Edizione Kindle, 2012.

*valorisation is the key that a site of cultural interest can have to emerge in the always more crowded and competitive panorama of cultural and entertaining highlights...*¹⁰

Cultural Policy

The policy is the participation of the government to ensure the transmission of the Cultural Heritage to the future.

Rules, laws, recommendations (as Charters and Doctrinal texts) and education can be expressions of good policy of protection of the cultural object¹¹.

Nowadays, the cultural policy is aimed to the involvement of local community “to raise awareness and to advocate the human dimension in dealing with Cultural Heritage sites”¹².

WHAT IS A MONUMENT?

MONUMENT (n) late 13c., “a sepulchre,” from Old French *monument* “grave, tomb, monument,” and directly from Latin *monumentum* “a monument, memorial structure, statue; votive offering; tomb; memorial record,” literally “something that reminds,” from *monere* “to remind, warn”. Sense of “structure or edifice to commemorate a notable person, action, or event” first attested c.1600”¹³.

All the objects can help to remember even if it is essential to understand what it is necessary to remember and who is deciding what we have to remember.

It is important to define what I want to remember.

In this case, the Taj Mahal monument was built to remember Queen Mumtāz Mahal forever. Taj Mahal is a monument to love and is one of the rare symbols/monuments to love.

It is also important to note that we preserve the object, sites and even the landscape

¹⁰ http://www.agenziaeuromed.it/sottopagENG.php?id=2&id_pag=4

¹¹ <http://www.icomos.org/en/charters-and-texts>; http://www.getty.edu/conservation/publications_resources/research_resources/charters.html

<http://www.beniculturali.it/mibac/export/MiBAC/sito-MiBAC/MenuPrincipale/Normativa/index.html>.

J. H. Stubbs, E. G. Makaš, *Architectural Conservation in Europe and the Americas*, Wiley, 2011, Edizione del Kindle.

¹² <https://www.unesco.org/en/articles/involving-local-communities-conservation-cultural-heritage>; P. Howard, *Heritage: management, interpretation, identity*, London, New York: Continuum, 2003; M. Ripp, *Heritage as a system and process that belongs to local communities*, COE (<https://rm.coe.int/heritage-as-a-system-and-process-that-belongs-to-local-communities-mr-/16807bc255>).

¹³http://www.etymonline.com/index.php?allowed_in_frame=0&search=monument&searchmode=none

that can help us remember. For example, the Colosseum can remind us of the ancient history of the Roman Empire, also according to the importance of the Empire in different cultures.

The structure and handiwork aimed and built to remember something is called a "monument".

Monuments/Cultural Heritage are: architectures, historic centres, landscapes, the anthropogenic signs on the territories, archaeological ruins/sites, industrial heritage sites, vernacular heritage, underwater heritage, cultural routes.

AT THE MOMENT, ONLY ARCHITECTURAL BUILDINGS AND LANDSCAPES ARE VIEWED AS MONUMENTS.

WHAT SHOULD THE MONUMENT REMIND ME OF?

I must consider a monument as a document, witness of something or symbol of something.

If we want to preserve the monument as a document, we must respect the **material**.

The material must be preserved from its decay, because of its **uniqueness** and **non-reproducibility**.

For example, we don't lose the document if we conserve the paper (as a material) and if we preserve the written part of it.

The value of the document stays in the contents but, also, in the material that is able to transmit the contents (paper and ink, for instance).

The document is damaged and altered by the passage of the time, by the/its history. It is a result of the culture of a specific civilisation.

Monument is a document and the testimony from the historical point of view (and from the artistic one).

In the 1964 "*International Charter on The Conservation and Restoration of Monuments and Sites (Venice Charter)*", at the **article 7**: "*a monument is inseparable from the history to which it bears witness and from the setting in which it occurs. The moving*

of all or part of a monument cannot be allowed except where the safeguarding of that monument demands it or where it is justified by national or international interest of paramount importance.”

And, at the article 9 quotes: *“The process of restoration is a highly specialized operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents. It must stop at the point where conjecture begins, and in this case moreover any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp. The restoration in any case must be preceded and followed by an archaeological and historical study of the monument.”*¹⁴

The concept of restoration of architectural heritage, from the scientific point of view, was defined in the middle of the XIX Cent. when, during the re-establishment of the boundaries of the European Countries, it was, also, necessary to define their identities using the refurbishment, or better, the *restoration* of the old and ancient buildings, archeological remains and all the elements recognized as “monuments” or documents able to determine the searched identity.

It is possible to speak about the research of the identity and of the construction of the identity.

Building expressions of the *Ancien Regimes* became political symbols of the reconstruction of the “post-Napoleonic Europe”. Their restoration followed the restoration of the old government.

It means building a new identity for the Country and for the people.

The buildings chosen as an expression of this “restoration” became “monuments” as documents of the past. For this reason, a lot of structures and buildings, not conceived as “intentional monuments” become “un-intentional monument”¹⁵.

About the methodological approach of restoration, a debate arose, suggesting the idea of reconstruction and completion and, in opposite sense, the idea of conservation, that means not touching the authenticity of the structures, avoiding any alteration of all the historical steps of the object (maintening all the signs or marks of the history on

¹⁴ <http://www.icomos.org/en/charters-and-texts>.

¹⁵ Intentional and unintentional monuments are the categories defined by A. Riegl, *Il culto moderno dei monumenti: il suo carattere e i suoi inizi* edited by S. Scarrocchia, translated by R. Trost and S. Scarrocchia, Bologna: Nuova Alfa, 1985. (Original edition: *Der moderne Denkmalkultus: sein Wesen und seine Entstehung*, 1903)..

the object).

It is possible to recall the important and central thesis of *authenticity*, expressed by Walter Benjamin in his essay “*The Work of Art in the Age of Mechanical Reproduction*”¹⁶. According to the German philosopher, in fact, in the photographic reproduction of the work of art is missed a fundamental element, called by him “*hic et nunc*”, that means the unique existence of the work of art itself. Or better, in the photographic reproduction of an object it is missed its authenticity connected with its real presence in time and space. Its unrepeatable character is, moreover, closely connected to the “*place*” in which the work is created. In the *tempo-space* uniqueness is rooted the foundation of its authenticity and its authority as something original and as a historical witness. Uniqueness, Authenticity, and Authority are values, according to Benjamin’s theory, that are summarised in the concept of “*aura*” as a special and specific character of all the hand-made things.



Alberto Burri, *Il Grande Cretto*, 1984, Gibellina, Italy.
https://italics.art/it/il_grande_cretto_di_burri_a_gibellina/

Basic Terms/Notions¹⁷

Protection (*n.*) “*mid-14c., proteccioun, shelter, defense, that which shields from harm or injury; keeping, guardianship, act or state of protecting;*” *late 14c. as “that which protects,” from Old French proteccion “protection, shield” (12c.) and directly from Late Latin protectionem (nominative protectio) “a covering over,” noun of action from past-participle stem of protegere “protect, cover in front,” from pro “before” (see pro-) + tegere “to cover” (from PIE root *(s)teǵ- “to cover”). A common Old English word for “protect” was beorgan*”.

¹⁶ W. Benjamin, “*The Work of Art in the Age of Mechanical Reproduction*”, Transl. by J.A. Underwood, London: Penguin Books Ltd, 2008 (Original title: *L’œuvre d’art à l’époque de sa playback mécanisée*, 1936).

¹⁷ The etymologies are from: <http://www.etymonline.com/index>; <https://www.icom-cc.org/en/terminology-for-conservation>

Restore/Restoration (n) “late 14c., a means of healing or restoring health; renewing of something lost,” from old french restoration (modern french restauration) and directly from late latin restorationem (nominative restoratio), noun of action from past participle stem of latin restaurare (see restore).

restore (v) c.1300, “to give back,” also, “to build up again, repair,” from old french restorer, from latin restaurare “repair, rebuild, renew,” from re “back, again” (see re-)staurare, as in instaurare “restore,” from pie *stau-ro, from root *sta- “to stand, set down, make or be firm,” with derivatives meaning “place or thing that is standing” (see stet). related: restored; restoring.

“restaurare” in latin is re-build, re-store, re-make, re-start - by publius (gaius) cornelius tacitus (56- 120), annales, liber iv, chapter 42-43

et segestani aedem veneris, montet apud erycum, vetustate dilapsam, restaurari postulavere (the populus segestani asked to rebuild the temple of venus decayed by the passage of the time).”

Conservation: “late 14c., conservacioun, “preservation of health and soundness, maintenance in good condition, act of guarding or keeping with care,” from Latin conservationem (nominative conservatio) “a keeping, preserving, conserving,” noun of action from past-participle stem of conservare “to keep, preserve, keep intact, guard,” from assimilated form of com-, here probably an intensive prefix (see com-), + servare “keep watch, maintain” (from PIE root *ser- (1) “to protect”). Meaning “preservation of existing conditions” in any sense is from mid-15c. The word has been used since late 15c. in reference to English municipal authorities who had charge of rivers, sewers, forests, fisheries, etc. Specifically with reference to preservation of nature and wild places by 1909”.

Preservation: (n) “early 15c., preservacioun “protection from disease,” from Old French preservacion (13c.), from Medieval Latin preservationem (nominative preservatio), noun of action from past-participle stem of preservare “to guard beforehand” (see preserve (v.)). General sense of “protection, act of keeping safe or sound” is from mid-15c.”

Consolidation: (n) “c. 1400, consolidacioun, “act of making or process of becoming solid or firm,” of wounds, broken bones, etc., from Late Latin consolidationem (nominative consolidatio), noun of action from past participle stem of consolidare “to make firm, consolidate,” from assimilated form of com “with, together” (see con-) +

solidare "to make solid," from *solidus* "firm, whole, undivided, entire," from suffixed form of PIE root *sol- "whole." Meaning "act of bringing together and uniting different parts into one body or whole" is from 1670s".

Maintenance: (n) "mid-14c., *maintenaunce*, "wrongful interference in others' lawsuits by a lord or his followers," from Old French *maintenance* "upkeep; shelter, protection," from *maintenir* "to keep, sustain; persevere in" (see *maintain*). Meaning "action of upholding or keeping in good order" is from early 15c. That of "action of providing a person with the necessities of life," also "financial provision or support, that which maintains or supports" is from late 14c.".

Preventive Conservation: Preventive conservation is defined as "all measures and actions aimed at avoiding and minimizing future deterioration or loss. They are carried out within the context or on the surroundings of an item, but more often a group of items, whatever their age and condition. These measures and actions are indirect - they do not interfere with the materials and structures of the items. They do not modify their appearance". (ICOM-CC).¹⁸

This essay is introducing the concept of restoration as an action aimed at conservation.

Restoration, nowadays, in Italy, refers to technical intervention. Conservation is the aim of the restoration, and it is contrary to the reconstruction, replacement and stylistic renovation.

History of restoration and conservation.¹⁹

Restoration is based on the definition of the role of the "Cultural Heritage" in society, economy and policy. Restoration is the action made on the good in order to transfer it to the future generation.

The actions must be of "stylistic reconstruction" or of "conservation" of the material importance of the good (good is the object as Cultural Heritage). In this report we are referring to architectural heritage as a single building, a complex of buildings with

¹⁸<https://www.iccom.org/index.php/section/preventive-conservation#:~:text=Preventive%20conservation%20is%20defined%20as,whatever%20their%20age%20and%20condition.>

¹⁹ For this chapter see: G. Carbonara, *Avvicinamento al restauro: teoria, storia, monumenti*, Napoli, 1997, for the history, specifically, pp. 23-270; *Verso una storia del restauro. Dall'età classica al primo Ottocento*, edited by S. Casiello, Florence, 2008; N. Lombardini, *La conservazione degli edifici. Storia del restauro per il progetto*, in «Conoscere per conservare il costruito. Storia, rilievo e rappresentazione», edited by N. Lombardini, F. Cavalleri, C. Achille, Sant'Arcangelo di Romagna, 2010, pp. 13-101; J. Jokilehto, *A History of Architectural Conservation*, Oxford, 1999.

their infrastructure, archaeological sites, landscape, built and natural environment. As built environment it is possible to consider the ensemble of buildings, the agricultural landscapes and the gardens.

These two goals, “stylistic reconstruction” and “conservation” are a huge part of the debate inside the conception of intervention on built environment.

Short historical introduction about the debate on “stylistic restoration” and “conservation/preservation”

The debate, that is embedding inside the Romanticism, an *“attitude or intellectual orientation that characterized many works of literature, painting, music, architecture, criticism, and historiography in Western civilization over a period from the late 18th to the mid-19th century”*²⁰, has two main protagonists: Eugene-Emmanule Viollet-Le-Duc, in France, and John Ruskin, in England. Certainly, the debate was very widespread in all Europe because its political Restoration imposed the necessity to re-build the political structure of the European Continent and of each European Country, with the delineation of the new boundaries.

Before the introduction of restoration from the political point of view, in the middle of the XIX century, what was the focus on ancient cultural goods?

The cultural meaning of the ancient goods until XIX Cent.

The safeguard of the historical cultural good during the XIV and XV Cent. in Italy

Rules for the protection of the ancient buildings were promulgated by the Papal State starting from the XV Cent. The high number of monuments in Italy made (with the fragmentary political and administrative situation of this land) the safeguard measures very hard from the political, social and economic point of view.

For instance, Pope Eugenio IV (1431-1447) demolished the buildings placed against the Pantheon.

Pope Sisto V (1471-1484) restored the Vesta’s Templum and demolished the ruins placed against the Tito’s Arch, annexed to the medieval Frangipane’s fortification.

²⁰ Britannica, The Editors of Encyclopaedia. "Romanticism". Encyclopedia Britannica, 30 Nov. 2022, <https://www.britannica.com/art/Romanticism>.

Pope Nicolo' V (1447-1455) ordered, in 1453 Bernardo Rossellino the restoration of the temple of Santo Stefano Rotondo: "*Rafationollo Papa Nichola. Ma molto più lo ghuastò*"²¹ is the comment by Francesco Di Giorgio Martini.

The functional restoration of the church is the main aim of architect Bernardo Rossellino.

He restored and/or rebuilt the second ring nave, already plundered and collapsed in the late Medieval age and closed the intermediate gallery.

He rebuilt, also, the roof and built a ceiling in a timber structure, according to not the original or ancient style, but to the modern or Renaissance style.

In this way were destroyed, and definitively lost, the annular vaults realised by clay tubes, according to a traditional construction method adopted in the ancient and classical Roman age. Rossellino closed some original windows, opening new mullioned ones, according to the Renaissance style, and built the atrium with a new gate on the external portico.



Etching of 1771 drawn and engraved by G.B. Piranesi. <https://www.eufemistampe.com/arco-di-tito-piranesi/>

Pope Pio II Piccolomini, in 28th April 1462, promulgates the Papal bull titled "*Cum Almam Nostram Urbem*" safeguarding the monuments and the ancient ruins.

In 1515 Pope LEONE X appoints Raffaello Sanzio *Commissario delle Antichita' di Roma*, (*Antiquities curator of the antiquities in Rome*)²².

²¹ *Pope Niccolò V rebuilt it but, more than this, he ruined it (translation by the author). Trattati*, edited by C. Maltese, Milano: Edizioni Il Polifilo, 1967, p. 283, tav. 155; E. Gentile Ortona, *Santo Stefano Rotondo e il Restauro del Rossellino*, Ministero dei beni e delle attività culturali e del turismo -Bollettino d'Arte, fascicolo 14, aprile-giugno 1982, pp. 99-106(http://www.bollettinodarte.beniculturali.it/opencms/export/BollettinoArteIt/sito-BollettinoArteIt/Contributi/Editoria/BollettinoArte/Fascicoli/visualizza_asset.html_349661237.html).

²² *Raphael Sanzio Letter to Leo X*, (c.1519) Translated by V. Hart and P. Hicks (<http://letteraturaartistica.blogspot.com/2014/12/letter-to-pope-leo-x.html> <https://courseworks2.columbia.edu/courses/10532/files/579172/preview+&cd=3&hl=it&ct=clnk&gl=it>).

At the first half of the XVI Cent., Pope Paolo III Farnese enacts a new bull on the conservation of the ancient buildings in Rome.

In the second half of the XVI Cent. the *Counter-Reformation* or *Catholic Reformation*, as a reaction to Protestantism, imposes a new way to conceive the churches and, consequently, their transformation.

Synthetically: the *Sack of Rome*, in 1527, the Protestant Reformation (in the first half of the XVI Cent.) and, later, the *Council of Trent* (1545-1563), represent the historical steps through which it is possible to understand the attention reserved to the antiquities by the scholars in the XVI Cent.

In particular, it is necessary to define that “antique” in this cultural context means the object belonging to the “Classical Period” related to the culture of the Roman age (or “Romanity”). The *Council of Trent* (Latin: *Concilium Tridentinum*) sought to bring back many of these Roman traces destroyed by the soldiers of the “Holy Roman” Emperor Charles V (1500-1558). Moreover, the identification of papal symbols with Roman pagan ones is one of the issues on which the censorship of papal ethics activated by the Reformation is found²³.



Council of Trent and the destruction of the blacklist books
<http://dizionariipi.zanichelli.it/storiadigitale/p/percorso/70/la-controriforma-la-chiesa-cattolica-in-eta-moderna>

Leon Battista Alberti and the Malatestiano Temple (Tempio Malatestiano) in Rimini (XV cent.)

“There are three things principally in which the whole of what we are looking into consists: the number, and that which I have called the finishing, and the collocation. But there is still something else besides, which arises from the conjunction and connection of these other parts and gives the beauty and grace to the whole: which

²³ M. Firpo, F. Biferali, *“Navicula Petri” – l’arte dei Papi nel Cinquecento*, Roma-Bari: Laterza, Roma, 2009, p. 22.

we will call congruity (concinntas), which we may consider as the original of all that is graceful and handsome. The business and office of congruity is to put together members differing from each other in their Natures, in such a manner, that they may conspire to form a beautiful whole: so that whenever such a composition offers itself to the mind, either by the convenience of the sight, hearing, or any of the other senses, we immediately perceive this congruity: for by nature we desire things perfect, and adhere to them with pleafure when they are offered to us; nor does this congruity arise so much from the body in which it is found, or any of its members, as from itself, and from nature, fo that its true seat is in the mind and in reason; and accordingly it has a very large field to exercise itself and flourish in, and run through every part and action of man's life, and every production of nature herself, which are all directed by the law of congruity, nor does nature study anything more than to make all her works absolute and perfect, which they could never be without this congruity, since they would want that confent of parts which is fo necessary to perfection”.

The “transformation” of the Basilica of San Francesco in Rimini, designed by Leon Battista Alberti for the lord of Rimini, Sigismondo Malatesta (1417-1468) , is “limited” to additions, inside the medieval church of San Francesco, and built an envelope, outside, using stones and ancient marble coming from the late-roman and byzantine churches in Ravenna, especially from St. Apollinare in Classe.

The medieval church is “interpreted” by the architect who realized the shell in a new style but, at the same time, in harmony and "congruity" with the medieval, pre-existing church. Alberti's project is populated with framing the pre-existences according to the idea of *concinntas* as it is stated below ²⁴.

In the **Renaissance**, so as it is underlined by professor Cagiano de Azevedo, restorer coincides with the architectural designer.

The approach is NOT TO REBUILD the ancient building following the original style but to integrate the existent monument to obtain the architecture that the architect wants and thinks.

²⁴ Leon Battista Alberti, *The ten books of architecture, The 1775 Leoni Edition*, book IX, chapter V, New York: Dover Publications, Inc., 1986, p. 195; Leon Battista Alberti, *L'architettura*, , edited by G. Orlandi and P. Portoghesi, Milano: Il Polifilo, 1966, vol. II, Libro IX, capitolo V, p. 814, (original edition, *De Re Aedificatoria*, 1450 about, printet in 1485); A. Pane, *L'antico e la preesistenza tra Umanesimo e Rinascimento. Teorie, personalità e interventi su architetture e città*, in “Verso una storia del restauro. Dall'età classica al primo Ottocento”, ed. S. Casiello, Florence, 2008, pp. 61-138.

Professor Alfredo Barbacci²⁵ underlines that the Renaissance adds itself on the ancient architecture with the aim to complete it harmoniously but according to the modern style. For the architects and the artists of the '400 and '500 “*antiquaria*” means to study and to “understand” the classical world, from the institutional point of view, too.



Basilica of San Francesco, in Rimini, Italy, with the addition on the façade and on the side by Leon Battista Alberti.
<https://rimiturismo.it/eventi-notizie/tempio-malatestiano>
<https://colorgrammar.wordpress.com/2014/07/24/l-b-alberti-e-il-tempio-malatestiano/>

The temple after the bomb of the IIWW.
http://www.egramma.it/eOS/index.php?id_articolo=2005

As professor Angelo Mazzocco refers, in the XVI Cent. “*Antiquaria*” becomes an autonomous discipline, taught in Bologna where the chair of Romana “*antiquitatae*” was established for the first time ²⁶.

The protection of the antiquity in XVII-XVIII Cent.

In the Sixteenth century, the ancient materials became object of interest: Cesare Baronio, historian and cardinal saved the Roman and medieval remains in the basilicas of Saints Nereus and Achilleus (1596-97) and San Cesareo in Rome (1596-589).

As professor Giovanni Carbonara underlines, in the XVIII Cent. the heuristic and classifier studies don't leave out that the interests in the safeguard of the ancient object is related not only with the conservation of the shape but, also, with its MATERIAL.

According to the presbyter Ludovico Antonio Muratori (1672-1750), the roman

²⁵ A. Barbacci., *Il restauro dei monumenti in Italia*, Roma: Istituto Poligrafico dello Stato – Libreria dello Stato, 1956, p. 25.

²⁶ A. Mazzocco, *A reconsideration of Renaissance Antiquarianism in light of Biondo Flavio's ars antiquaria with an unpublished letter from Paul Oskar Kristeller (1905–1999)*, in “Memoirs of the American Academy in Rome”, vol. 59/60 (2014/2015), pp. 121-159.

gravestones are made by text, by characters (types) and by the material that supports both of them ²⁷.

Anne-Claude-Philippe de Tubières count of Caylus (1692-1765) French archaeologist, engraver, and man of letters suggests underlining the restored parts with painting technics different from the original ones.

In 1756 the Canon Luigi Crespi (1708-1779) exposed his concepts of intervention on the ancient objects, distinguishing between restoration (as the action of replacing and conservation, as the action of conserving the material of the good); introducing the concepts of "reversibility" and "patina" (the old painting...has taken its patina from lime, and from powder and wet: which patina is very difficult, not to say impossible, to imitate), opposing the Renaissance identification between artist and restorer; talking about "maintenance" and "prevention". Andrea Pasta (1706-1782) and Baldassarre Orsini (1732-1810) proposed the concept of "*minimum intervention*", also adopted by Francesco Bartoli in "*Riflessioni di Francesco Bartoli antiquario, sopra il modo di riattare la Rotonda (Suggestions by F. B. on the way to restore the Pantheon)*". The critics moved by Bartoli (1755) against restorations at Pantheon are agreed by Francesco Algarotti (1756) and Francesco Milizia (end XVIII cent.).

A big step forward, in the archaeological field, is done by Johann Joachim Winckelmann (1717- 1768), beginning the "archaeological science", in the meaning of the conscious methodological systematisation of archaeological data, during its important excavations at Pompei and Ercolano²⁸.

As Carbonara notes, Winckelmann was critically against the restoration, censuring the inaccurate restoration but not the integration.

Therefore, Winckelmann blamed the "baroque restoration", considered as an alteration of the original.

The German archaeologist, preposing the documentary value of the work of art to the artistic value, seems to oppose any intervention that prevents its clear philological reading.

On the same line of Winckelmann is Bartolomeo Cavaceppi, a famous restaurator of ancient statues at the end of XVIII Cent...Cavaceppi suggest distinguishing the old parts

²⁷ G. Carbonara, *Avvicinamento al restauro*, op. cit., pp. 75-100 and, specifically, pp. 56-57; (<https://www.centrostudimuratoriari.it/muratoriana-online/>).

²⁸ G. Carbonara, *Avvicinamento al restauro*, pp. 75-100.

from the new ones. Moreover, he was avoiding to follow the «maniera antica» (the ancient technics) At the end of the XVIII cent. the neoclassical architect Giovanni Antinori made the restoration of the Obelisk of Montecitorio palace with neutral integrations distinguishable from the original.

In the second half of the XVIII Cent. the History of Art started to become an independent discipline.

The concept of safeguarding, however, is not already recognised as necessary and compulsory.

Before the Unification of Italy, one of the most «advanced» Italian States in safeguarding of antiquities, is the State of the Pope where Chirograph signed by Pope Pio VII was promulgated (1802), with the support, as Professor Andrea Emiliani states²⁹, of Ennio Quirino Visconti, archaeologist and historian of art (1751-1818) in charge to arrange the Museum «Pio Clementino» at Rome.

Furthermore, it is possible to consider Johann Joachim Winckelmann, Antonio Canova, Antoine Chrisostome Quatremere De Quincy, and the abbot Luigi Lanzi the founders of the history of the art and archaeology.

The book *Geschichte Der Kunst Des Altertums* by Winckelmann (Dresden, 1764) had a good widespread in Italy, thanks to its translation by the Abbot Carlo Fea³⁰, lawyer and supervisor for the antiquities in Rome, under the Pope Pio VII

The contribution by the French art critic Quatremère de Quincy to the enunciation of the safeguarding's principles must be found in the letters sent to the Venezuelan general Francisco de Miranda (1750-1816) - emblematic figure of freedom and active with the French army in 1792-1793- well known as "*Lettres a Miranda*" and published in Paris in 1796³¹.

The letters were written in defence of the artistic heritage of the Papal State against the devastation carried out by the French troops during the Italian campaign in 1796.

As far as said, it is clear that baroque culture assumes cultural attitudes and ways of

²⁹ A. Emiliani, *Leggi, bandi e provvedimenti per la tutela dei beni artistici e culturali negli antichi stati italiani, 1571-1860*, Bologna: edizioni Alfa, 1978.

³⁰ J. J. Winckelmann, *Storia delle arti del disegno presso gli antichi*, translated by C. Fea, second Italian edition, Rome: Pagliarini, 3 voll. 1783.

³¹A. C. Quatremère de Quincy, *Lettres sur l'enlèvement des ouvrages de l'art antique a Athens et a Rome écrites les unes. Au celebre Canova les autres au général Miranda*, Paris: A. Le Clere, 1836.

acting differently against the past, dialectically moving among the countless shades that go from total destruction to real conservation.



Pannini Giovanni Paolo
Ruins of the Temple of Saturno, Settizonio, Piramide Cestia and Temple of Claudio, 1739 (oil on canvas) (<http://www.atlantedellarteitaliana.it>)



Wunderkammer. <https://www.artribune.com/arti-performative/cinema/2019/03/wunderkammer-le-stanze-della-meraviglia-il-documentario-nelle-sale-italiane/>

In fact, there is not yet a true organization of the ideas concerning the restoration, there is no doctrine. These areas of thought are expressed by the most sensitive personalities, able to see the object in its real historical and artistic performance.

The stylistic refurbishment, proposed in the XVII and XVIII centuries, is not the philologically one as it will be at the early XIX Century, but reveal a "formal" attention to the past.

In this sense, must be understood the pointed arches in the gothic style built by Antonio Morandi (called "Il Terrabilia") in the cathedral of San Petronio in Bologna (1390 c.) built between the end of the XVI century and the mid-of the XVII, as Carbonara underlines. In line with this way of intending the restorations are the stylistic interventions concerning some important Italian architectures:

- the stylistic addition, in the '600, of seven windows, intentionally not distinguishable, in the Medici Riccardi palace in Florence
- the homogeneous extensions of the 17th century of Palazzo Pitti (XV sec.)
- the reintegration in romanic style, by F. Ruggeri (1736-38), in the Collegiate in Empoli
- the heightening of the side bodies of Siena Public Palace (1680-81).

The project by Cristopher Wren on Westminster Abbey is also attributable to the category of mixed interventions. In fact, Wren restores the original shape of the northern side, eliminating all the elements considered incongruous and suggesting, in

the crossing point of the main nave with the transept, a spire in a Gothic style ³².

In Italy, again, it is possible to remember the work made on the Orvieto Cathedral, where the original façade of the XIV Cent. was decorated in the XVI Cent. and mosaics were added in the Baroque period.



Architectural Competition for a New "Spire" for Westminster Abbey. Wren's spire design. <https://www.antiquemapsandprints.com/categories/prints-and-maps-by-subject/town-views-buildings/religious-buildings/product/westminster-abbey-sir-christopher-wren-s-design-to-complete-the-abbey-c1880/P-6-023760-P-6-023760>



Cathedral of Bologna, Italy. <https://www.bolognadavedere.it/cosa-vedere/basilica-di-san-petronio-a-bologna>



Cathedral of Orvieto, Italy. <https://www.turismo.it/italia/poi/duomo-di-orvieto/scheda/orvieto/>

As Carbonara states "*it is possible to recognise a building manner connected with its time and characterised by strong retrospective attention, for the well-known reasons "di convenienza" ("of convenience"): the spires are only apparently in gothic style. Really, they can show a Renaissance language. It is possible to discover the idea of "concinnitas" applied by L. B. Alberti in Santa Maria Novella at Florence*"³³.

Although, according to several scholars, modern culture showed a renewed sensitivity in understanding antiquity, the practice is not supported by a conscious idea of safeguarding, restoring and preserving ancient monuments, nowadays called assets. Starting from XVII Cent. Pantheon became the object of the Popes' interest because it was considered the symbolic architecture able to connect the "old" with the "new" Rome. The works were made in two steps: the first under Pope Urbano VIII, in 1632, when the bronze ceiling was demolished as, probably, it was suggested by G. L. Bernini; the second, under Pope Alessandro VII in 1667, when two lost columns were replaced. In the first half of the XVII Cent. One couple of small towers bell were built in the front of the monument. In the construction seems involved Carlo Maderno,

³² D. Linstrum, *Il restauro architettonico nell'Inghilterra del XVII secolo*, in "Restauro – Quaderni di restauro dei monumenti e urbanistica dei centri antichi", 18/1975, pp. 4-43. G. Carbonara, *Avvicinamento al restauro*, op. cit., p. 66.

³³ G. Carbonara, *Avvicinamento al restauro*, p.67.

Francesco Borromini and, perhaps, Gian Lorenzo Bernini. The towers were demolished in the first half of the XIX Cent³⁴.

Restoration versus conservation: its establishment and the first development in XIX- XX Centuries

Eugène Emmanuel Viollet-Le-Duc (1814-1879)

The start of restoration as a historical discipline and aesthetically autonomous dates back to the mid-Nineteenth century.

Previous civilizations and cultures place the intervention outside the mainly construction dimension, aimed at maintaining the building, in particular from the technological point of view (that is, the guarantee of liveability) and structural functioning. In the Nineteenth century, the development of historical sciences through the use of experimented knowledge tools such as comparative and classifying ones, also used for the study of architecture, seems to offer the opportunity to the scientifically reconstruction of the original forms of the building: we are, again, in search for national and historical identity which is also reflected in the artistic and stylistic component of the monument.

This cognitive process guiding the intervention proceeds with the revival of Greek and Roman art promoted by the academies of fine arts between the late Eighteenth and early Nineteenth centuries.

The study of antiquities is seen not only in their damaged contingency, but also in an attempt to reconstruct their original forms through positive tools to appreciate their formal integrity and stylistic representativeness.

In Italy, contemporary historical and linguistic research suggest studies aimed at art for which the historical and philological method, can offer a valid instrument of investigation, scientifically controllable.

In the context of the early Nineteenth century French culture, the entry *Restoration* in the *Dictionnaire raisonne* was codified for the first time by Viollet-Le-Duc

³⁴ G. Carbonara, Avvicinamento al restauro, p. 68.

“The term Restoration and the thing itself are both modern. To restore a building is not to preserve it, to repair, or rebuild it; it is to reinstate it in a condition of completeness which could never have existed at any given time. It is only since the first quarter of the present century that the idea of restoring buildings of another age has been entertained; and we are not aware that a clear definition of architectural restoration has as yet been given. Perhaps it may be as well to endeavour at the outset to gain an exact notion of what we understand, or ought to understand, by a restoration; for it is evident that considerable ambiguity has insensibly gathered about the meaning we attach, or ought to attach, to this operation. We have said that both the word and the thing itself are modern; and, in fact, no civilization, no people of bygone ages, has conceived the idea of making restorations in the sense in which we comprehend them. We might say that it is as inadvisable to restore by reproducing a fac-simile of all that we find in a building, as by presuming to substitute for later forms those which must have existed originally”³⁵.

The restoration of Viollet is connected to the political program which, in a cultural climate that draws on both the paths of positivism and of idealism, aspires to the reconstitution of the political establishment before the revolution and the Napoleonic imperialism. The restoration, confronting a society in profound change, brings the symbols of the ancient regime back to life.

It is, in fact, the application of a historical, heuristic and classifying approach according to which, despite the recognized difficulties and through some parameters, it is possible to “re-build” the object not only in primitive forms, or presumed such, but also in those that, due to incompleteness, it has never had. The “presumption” that leads Viollet to assert that the restorer can replace the initial designer originates from the trust placed in the study and in the identification of styles.

Furthermore, Viollet’s restorative practice is mainly used for architectures of the generically medieval period and it is a result of the state of knowledge and of construction principles, both technical and spatial, which are affected by the influence of regional schools more than design creativity of the individual architect, unlike what happens later in the Italian Renaissance.

This approach leads to construction (which it is not said it is able to end up being the

³⁵ E. E. Viollet-Le-Duc, *Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle*, Item “Restauration” vol. VIII, 14-34. Paris 1854-1868. The quote is from: *Restoration*, Eugène-Emmanuel Viollet-Le-Duc. On Restoration Sampson Low, Marston Low, and Searle. Kindle edition and from E. E. Viollet-Le_Duc, *On Restoration*, translated by C. Wethered, London, 1875, pp. 9-10, 12.

faithful re-construction) of the parts that have failed or have never been built, and the stylistic research carried out implies the proposition of a building whose date of reconstruction or restoration is difficult to guess, having as its ultimate purpose the identical (*as it was*) reconstruction of the facies of the previous reign of the Valois and Borboni.

The restoration according to the main idea of Viollet-Le-Duc is defined “stylistic restoration”³⁶.

John Ruskin (1819-1900)

At the same time, the different social and economic conditions of England, or better United Kingdom, can, in general, be considered fundamental to John Ruskin's conservative principles. The negative consequences that the industrial revolution has brought to the social structure are the basis of the contested production cycles promoted by William Morris and the artistic production of the so-called pre-Raphaelites, of which Ruskin himself is a spokesman.

Ruskin's aversion to that form of restoration intended as a remake or stylistic completion is therefore to be sought not only in the aesthetic taste of the Victorian era, but also in the desire to emphasize the need to safeguard the “handmade” in its dimension of noble craftsmanship against the alienation of creative participation, as well as moral brutalization, produced by contemporary mechanized productivity. Restoring, handling again the artifact involves the material loss of man's contribution in the realization of the object.

In “*The Seven lamps of Architecture*”, 1849, Ruskin states:

Aphorism 31. *Restoration, so called, is the worst manner of Destruction.*

“It does not belong to my present plan to consider at length the second head of duty of which I have above spoken; the preservation of the architecture we possess: but a few words may be forgiven, as especially necessary in modern times. Neither by the public, nor by those who have the care of public monuments, is the true meaning of the word restoration understood. It means the most total destruction which a building can suffer: a destruction out of which no remnants can be gathered: a destruction

³⁶ E. E. Viollet-Le-Duc, *L'architettura ragionata*, edited by M. A. Crippa, Milano: Jaca Book, 1981; M. Bressani, *Architecture and the Historical Imagination: Eugène-Emmanuel Viollet-le-Duc, 1814-1879*, Oxfordshire: Taylor & Francis, Routledge, 2014.

accompanied with false description of the thing destroyed. Do not let us deceive ourselves in this important matter; it is impossible, as impossible as to raise the dead, to restore anything that has ever been great or beautiful in architecture. That which I have above insisted upon as the life of the whole, that spirit which is given only by the hand and eye of the workman, can never be recalled. Another spirit may be given by another time, and it is then a new building; but the spirit of the dead workman cannot be summoned up, and commanded to direct other hands, and other thoughts.”

For Ruskin it is impossible to restore, since it is impossible to reproduce the object with the spirit and the eye with which the executor created it. It is not possible to reproduce what time has consumed and any attempt of restoration can only be arbitrary.



John Ruskin, Venice. *Fondaco dei turchi*, 1845. Pen and watercolour on paper.

<https://www.canalgrandevenezia.it/index.php/dipinti-sul-canal-grande-venezia/dipinti-lato-sinistro/568-umberto-boccioni-il-canal-grande-a-venezia>



John Ruskin, Florence. *Detail of the Façade of the san Giovanni baptistery*, 1872

Watercolour and bodycolour over graphite on wove paper.

<https://www.ashmoleanprints.com/image/411039/john-ruskin-1819-1900-the-baptistery-florence-study-of-the-upper-part-of-the-right-hand-compartment-on-the-south-west-fa-ade>

Material in the execution, irreproducible. In the same manner, it is possible, furthermore, to read:

“...Watch an old building with an anxious care; guard it as best you may, and at any cost, from every influence of dilapidation. Count its stones as you would jewels of a crown; set watches about it as if at the gates of a besieged city; bind it together [244/245] with iron where it loosens; stay it with timber where it declines; do not care about the unsightliness of the aid: better a crutch than a lost limb; and do this tenderly, and reverently, and continually, and many a generation will still be born

*and pass away beneath its shadow...".*³⁷

The "ideological" clash between the two different positions, namely that of Viollet and that of Ruskin, is exemplified by the case of the restoration of the marbles of the basilica of San Marco in Venice. Viollet's greater attention, all positive, paid to the static-structural aspect, prevents him from grasping, as Ruskin does, the importance also of the historical and aesthetic dimension of the church, for which the substitution of the "original" Middle East and Greece marbles (Parian marble, Verde Antico, Cipollino marble, (red) porphyry, Proconnesian, etc) specifically coming from the relationships between the Republic of Venice and Constantinople with local marble would have entailed the loss of the "stone manuscript" of the architect of the past.

The lively debate that arose around the affair of the restorations at the basilica of San Marco, promoted by Ruskin³⁸ has as a consequence a more careful interest of the Italian "restorers" to the events of the basilica, intended as an expression of Italian history and artistic sentiment.

The restoration according to the main idea of Ruskin is defined anti-restoration or preservation³⁹.

Camillo Boito (1836-1914)

The proposition of conservation as an integral part of the architect's activity emerges in the topics dealt with by Boito who, in the moment of the reorganization of the academies of fine arts and of the *Royal Higher Technical Institute of Milan*, faces the problem of the training and role of the architect, of his real commitment to the design of new buildings and, therefore, from the search for a national style to the practice of restoring the ancient.

The intention is to seek the guarantee of protection, but also to develop a conscience to manage human activity and production.

Born in Rome in 1836, died in Milan in 1914, brother by the musician and poet Arrigo (1842-1918), Camillo Boito studied in Germany, Poland, Padua and Venice, where he

³⁷ J. Ruskin, *The Lamp of Memory: Aphorism 31*, in "The Seven Lamps of Architecture", Library Edition John Ruskin edited by E. T. Cook and A. Wedderburn, London, 1903, p. 242. (First edition, London, 1846).

³⁸ A. P. Zorzi, *Osservazioni intorno ai restauri interni ed esterni della Basilica di San Marco con tavole illustrative di alcune iscrizioni armene esistenti nella medesima* – With a mail by J. Ruskin, Venezia: Ongania Successore, 1877.

³⁹ G. Rocchi, F. La Regina, *John Ruskin e William Morris*, in "Restauro – Quaderni di restauro dei monumenti e urbanistica dei centri antichi", 13-14/1974; A. Chatterjee, *John Ruskin and the Fabric of Architecture*, Oxfordshire: Taylor & Francis, Routledge, 2018.

had the chair of architecture, succeeding the Italian architect, art art critic and historian Pietro Selvatico.

The study of arts, focused on stylistic research finds in the magazine directed by Boito “*Arte italiana decorativa e industriale* (Italian decorative and industrial art), an effective expression of the ways of approaching the examination of ancient things, up to the illustration of their restoration.⁴⁰

In the title of the magazine, first edited by Ongania in Venice and later taken up by the publishers Hoepli in Milan and Istituto di Arti Grafiche in Bergamo, the parallel with the *Spätromische Kunstindustrie* published by Alois Riegle in 1901 is evident.

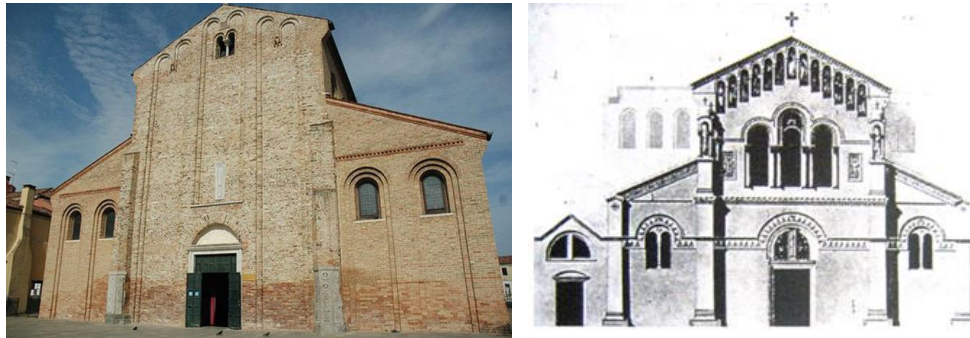
Beyond the necessary differences between the two scholars regarding the approach to the protection of heritage, there is the recognition of an artistic production that does not refer to the single author, but to a more anonymous craft activity that cannot be less significant for art and history.

In 1883, during the "meeting of Engineers and Architects", Boito enunciated the essential points of a new way of understanding the restoration, placing itself controversially in antithesis to that proposed by Viollet and which, instead, seems to be affected, even if not declaredly, by the influences of Ruskin's theories and Morris' thought.

His real influence in the field of the restoration lies in the theoretical contributions in which the precise desire to seek an all-Italian way of architectural restoration is revealed, capable of freeing itself from the grip of Ruskin's "fatalistic", "stylistic" or, as it is defined by Boito himself, "romantic" point of view by Viollet. “*Shame to deceive contemporaries; even greater shame to deceive posterity...It's natural. In forcibly hunting the spirit of the ancient architect within the head of the modern architect that adapts to the convolutions of the new brain, and childbirth is no longer ancient or modern. But do you want me to spread it? When the restorations are conducted with the theory of Mr. Viollet-Le-Duc, which can be called the romantic theory of restoration, and until yesterday the other was universal, and yet it is followed by many, indeed by most even in Italy, I prefer poorly done restorations to well done restorations. While those, thanks to beneficial ignorance, leave me clearly distinguish the old part from the modern part, these with admirable science and cunning making the new, ancient opinion, they put me in such a proud perplexity of judgment, that*

⁴⁰ ‘ANANKH, *Rileggere Camillo Boito, oggi*, n. 57, nuova serie, 2009. Numero monografico.

*the delight of contemplating the monument disappears, and studying it becomes an annoying effort. (...)*⁴¹



The facade of Murano (Venice) cathedral as it is today and in the Boito's project.
<https://evenice.it/venezia/monumenti-chiese/basilica-dei-ss-maria-donato-murano>.

The pursuit of conservation takes place through respect for the signs of the time (that are witnesses of the object's history), as can be read on the surface of the buildings and, paradoxically, as this is noticeable in the face of poorly conducted restorations. Among the "bad" restorations Boito also includes the interventions of the Baroque period on Christian basilicas since the "coverings" with stucco mortar and plaster made according to the taste and fashion of the period are easily removable, leaving the original forms of the structure on sight.

The principle followed by Boito is to "preserve, not restore", meaning restoration as the careful and mimetic reconstruction of the monument. During the quoted Conference held in 1883⁴², Boito declared the 8 points according to which it is possible to have a "good" restoration, in the respect of the historical value of the building:

- 1- stylistic differences between the new and the old;
- 2- difference of construction materials;
- 3- deletion of shapes or ornaments;
- 4- exhibition of old pieces removed, open next to the monument;
- 5- engraving in each renewed piece the date of the restoration or a conventional sign;
- 6- descriptive epigraph incised on the monument;
- 7- description and photographs of the different periods of the work, placed in the

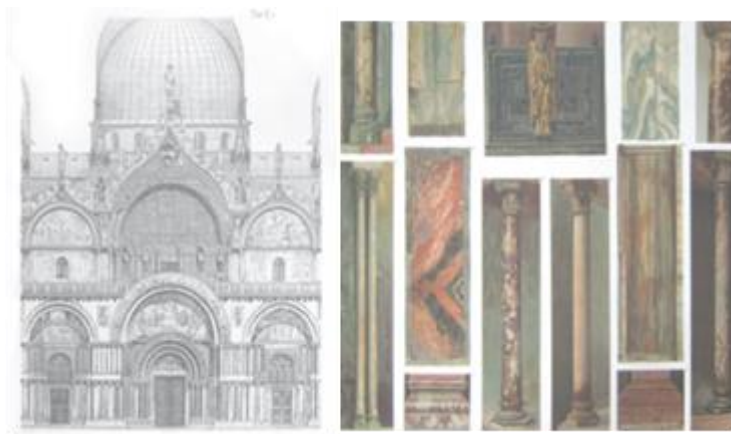
⁴¹ *"Quando i restauri sono condotti con la teoria del signor Viollet-le-Duc, la quale si può dire la teoria romantica del restauro, e fino a ieri l'altro era universale, e tuttavia è seguita da molti, anzi dai più anche in Italia, io preferisco i restauri mal fatti ai restauri fatti bene. Mentre quelli, in grazia della benefica ignoranza, mi lasciano chiaramente distinguere la parte antica dalla parte moderna, questi, con ammirabile scienza ed astuzia facendo parere antico il nuovo, mi mettono in una sì fiera perplessità di giudizio, che il diletto di completare il monumento sparisce, e lo studiarlo diventa fatica fastidiosissima". C. Boito, I restauri in architettura. Dialogo primo, "Restauri in architettura", in "Questioni pratiche di belle arti. Restaurare, concorsi, legislazione, professione, insegnamento", Milano: Hoepli 1893, p. 4.*

⁴² *Atti del Quarto Congresso degli Ingegneri e degli Architetti Italiani, Roma gennaio 1883, Roma: F.lli Centenari, 1884, pp. 57-62.*

building or in a place close to it, or description published for the prints;
8-dissemination.

In the role of adviser and reviewer, he was almost definitely present in the following works:

Pila gate in Genoa; church of santa Maria delle Carceri a Prato - by Giuliano da Sangallo (in 1885 the study to complete the revetment in green and white marbles of the façade was developed); church of san Domenico in Naples; church of san Pietro in Zuri - Sardinia; church of san Giovanni in Conca in Milan; the façade of san Sebastiano in Verona; church of san Pedro de la nave in Spain.



E. Pedon, heliography, J.R. Military Geographical Institute in Vienna, cupes geometriques, Tav II 2, Drawings of the San Marco marbles in *La basilica di San Marco a Venezia*, Ferdinando Ongania publisher, 1883, edited by C. Boito.

He was in the main commission for the construction of the façades of the main churches in Italy as: Santa Maria del Fiore at Florence and the Cathedral in Milan.

His works of restoration were: Church of Santi Maria e Donato at Murano (1859); Stylistic restoration of Ticinese Gate in Milan (1861-65); Stylistic restoration and reassembling of the pieces of the Donatello's altar in the church of Sant'Antonio at Padua (1895-98).

Exponent of the eclecticism and of the romanticism, as architect he was studying in order to define a new style of architecture for the new Italy (Boito worked during the unification of Italy).

Some new architecture by Boito are: Cemetery and Hospital at Gallarate (1865-1871); Elementary School at via Galvani a Milano (1889).

The restoration according to the main idea of Boito is defined philological restoration⁴³.

Alois Riegl (1858-1905)

Alois Riegl born in Linz in 1858. He was professor of history of art at the University of Vienna and he was active in the tidying up of museums.

Representative of the “School of Vienna” for the history of art, a name covered subsequently by Julius Von Schlosser to identify a group of art historians who have innovated the studies in this field, considering the object as a document, and the technical and not only stylistic aspect as the foundation of its being. The theory formulated by Riegl starts from the following assumptions:

- overcoming the distinction between major and minor arts
- the affirmation of the *kunstwollen* or the “will of art” and the validity of all styles
- the conviction that there is no absolute artistic value but a relative one.

Monument, generally, means a work performed by the hand of the man and created with the accurate purpose of commemorating, that is to maintain the memory of someone or something for the present or future people. Documents may be sculptures, paintings, architectures, books, music.

The modern cult of monuments, according to the same definition by Riegl, is suggesting a different approach. It is possible to consider an added value, attributed to artefacts or texts not intentionally created to be monuments. The *kunstwollen* understands a scale of values, at the head of which the student sets the historical value, because it is the widest since everything has historical value, regardless of its artistic value.

Starting from an evolutionary concept of history, Riegl recognizes that every artistic monument has this historical value, because it is a testimony of a precise moment of the evolution of figurative arts.

However, each historical document has its value of art: for example, a ripped sheet of notes, itself, next to its historical value (evolution of the manufacture of paper,

⁴³ G. Rocchi, *Camillo Boito e la prima proposta normativa del restauro*, in "Restauro – Quaderni di restauro dei monumenti e urbanistica dei centri antichi", 15/1975; *Camillo Boito moderno*, edited by S. Scarrocchia, Milano; Udine: Mimesis, 2 voll., 2018; *Memories on John Ruskin. Unto this Last*, in "[Restauro Archeologico](#)", numero monograficoedited by S. Caccia Gherardini, M. Pretelli, 2 voll., 2019.

writing, of the materials used in writing, etc. etc. of artistic elements such as the external appearance of the sheet, the shape of letters and so on) has its artistic value due to the manufacture of the paper, the colour of the paper, the calligraphy style, and so on.

The art monuments, in fact, next to the historical value, may also present an artistic value, which makes us prefer a more recent artist than one of the past (for example Tiepolo-XVII sec. to the Mannerism-XVI sec).

Consequently, there was spoken about the desired or intentional monuments with a memory value, which together with the unwanted monuments are part of the class of historical monuments.

But these refer to a precise time, therefore the purposes for which they were designed. Historical monuments enter in an even wider set that is called of the ancient monuments.

But how are man's products protected in relation to the value that is given to it? And how do the values release as a memory with the cult of monuments?



Der Moderne Denkmalkultus: Sein Wesen Und Seine Entstehung, Il culto moderno dei monumenti (1903), Alois Riegl

Let's review what these values are as a memory:

Antiquity value: the most generic. It shows its non-modern appearance distinguishable both in its stylistic form and in its imperfection, in its lack of unity, in a tendency to fall in form and color that is not generally typical of recent products.

How do you recognize this value in the object? If the value is in its degraded state, in its dissolution, then it should not be preserved, but should be abandoned to its dissolution.

Historical value: it is in the fact that identifies a precise phase of the evolution of human activity. For this reason, the monument becomes interesting, not for the dissolving power of nature but for the fact that represents a testimony of past civilizations. Historical value is greater the less degraded it is.

For example, the historians cannot appreciate the ruin of Parthenon, preferring its integrity, from one side because it is an expression of a certain evolutionary phase of the temple construction, and from the point of view of the construction technique as of the ideas of worship, etc. The respect of the historical value tends to the conservation of the state in which the monument is found, in order to block the activity destroying the forces of nature.

Intentional value as memory: if the ancient value respects the past as it is, and the historical value isolates the moment that the object represents, the intentional value as a memory must keep alive and present the memory for which the monument is built, for which it must give up the idea of the past.

This value justifies the restoration, intended as a refurbishment, because without them the monuments would cease to be wanted.

It therefore proposes the immortality of the monument as the purpose.

Other values attributed to the objects of the past arrive from the relationship of contemporary values with the cult of monuments. Riegl starts from the assumption that monuments also can meet sensitive needs, individual, as well as the new creations could do.

For this reason, the contemporary value does not refer to the origin in the past of the monument, or to its value as a memory.

The contemporary value expresses itself in the search for the compliance and integrity of the work and therefore it is contrary to the value of the ancient, which would like

to abandon the monument to its natural destiny.

Because the contemporary value wants to satisfy natural or intellectual needs, value of use and artistic value are adding. This, then, stands out between the value of novelty and refers to a just-completed work, and the relative artistic value, of which consciousness is taken only at the beginning of the '900.

Summarizing, the values for Riegl are:

- Value of the ancient (the symptoms of the decay appreciated)
- Historical value (elimination of the symptoms of decay)
- Intentional value as memory (it is restored to keep the object unchanged)
- Value of use (in conflict with the value of the ancient, why it finalizes the intervention to guarantee the use of the manufacture)
- Artistic value:
 - Value of novelty (it is only beautiful what is integrated. what is incomplete, fragmentary, degraded is ugly)
 - Relative artistic value (with which all the works of the previous artists are appreciated, starting from the principle of the *kunstwollen*).

The restoration according to the main idea of Riegl is in the philological restoration sphere whose activity was strictly connected with the monument safeguarding state institutions⁴⁴.

Gustavo Giovannoni (1873-1947)

He was born in Rome in 1873. He obtained the degree in engineering in 1895 with a thesis concerning architecture and structural mechanism. He followed a specialization in public health and, also, in history of art with Adolfo Venturi.

In 1899 he started his academic career as assistant in the course of technical architecture and in general architecture at the "Scuola Regia di Applicazione" in Rome.

In 1914-15 the municipality of Rome appointed the artistic association to project for an ample residential area in Ostia. The rules to control the quality of the building, that haven't been defined yet by the building code, were the goal of the architects involved, and Giovannoni in particular.

⁴⁴ A. Riegl, *Il culto moderno dei monumenti: il suo carattere e i suoi inizi*, edited by S. Scarrocchia, translated by R. Trost and S. Scarrocchia, Bologna: Nuova Alfa, 1985 (Original edition: *Der moderne Denkmalkultus : sein Wesen und seine Entstehung*, 1903); *Alois Riegl (1858-1905) un secolo dopo*, Atti del Convegno Internazionale di Studi, Roma 30 Novembre, 1-2 Dicembre 2005, Accademia Nazionale dei Lincei, Atti dei Convegni Lincei 236, Roma 2008.

Particular regard was dedicated to study the urbanistic layout between the area for the middle-class bathers, near to the station, and the area intended to upper class, near to the pine forest and characterized by small parcels with detached houses and recreation services.

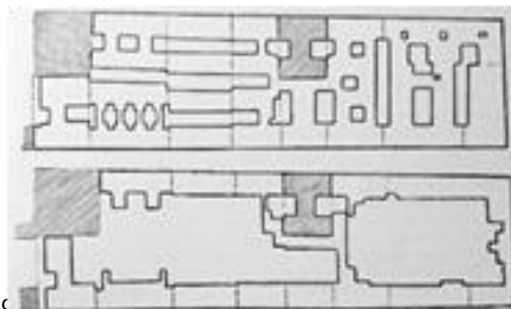
In 1915, Giovannoni with Marcello Piacentini (1881-1960) inside the work of artistic association, designed his proposal for piazza d'Armi, a variant of Rome town plan.

In 1916 the commission designated to revise the town plan proposed by Sanjust di Teulada was nominated.

In 1918, the commission, under the presidency of prof. Filippo Galassi and Gustavo Giovannoni, presented the proposal of arrangement of "quartiere Rinascimento" that consisted of:

- Conclusion of freeways, which should have been implemented independently respect the internal organization of the district
- Arrangement of the district according to theory of "diradamento/thinning"⁴⁵.

In 1918 was founded the "Scuola Superiore di Architettura" G./"The higher School of Architecture" of Rome. It was the first in Italy. Giovannoni had been heading up it from 1927 to 1935.



Internal refurbishment of a group of built up areas and the unification of small courtyards which thus constitute larger spaces and gardens. Plan before and after the micr-demolitions. G. Giovannoni, *Vecchie città ed edilizia nuova*, Torino, 1931.

He was a supporter of the faculty of architecture where he had the chair in monument restoration. Since 1927 he was official member of fascist labor union. In 1925 he was member of the commission created to safeguard the monuments in Rome. In 1928 the first national congress of roman study, of which Giovannoni was one of the vice-chairperson, was organized. During the congress the architect Alberto Calza Bini

⁴⁵ G. Zucconi, *Gustavo Giovannoni: A Theory and a Practice of Urban Conservation*, in "Change over Time" March 2014 (<https://cotjournal.com/gustavo-giovannoni/>).

proposed the constitute of a "Unione Corporativa dell'Urbanistica", presupposition to find the INU or National Institution of Urbanistic (still existing). In 1929 Giovannoni together with "Gruppo la Burbera" presented the new town plan of Rome, so called "la Burbera" that foresaw: the demolition of the baroque center, the construction of two new main axes and in their intersection an ample plaza. The project was disapproved by many parts and also by Piacentini. The contents of this project weren't recognized by the real town plan that was presented to Mussolini in 1930. The aim of the latter one was:

The beginning of further major works of the regime and the supporting of the private enterprise.

Since 1937 he had published the magazine "Palladio", still existing.

In 1939 he founded the "Centro Studi di Roma di Storia dell'Architettura/Center of Studies on History of Architecture", as continuation of the "Associazione Artistica/Artistic Association" that had been closed in 1932.

He died in Rome in 1947.

His projects to remember are:

- palazzo Torlonia in Rome - 1908;
- Chiesa degli Angeli Custodi in Rome - 1922/24

His restoration projects to remember are:

- Abbey di Montevergine in Rome - 1912/13;
- Collegiata of Sant'Andrea in Orvieto - 1918/30;
- Palace of Municipality of Pontecorvo - 1926/27

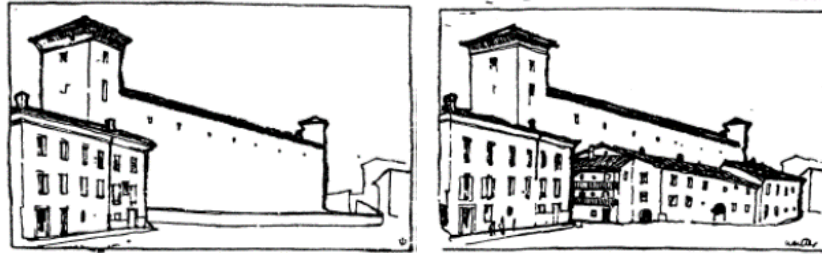
His urban projects to remember are:

- Masterplan of "Quartiere Rinascimento" in Rome
- 1913/40;
- town plan of Ostia Marittima - 1914

The principles of restoration, so-called "scientific", were presented by Giovannoni. The monument was entirely considered by its historical and artistic value.

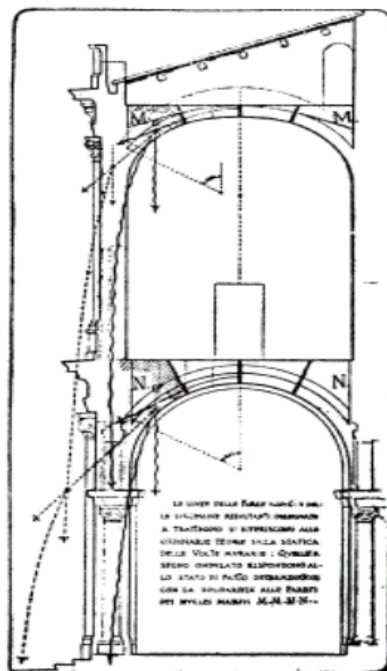
The definition of "restauro scientifico/scientific restoration" implied a meticulous regard to the monument, by means of direct analysis, survey of geometry and survey of construction systems. The knowledge of latter wasn't adopted, as used to do by

Viollet, to rebuild in style, but according to "restauro storico", they were studied to respect the monuments as a document and a sign of the past.



Trento. Insulation proposal for Torre Aquila Fuori le Mura.
G. Giovannoni, *Questioni di architettura nella storia e nella vita*, Roma, 1925.

Giovannoni was moving between three important paths of activity and research related to the past: architectural restoration, urban planning with special attention to the spatial role of the monument, to the hygienic field and to the history of architecture, with specific awareness to the structural behaviour and the construction systems. Of course, we have to consider all his work in his cultural period and especially the first three decades before the Second World War.



Sezione schematica
del portico di Villa Albani.

Structural evaluation with the use of Mery's method. G. Giovannoni,
Questioni di architettura nella storia e nella vita, Roma, 1925.

For Giovannoni restoration is a long a meticulous work that includes:

- Visible and invisible elements of the monument must be considered by

- means of a deeply survey
- Study from historic and artistic point of view
- Designing of a defined project from a technical point of view
- Photographic dossier of the building, before, during and after the restoration
- Conservation, analysis and cataloguing of all the elements removed.

These actions should be done because: *“few tasks are as burning as those to him [the restorer] entrusted, that the errors that are committed in a restoration remain permanent and immutable to fake a concept that does not belong to us, [...]. And it is the purpose of living the monuments on which the time passed to the beauty and history, to keep the glory of these eloquent witnesses of the ancient events, of the art of life of our ancestors in the homeland.”*⁴⁶

Giovanoni recognizes the monument not only in magnificent and symbolic building with a great historical and artistic value. Every building from the past is a sign, a testimony of its period and it must be analyzed carefully taking in consideration also its natural and urban environment.

Giovanoni takes and completes Boito's idea and underlines the following principles: maintenance, consolidation, conservation. The use of modern technology is required and suggested.

icular respect to the authenticity of the structure should be given by the project of consolidation.

The entire life cycle of the building should be considered. If the project foresees the removal of previous elements it will have to pay attention to the artistic value of the building:

- The addition parties must be noticeable, in every case the date of execution must be ever reported;
- The addition parts should have simple and neutral design;
- The reconstruction must follow defined data. Hypothesis and uncertainty are not admitted;

⁴⁶*“Pochi compiti sono ardui come quelli a lui [il restauratore] affidati, che' gli errori che si commettono in un restauro rimangono permanenti ed immutabili a falsare un concetto che non appartiene a noi,... . Ed è il fine di far rivivere alla bellezza ed alla storia i monumenti su cui passò l'ala del tempo, di conservare alla patria la gloria di questi testimoni eloquenti delle antiche vicende, dell'arte della vita degli avi nostri”*. G. Giovanoni, *Restauro dei Monumenti*, in «Bollettino d'arte del Ministero e delle attività culturali», Serie 7, n° I-II Gennaio-Febrero, Roma, 1913, pp.1-42.

- Neutral elements must be inserted in the point of contact between the original parts and the new ones;
- The same respect that is destined to the monument must be applied to its environment.

Giovannoni disapproves the stylistic restoration suggested by Viollet-Le-Duc. He considers this practice not scientific and bringing falsifications. Moreover, he is critic about the contemporary architectonic style, he is against the restoration that adds parts of building according to the modern style.

Giovannoni distinguishes between "dead monuments", that are like documents and testimony without other functions (Colosseum, at that time, was recognized as an example. Nowadays, the function of Colosseum is related with the touristic policy), and "alive monuments", that are still in function. For the latter ones he supports a congruous reuse according to their structural, architectonic and design features.

Giovannoni distinguishes different types of restoration:

- Consolidation (the minimum intervention, to recover the structure, should be followed)
- Re-composition or anastylosis (union of scattered elements)
- Liberation (removal of the elements without historic and artistic value, but conservation of every valid addition)
- Completion (this modality is accepted in case of accessory parts and always recognizable)
- Innovation (with addition of essential parts, only when it is impossible follow a different approach).

In the lesson by Giovannoni it is possible to find the harbinger of the Athens Charter of 1931: Giovannoni was one of the discussants of the Charter and was in the Committee of the Italian Charter of Restoration established in 1931-1932.

As town planner, Giovannoni is very environmentally conscious at that time. He defends minor architecture that is considered like frame of monumental architecture.

He does not support the "sventramento/gutting" theory (he is against those in "Spina di Borgo" today noted as via della Conciliazione, by the architect Marcello Piacentini), in that case, he proposes the application of "diradamento/thinning out" theory. This approach uses micro interventions, isolated and punctual (nor new constructions nor superelevation), to re-give balance healthy conditions of the quarter and assure the

correct visibility of the monument.

Giovannoni's activity is related to important institutional commitments. His personality is linked, in fact, with some essential laws about safeguard and urban planning. Moreover, the Athens International Charter of Restoration 1931 and the Italian Charter of Restoration 1931-32 are related to Giovannoni.

His theoretical contribution is often not observed in his projects, that are more connected to stylistic restoration.

The restoration according to the main idea of Giovannoni is defined “restauro scientifico” (scientific restoration)⁴⁷.

Cesare Brandi (1906-1988)

According to Brandi, *restoration is generally understood to mean any intervention that permits a product of human activity to recover its function.*⁴⁸



Madonna col Bambino, Maestro della Maddalena, XIII cent. with additions of XVIII and XIX centuries. G. Carbonara, *Avvicinamento al restauro*, 2002.



Vergine col bambino, filling in the missin parts using the hatching technique. G. Carbonara, *Avvicinamento al restauro*, 2002.



C. Brandi, *Teoria del restauro* Italian (1963) and English version (2005).

Brandi distinguishes between *restoration of the industrial product* which consists production the re-establishment of the use of the product, and *restoration of the work*

⁴⁷ G. Giovannoni, *Questioni urbanistiche*, Roma: Il lavoro d'Italia, 1928; G. Giovannoni, *Gli architetti e gli studi dell'architettura in Italia*, in “Rivista d'Italia”, Anno 19. Volume 1. 1916 p. 161-196; G. Giovannoni, *Il restauro dei monumenti*, Roma : Cremonese, 1939 (?); G. Giovannoni, *Commenti e polemiche. L'organizzazione scientifica nello studio dei monumenti*, in “Architettura e arti decorative: rivista d'arte e di storia - Sindacato nazionale fascista architetti”, Anno 8. Fascicolo 3, 1928-1929, p. 140-141; G. Giovannoni, *Vecchie città ed edilizia nuova*, in “Nuova antologia di lettere, scienze ed arti”, Serie 5 v. 165 1913 p. 449-472; G. Giovannoni, *Dal capitello alla città*, edited by G. Zucconi, Milano: Jaca book, 1997.

⁴⁸ C. Brandi, *Theory of Restoration*, edited by G. Basile, translated by C. Rockwell Firenze: Istituto Centrale per Restauro, Nardini Editore, 2005 (Original edition, *Teoria del Restauro*, 1963).

of art, where the restitution of its function is a secondary aspect, being prevalent the aim, being the main purpose the respect for a work of art as a work of art.

Within Brandi's concept of restoration, what happens is that the work of art, defined as a special product of human activity, is first recognized by consciousness.

Then "*Restoration consists on the methodological moment in which the work of art is recognised, in its physical being, and in its dual aesthetic and historical nature, in view of its transmission to the future.*"⁴⁹.

The work of art determines the restoration⁵⁰

The work of art manifests a double nature: aesthetic and historical. Aesthetic, from which its artistic value comes; historical, indicating a certain time and a certain place a work of art belongs to.

Brandi states: only the material of a work of art can be restored. And then: the restoration must aim to the reinstate of the potential unity of the work of art, provided that it is possible without committing an artistic or an historical forgery, and without deleting any traces of the passage of time the work of art possesses.

The material of a work of art

Brandi interprets material as an "epiphany" of the work of art.

"in relation to restoration, we must define what material is, because it represents simultaneously both the time and the place of the restoration treatment. Consequently, we must start from a phenomenological (as opposed to an ontological) viewpoint, and from this perspective examine how the material 'transmits the epiphany of the image'"⁵¹.

Appearance and structure are two functions of matter in the work of art: in fact, it is not possible to perceive the work of art by breaking it out of the material.

Furthermore, the material is made historically significant by the work of art: therefore, it is not possible to consider replacing the material.

"Anyone who thinks that the mere identification of the quarry source of an ancient monument sanctions him to excavate more stone there and remake the monument

⁴⁹ C. Brandi, *Theory*, p. 48.

⁵⁰ The translation is by N. Lombardini. See: C. Brandi, *Theory of restoration*, Firenze, 2005.

⁵¹ C. Brandi, *Theory*, p. 51.

(where reconstruction and not restoration is involved), cannot justify himself on the pretext that it is the same material. The material is hardly the same, as it joins current history through being worked now and so it belongs to this epoch and not to a time gone by. Although chemically the same, it will be different and will amount to no more than an historical and aesthetic forgery”⁵².

The Potential oneness of the work of art

The work of art constitutes a whole, where "whole" is understood as the formal concatenation intended by the artist.

In fact, in art, the image is actually only what it appears to be, therefore the image must maintain its potential oneness.

For Brandi it is necessary to proceed by completing the work when there are certain conditions met: it is strictly forbidden to proceed by analogy.

The image is actually only what it appears to be

To reconstitute the potential oneness, integration is permitted and must be subject to the following conditions:

- When the restoration is observed from a short distance, the intervention must be recognizable
- Absolute invisibility at further distance (not to interrupt the intended unity of the image)
- Respect for the material, which is considered irreplaceable
- Restoration must allow future interventions

About the lacuna problem

The *lacuna* is the damaged area of the work of art which is subjected to restoration. Brandi states that the repaired area should act as a background to the remaining parts of the original image, instead of the original image serving as background to the new intervention.

Time in relation to the work of art and restoration and the historical case.

The restoration is legitimate only if it respects the "historical complexity" of the work

⁵² C. Brandi, Theory, p. 52.

of art: it must therefore respect the signs of passage of time present on the object and it must be recorded and recognized as historical event as it is, the fact of being affected by human action, and inserted into the process of transmission of the work of art to the future⁵³.

Practically this principle is implemented by making the intervention recognizable, by respecting the patina "which may be considered similarly as setting a time on the work".

However, the conservation of all life stages of the monument must not be a threat to its aesthetic nature⁵⁴.

The restoration with regard to the aesthetic case

The work of art does not only present an intrinsic potential oneness in and of itself, which is however not always feasible; it also presents a precise integration with a landscape and monumental complex which characterizes the same area.

*"..as a work of art reduced to a ruin, it performs the function of enhancing a landscape or an urban zone, in the consciousness of a person who recognises its validity (that is, one who sees the work in this sense as active), this is connected not to its original oneness and completeness, but to its current marred state"*⁵⁵.

Therefore, in this case the ruined object must be preserved.

Regarding the additions, Brandi observes that if they disturb, disfigure, or remove the work of art from the view, they must be eliminated; however, the problem is not always "so simple and obvious" and is "*a careful consideration of value that determines the prevalence of one or other case in the conservation or removal of additions*".

Speaking of the **patina**, its conservation is legitimate for the historical case, because it marks the passage of time, but for the aesthetic case it is also worthy of conservation, because it stresses the role of the material.

The material should only be a transmitter and should never take a precedence over the image: the patina, therefore, contributes to underline the role of the material in the work of art.

Finally, Brandi is against the "*nostalgic adagio, as it was, where it was*", considering

⁵³ C. Brandi, Theory, pp. 61-64.

⁵⁴ C. Brandi, Theory, pp. 65-69.

⁵⁵ C. Brandi, Theory, p. 72.

the rebuilding of the San Marco bell tower in Venice and the reconstruction of the Santa Trinita bridge in Florence a fake and a "*crime*"⁵⁶.

The space of the work of art

After considering the subject of time, Brandi analyses the space of the work of art, recognizing that it has its dedicated room, which is related to the surrounding area which has to be determined and from which we have to protect the work itself. This means, for example, attaching and removing a picture from the wall, putting it or removing it from a stand and so on: these are all stages of the restoration that require careful reflection and critical analysis⁵⁷.

The preventive restoration

The restoration is the methodological moment of the recognition of the work of art that imposes itself as a moral imperative, forcing to preserve the work from dangers by assuring the most favourable conditions for survival. Through the philological and scientific survey, it is possible to understand the image of the work of art (its historical and aesthetic background) and the material.

From this knowledge, it is therefore possible to deduce the rules that define the process of preventive preservation ⁵⁸.

Brandi's theory is the basis of the Italian Restoration Charter, established in 1972, which contains the main theoretical instructions for:

- the preservation and restoration of antiquities
- the conservation of architectural restoration
- carrying out pictorial and sculptural restorations
- the protection of "Historical Centres".

The "*Theory of Restoration*" published by Brandi in 1963 introduces an idea of restoration shared in a lot of Countries around the world. The theory of restoration by Brandi is an interpretation of the conservation approach. It was not able to avoid debates about the principles of conservation, formulated in a slightly different way by others scholar as, for instance, professor Piero Sanpaolesi ⁵⁹.

⁵⁶ C. Brandi, *Theory*, pp. 71-75.

⁵⁷ C. Brandi, *Theory*, pp. 77-78.

⁵⁸ C. Brandi, *Theory*, pp. 79-83.

⁵⁹ P. Sanpaolesi, *Discorso sulla metodologia generale del restauro dei monumenti*, Firenze: Edam, 1973.

Of course, it is necessary to remember that one of the reasons there are debates about the restoration approaches in Italy is because there are no specific rules; instead the project of conservation is based on a deep knowledge of the object,, and is aimed to transfer it to the future as we have it known and found. Restoration, aimed both to the reconstr and conserve, is a complex project, which is not based on already arranged solutions.

Historic centres and territory

The introduction of the question of safeguarding of historic centres and territories has led to the evolution of the concept: "*from the restoration of a monument to the restoration of the territory*"⁶⁰.

As can be seen from Giovannoni's teaching, the perspective on the monument tends to widen.

Until Boito, the attention was focused on the monument, with Giovannoni (following Hausmann's urban plans and Camillo Sitte's lesson against demolition) it had widened to historical centers and, therefore, to the territory.

It is clear that the interest can no longer be just the building, but also its surroundings which, for reasons of governance of its management and sustainability, extend to the whole territory.

Like the concept of *monument*, the term *historic centre* has also revealed a cultural dynamism that has brought about changes in meaning.

⁶⁰ F. Gurrieri, *Dal restauro dei monumenti al restauro del territorio*, Firenze: 1983.



Graphic elaboration by
Nora Lombardini.

Historic Centres

“It [the old city] was born in response to needs that in many respects were very different from ours, but of which the persistence of the plan maintains the pattern, even when the authentic remains of monuments or minor buildings are scarce; but originally it still had its own logic and hygiene, and the small houses did not choke the narrow streets and breathe through the large and delightful interior gardens; [...]

It is delineated [...] that a surviving old town is almost always unfit to become the center of the new town [...].

The desire to transform the old central city area (to which other means can bring effective improvements) into the living centre of the movement and business of the modern city is an immense, definitive and irremediable mistake, based on sophistry far from reality, destined to condemn both all that the city presents of noble and sacred, and the possibility of the ample, rational, fervent development to come”.⁶¹

⁶¹ G. Giovannoni, *Vecchie Città' e Edilizia Nuova*, pp. 155-156 (Translation by the author.)



CertaldoAlto. Plan of conservation. Survey of the facades of several buildings. Marco Dezzi Bardeschi and Giuseppe Cruciani Fabozzi, *Certaldo Alto, studi e documenti per la salvaguardia dei beni culturali e per il piano di restauro conservativo del centro storico*, 1975.

Definition of Historical Centre

According to Giulio Carlo Argan

"But let's see what is a historic centre: the monumental area? The term immediately turns out to be inadequate, inadequate with respect to a historical-artistic culture that is no longer a culture of individual things, but a culture of contexts [...]. So the idea of a monument is not enough, it is not needed.

[...] Evidently there is something more in the notion of historical centre: there is the sense of a convergent activity around certain spaces, certain absences, and of course, also of certain spaces and certain images, a certain aspect and a certain figure of the city [...].

The city has changed its structure in the last century and a half, because it has changed the economic system of production, transformed the industrial system.

[...]

We call a "historic centre" the part of the city whose layout dates back to a pre-industrial period, and therefore also to a period before the mechanisation of traffic; obviously we consider the huge peripheral part not as historic since it has grown around the "historic centre" precisely to accommodate that immigrant, industrial population.

[...] Limiting the old center to a few adaptations, to modest architectural additions that respect the environment, without introducing material alterations that result in artistic changes, and introducing the new building instead; attempts or transactions with great speculation or significant architectural expressions of modernity in the newly formed neighborhoods: this is the formula that clearly separates the camps, so that innovators and conservatives must meet there [...]"⁶².

**1971 - Final document of the sixth meeting-congress by ANCSA
(Associazione Nazionale dei Centri Storici e Antichi/National Association of Historic
and Ancient Centres)**

"It is therefore necessary to reaffirm in the first place that the problem of historic centres is an integral part of the more general issue of development and the consequent cultural rearrangement [...]. The phenomena that must be considered, in an attempt to identify a policy for historic centers, are mainly of economic and social nature [...].

In this perspective, we define [...] the HC as an "area or settlement" in which there are buildings and environments that are intended to be preserved and in which one would like to have legal constraints and rules that interfere with a "normal" market mechanism [...]"⁶³.

**Instructions for the protection of "historic centres"
(Restoration Chart-1972)**

"For the purposes of identifying Cultural Heritage, not only old urban centres must be taken into consideration [...] but [...] all human settlements whose unitary or fragmentary structures, even if partially transformed over time, have been established in the past or, among subsequent ones, any of those having particular value of historical testimony or marked urban or architectural qualities"⁶⁴.

The main interventions foreseen at urban level are:

⁶² G. C. Argan, *Il concetto di centro storico*, in "Il concetto di centro storico: ricerca archeologica, recupero, conservazione, riuso, protezione dei beni culturali", edited by J. Raspi Serra, "Atti del sesto ciclo di seminari", Università di Salerno, 1982, Milano: Guerini studio, 1990,

⁶³ *Una Nuova Politica per i Centri Storici*, Maggio 7, 1971, Bergamo, 7-8-9 maggio 1971, Associazione Nazionale Centri Storico Artistici, Atti del 6° Convegno-Congresso Nazionale dell'Associazione per i Centri Storico Artistici, Lori Seassaro (a cura di), (Bergamo 7-8-9 maggio 1971), ANCSA, Genova 1973 (https://www.ancsa.org/convegni/page/5/?et_blog).

⁶⁴ Carta Italiana del Restauro, 1972 (Ministero della Pubblica Istruzione) -. Italian Charter of Restoration, 1972 (Ministry of Public Education), *Annex d*, Instruction for the Safeguarding of the "Historic Centers".

- Urban restructuring
- Road reorganization
- Overhaul of street furniture.

The main building interventions are:

- Static and hygienic restoration of buildings
- Functional renewal.

The operational tools are:

- General regulatory plans
- Detailed plans relating to the reconstructing
- Executive plans of the sector.

Evolution of the intervention criteria on historic centres

The practices of thinning out and demolition follow sanitary measures (*Law 25 June 1865, No. 2359 on expropriation for public utility and Law 15 January 1885, No. 2892 on the rehabilitation of the city of Naples*).

The diffusion of the principles of restoration gradually leads (and more on a theoretical than practical level) to abandoning the rule of thinning out, underlining the need to keep the monument in its environment⁶⁵.

The principles expressed by the modern movement in the 4th CIAM congress (*Congrès Internationaux d'Architecture Moderne*) in 1933, titled "*The Functional City*", can be summarized as follows: assignment to the individual areas of exclusive functions, while the monuments, inserted in their environment, are enhanced by adequate roads.

In fact, the problem that arises in the Thirties derives from the conflict between the conservation of structures of the historic centre and its intended use.

Following the Second World War, the first assessment of damage caused and the first discussions on how to proceed with the interventions on the historic centres were carried out in Perugia, during the fifth National Conference on the History of

⁶⁵ C. Sitte, *The art of building the city. City building according to its artistic fundamentals*, translated by C. T. Stewart, N.Y.: reinhold Publishing Corporation, 1945. (Original edition, *Der Städtebau nach seinen Künstlerischen Grundsätzen*, 1889).

Architecture, while in 1952 in Venice, with the fifth National Congress of Urban Planning, the defence of urban environments was postulated.

The central topics revolved around the reconciliation of the old with the new: on one side Ernesto Nathan Rogers, Bruno Zevi, Roberto Pane, Leonardo Benevolo, Gillo Dorfles agree with the possibility to add new buildings in old context, while on the other side, Renato Bonelli, Antonio Cederna and Cesare Brandi declare the “intangibility” of the historical centres.

For his part, Ludovico Quaroni, an important architect and urban planner particularly active in the Sixties and Seventies of the Twentieth century, refers the problem of protecting the historic centres to the broader question of territorial planning.

In fact, it is necessary to reach the second half of the 70s to see, at international level and, specifically, in Italy, the formation of rules and laws for the safeguarding of the existing building as heritage.

AMSTERDAM DECLARATION - CONCLUSION OF THE EUROPEAN YEAR OF ARCHITECTURAL HERITAGE - 1975⁶⁶

- 1. The European architectural heritage is made up not only of the most important monuments but also of the ensembles that make up our ancient cities and traditional villages in their natural or built environment. For a long time we have protected and restored only the most famous monuments without taking into account their environment. Now they can lose much of their character if this environment is altered. Furthermore, the ensembles, even in the absence of exceptional buildings, can offer an environmental quality that makes them a different and articulated work of art; it is these sets that must be kept as such. The architectural heritage testifies to the presence of history and its importance in our life.*
- 6. This heritage is in danger. It is threatened by ignorance, by age, by degradation in all its forms, by abandonment. A certain way of planning is destructive when the authorities are too sensitive to economic pressures and the needs of traffic. Badly applied contemporary technology damages ancient structures. Illegal restorations are harmful. Finally, and above all, land and real estate speculation feeds on every error and omission and annihilates the best plans.*

⁶⁶ <https://www.icomos.org/en/and/169-the-declaration-of-amsterdam>

7. *Integrated conservation eliminates these threats. Integrated conservation is the result of the joint action of restoration techniques and the search for appropriate functions. The historical evolution has led the degraded centres of the cities and, on occasion, of the abandoned villages, to become reserves of low-cost housing.*

Their restoration must be carried out in a spirit of social justice and must not involve the exodus of all the inhabitants of modest conditions. Integrated conservation must therefore be one of the preliminary moments of urban and regional planning. It should be noted that this integrated conservation by no means excludes all modern architecture from ancient ensembles, but it must take the existing environmental context into consideration, respect the proportions, the shape and the arrangement of the volumes, as well as traditional materials.

b) This [architectural] heritage includes not only isolated buildings of exceptional value and their environment, but also ensembles, neighbourhoods of towns and villages that present historical or cultural interest.

[...]

k) as today's architecture will be tomorrow's heritage, everything must be done to ensure high quality contemporary architecture.

Conservation of the architectural heritage: one of the main objectives of urban and territorial planning



Urban Plan of Aosta, inspired by the CIAM congress 1933, by Italian group of architects BBPR (1936-37).
[https://patrimonio.archivioluca.com/luce-web/detail/IL3000057648/12/inaugurazione-della-mostra-piano-regolatore-val-d-aosta-1.html?startPage=0&jsonVal={%22jsonVal%22:{%22query%22:\[%22*:%22\],%22fieldDate%22:%22dataNormal%22,%22_perPage%22:20,%22persone%22:\[%22%22Olivetti,%20Adriano%22%22\]}}](https://patrimonio.archivioluca.com/luce-web/detail/IL3000057648/12/inaugurazione-della-mostra-piano-regolatore-val-d-aosta-1.html?startPage=0&jsonVal={%22jsonVal%22:{%22query%22:[%22*:%22],%22fieldDate%22:%22dataNormal%22,%22_perPage%22:20,%22persone%22:[%22%22Olivetti,%20Adriano%22%22]}})

**CHARTER FOR THE CONSERVATION OF HISTORIC TOWNS AND URBAN AREAS. -
WASHINGTON CHARTER 1987⁶⁷**

1. *In order to be most effective, the conservation of historic towns and other historic urban areas should be an integral part of coherent policies of economic and social development and of urban and regional planning at every level.*
2. *Qualities to be preserved include the historic character of the town or urban area and all those material and spiritual elements that express this character, especially:*
 - a) *Urban patterns as defined by lots and streets;*
 - b) *Relationships between buildings and green and open spaces;*
 - c) *The formal appearance, interior and exterior, of buildings as defined by scale, size, style, construction, materials, colour and decoration;*
 - d) *The relationship between the town or urban area and its surrounding setting, both natural and man-made; and*
 - e) *The various functions that the town or urban area has acquired over time.*

Any threat to these qualities would compromise the authenticity of the historic town or urban area.
3. *The participation and the involvement of the residents are essential for the success of the conservation program and should be encouraged. The conservation of historic towns and urban areas concerns their residents first of all.*
4. *Conservation in a historic town or urban area demands prudence, a systematic approach and discipline.*

METHODS AND INSTRUMENTS

5. *Planning for the conservation of historic towns and urban areas should be preceded by multidisciplinary studies.*

Conservation plans must address all relevant factors including archaeology, history, architecture, techniques, sociology and economics.

The principal objectives of the conservation plan should be clearly stated as should the legal, administrative and financial measures necessary to attain them.

⁶⁷ https://www.icomos.org/charters/towns_e.pdf

The conservation plan should aim at ensuring a harmonious relationship between the historic urban areas and the town as a whole.

The conservation plan should determine which buildings must be preserved, which should be preserved under certain circumstances and which, under quite exceptional circumstances, might be expendable.

Before any intervention, existing conditions in the area should be thoroughly documented. The conservation plan should be supported by the residents of the historic area.

[...]

Territory

The territory as landscape is, again, a discovery of the Humanism. It is necessary to remember the “Ascesa al Monte Ventoso/Ascent of Mont Ventoux” by Francesco Petrarca (1304-1374) which is one of the first descriptions of the human ability to enter in contact with the natural environment without suffering a “bad” nature as it was in the medieval period. The natural environment is no longer perceived as something necessarily adverse to the humanity.

The territory as landscape became symbol of the identity of the Nations starting from the second half of the Nineteenth Century.

First, the landscape is considered in its aesthetic and historical values. Its protection was due to these reasons. Since the Twenty First Century, the landscape no longer consists of circumscribed areas, but more or less the whole territory becomes part of the concept of environment.

According to the *European Landscape Convention, Florence 2000*:

“Landscape” means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors; [...].

“Landscape protection” means actions to conserve and maintain the significant or characteristic features of a landscape, justified by its heritage value derived from its natural configuration and/or from human activity; [...].

It is impossible to clearly separate the human factors from the natural ones and all the traces and transformations of the territory must be evaluated in order to plan the right

solution.

For this reason, it is necessary to encompass all the territory, study and understand it, before putting in action any idea of planning.

Nowadays an idea is highlighted, also from a sustainability point of view, of the mutual relation between heritage and environment. The heritage can influence its surroundings and *vice-versa*.

As professor Francesco Gurrieri states: *"It is certainly not the task of an architect (if not with the weight of his personal political force) to make decisions that involve different social and economic forces that are typical of the community: the architect does not have the demiurgic skills to weld reality and certain models, simply through its design operations.*

Operating and redeveloping the territory means making requests for "territorial restoration": that is, it means starting from the historicity and vocationality of certain areas in order to enhance their ability to lead them towards other productive sectors.

*Ultimately, it means promoting industrialization processes capable of producing new jobs - tending for anomalous reasons to move elsewhere - capable of involving, and recovering, with their dynamics, the degraded territories."*⁶⁸

As Gurrieri underlines, it is useless to aim the restoration's focus only to the monument. The interest's expansion to the historical center implies further extension to the territory, because immediately it is necessary to have a look at the historicized territorial structure. *"Starting from these assumptions, it is possible to find the opportunity to set up a method of territorial analysis, paying analytical attention to the components that have built a territorial form, looking for a method of analysis that is based on an overall vision of the territory and which passes through historical and geographical knowledge, economic, as well as on the dynamic interweaving between nature and social organization that is objectivized in the construction-transformation process."*⁶⁹

Nowadays, just as Forty years ago, the interest of new urban planning recognizes in the value of dynamic transformation of the territory not a chance, but an obstacle that

⁶⁸ F. Gurrieri, *Dal restauro dei monumenti*, p. 8.

⁶⁹ F. Gurrieri, *Dal restauro dei monumenti*, p. 7.

can preclude a “*spatial configuration coherent with the signs of the past.*”⁷⁰

Actually, with a global understanding of the territory, starting from the point of view of sustainability, it is possible to speak about AGRICULTURAL LANDSCAPE. The safeguarding of agricultural traditions and infrastructures of the land is nowadays a priority all over the world, in order to protect the resources for human life and the structure of the land, against natural disasters.

The attention towards the use of the land demands an interdisciplinary collaboration with a special focus on the involvement of stakeholders, with an approach of going up from the bottom, making it possible to involve the local communities in management of territory.

Aims and rules of the conservation project

The purpose of conservation is to offer the tools to deal with an architectural project concerning the existing building, regardless of its status as a monument.

The conservation/restoration of a monument is not guided by a “handbook”, but it is the result of deep analyses of the monument itself and of a project that must be discussed with the office in charge of the control, first of all Soprintendenza/Superintendency, and after: Municipality, Owners and all the Stakeholders involved in the project.

Just as a reminder, in Italy the architect (not other professionals) can sign the conservation project of a monument, starting from 1925⁷¹.

For this reason, the aims and the result of the intervention correspond to a precise design choice, made, in the sense of “conservation”, with the aim of transferring to the future not only the artistic values of the artefact, but also the historical ones. Ultimately, the purpose of conservation is to pass on the civilization value of peoples⁷².

The activity related to conservation is an architectural project

It is a precise design choice that aims to keep intact, always legible and accessible, the documentary values that the building bears, whose operation is guaranteed with

⁷⁰ F. Gurrieri, *Dal restauro dei monumenti*, p. 10.

⁷¹ *Regolamento per le professioni d'ingegnere e di architetto*. REGIO DECRETO 23 Ottobre 1925, n. 2537.

⁷² N. Lombardini, *La conservazione degli edifici*. pp. 13-101.

the appropriate adaptations to the needs imposed by the intended use, even in terms of technological, and structural safety⁷³.

Preservation is the action of keeping the object in the existing state and respecting the documental value of the material. For this reason, the repairs are necessary to prevent further damages.

Preservation is related to the action against the causes of decay or damage, such as the stress in foundation and the rotation of the wall (because of load bearing); presence of water in all its forms; chemical, physical and biological agents⁷⁴.

WHAT IS THE CONSERVATION? WHAT DOES CONSERVATION MEAN? WHY SHOULD I CONSERVE?

The Italian term *Conservazione*, can be translated in English as Conservation or, alternatively, *Preservation*.



Legnano, Restoration Studio - Politecnico di Milano. Survey and conservation project of the “Regina Elena Sanatorium”, 1924. Students: L. Bianchini, V. Bruno, A. Tettamanti, E. Volontè

According to Feilden “*Conservation is the action taken to prevent decay and to transfer to those who use and view historic buildings with wonder the artistic and human messages that such buildings possess. The least effective action is always the best; if possible, the action should be reversible and not detrimental to possible future action. The basis for preservation of historic buildings is established by legislation through listing and indexing of buildings and ruins, through regular inspections and documentation, and through urban planning and preservation action.*”⁷⁵ It is possible to define “*Conservation*” as an action to maintain the current condition of the object from the physical point of view (in this case, meaning the object’s appearance).

⁷³ B. M. Feilden., *Conservation of historic buildings*, Architectural press, Oxford: Elsevier, 3ed edition, 2003, Google Play version.

⁷⁴ B. M. Feilden, *Conservation*.

⁷⁵ B. M. Feilden, *Conservation*.

In the material, its processing, its use, the way of processing, one may find the traces of a civilization of one people: it is the witness of the culture of a nation (in the material itself - the building material changes depending on the geographical location; different materials demand different ways to treat it).

“[...] What copying can there be of surfaces that have been worn half an inch down?

The whole finish of the work was in the half inch that is gone; if you attempt to restore that finish, you do it conjecturally; if you copy what is left, granting fidelity to be possible (and what care, or watchfulness, or cost can secure it), how is the new work better than the old? [...]”⁷⁶.

“[...] The material used in the work of art carries the message of the image and it does so in the two ways which can be defined as structure and appearance [...]”⁷⁷.

Which are the relationships between the conservation of the material of the object and the shape of it from aesthetic point of view?

Which are the relationships between aesthetic shape and typology of the building?

“[...] We now return to the problem of keeping or removing additions, bearing in mind that not only a ruin is involved. It could be (and frequently is), the case that additions have been made to works of art that could recover their original oneness (and not just their potential oneness), if, wherever is possible, the additions were removed. It should be realised that, by viewing the problem from the aesthetic standpoint, the historical approach is overset, in that its focus is on preserving the additions. In the case for the artistic nature of work of art, the call is for removal. So, a possible conflict emerges with the conservation requirements advanced by the historical case [...]”⁷⁸.

This approach influences not only the idea of what the culture wants to transmit to the future but also:

- The characteristic of the architectural and urban shape of the building and of the city
- The construction labour market

⁷⁶ J. Ruskin, *The Seven Lamps*, p. 179.

⁷⁷ C. Brandi, *Theory*, p. 51..

⁷⁸ C. Brandi, *Theory*, p. 72.

- The culture of restoration, in general
- The project of restoration.

Conservation follows two purposes:

- To preserve the Cultural Heritage
- To start an eco-friendly action that means to preserve the material.

Conservation of the building materials implies:

- To know very well the shape and the geometry of the structures and of the building
- To know very well the construction materials and the construction techniques (of the present and of the past)
- To know very well the decay of material and structures
- To know very well the causes of the damages of materials and structures
- To know very well the restoration and consolidation techniques that can conserve “in situ” the historical materials and structures
- To design a project of the adaptive re-use.

The conservation project has to develop strategies, instruments, and knowledge (diagnostic in conservation and restoration).

It is also necessary to not forget that the demolition of the building and the material disposal has a huge social cost, and it is not sustainable⁷⁹.

The subjects of the preliminary studies in the training in Conservation are:

- Restoration as conservation
- Historical buildings
- Historical cities
- Historic centres
- Buildings and traditional buildings
- Urban structures, infrastructures and systems
- Environment

⁷⁹ In Italy there are no specific Guidelines for the Conservation Project of the monument.

The conservation of architecture (and cultural heritage in general) goes through the Government (MiBACt – Ministry of Cultural Heritage and Tourism- and MIUR – Ministry of Education and University) and the regulations of the City Council. The architect (the engineering only for technical problems) is the responsible of the restoration project of the monuments. The architect identifies the aim of the project and conservation (respect of the historical material as the respect of the building history) is the one that Politecnico di Milano teaches.

University trains the architect and the public administration, City Council (for its competences – respect of the City’s regulations) and MiBAC, through offices as Soprintendenza per i beni architettonici e per il paesaggio supervises the restoration project and the restoration work.

- Monuments
- Architectures
- Historic gardens
- Archaeological places and sites
- Landscapes
- Land infrastructures
- Industrial archaeology
- Archaeological ruins
- Ruins in general

All the built structures, ruined or not, ancient or not, need to be used. For this reason, it is necessary to ensure:

- The improvement of their use
- Re-use
- Valorisation
- Musealization

In order to guarantee the use or re-use, one of THE MOST IMPORTANT TOPICS COULD BE, ALSO, THE ADDITIONS OF NEW PARTS TO THE OLD ONES. The question is whether to rebuild the lost parts or to add the new ones, clearly recognizable as modern..

When the correct methodology and techniques to restore and conserve the existing structures have been found, the information, the inputs and the advice are available for projecting and designing the ADDITION(S).

This doesn't mean that it is necessary to rebuild and replace what is lost, but by understanding the existing element it is possible to find the reasons for new solutions and for new shapes.

The existing elements become an important component of THE ENVIRONMENT into which we are going to think and build the project.

Relationships among conservation project, adaptive re-use, sustainable approach of the territorial and environmental management

Environment is not a simple noun: it is an important concept that brings all of us to the idea of sustainability.

Sustainability means, synthetically, the use of the resources in the respect of the future generations.

Sustainability and restoration versus conservation have the same aim: the respect of the “status quo” in order to respect heritage for the future generations.

The practice of the conservation project has a sustainable approach in favor of the environment. Demolishing parts of buildings or an urban portion entails financial costs that are obliged to cover the expenses, also to cope with the problems arising from environmental pollution and the management of the waste.

Recycling rules and policies cannot entirely solve those problems, even if they provide excellent solutions.

Furthermore, the optimization of the expenses is sustainable when we don't waste the human, social and financial resources.

Nowadays, we speak about preventive and planned conservation “*based on regular maintenance, control of environmental factors, information management*”⁸⁰.

Preventive and planned conservation include maintenance, and it is a *compendium* of the values proclaimed by restoration. The values are: improved knowledge, improved experiences, improved researches.



Cavallasco (CO), Restoration Studio - Politecnico di Milano. Survey and conservation project of the “Oratory of SS Carlo e Antonio”, XVII Cent.. Students: C. M. Cislighi, C. Gianpietro, M. Tettamanti.

⁸⁰ S. Della Torre, *Economics of Planned Conservation*, in “Integrating aims -built heritage in social and economic development”, edited by M., M. Schmidt-Thome, K. Aalto University School of Science and Technology Centre for Urban and Regional Studies (YTK), 2010, pp. 141-156.

It is possible to make the object known not only through the object itself but, also, through the dissemination of the planned conservation activities. It is possible to publicize the activities and to enhance the awareness of the people through a good training and learning program.

Preventive and Planned Conservation is articulated as following: knowledge, monitoring, diagnosis, conservation project.

Preventive and Planned Conservation ensures the *planned* maintenance activities according the *planned* acquisition and management of the funds.

Preventive and Planned Conservation is strictly connected with local and regional resources and is aimed to identify the stakeholders at National and Regional levels and to enhance the activities related to the safeguarding of the Cultural Heritage at the National and Regional levels, too.

As the *Namur declaration* states (2015): “*a strategy for redefining the place and role of Cultural Heritage in Europe is therefore a necessary response to the current challenges in the light of the changing European socio-economic and cultural context*”⁸¹.

The peaceful cohabitation is the fundamental goal of the intercultural dialogue, but it is essential to start and to develop an ethical and fruitful collaboration in a widespread labour market where the Information and Communication Technology (ICT) and digital competences, requested and supported by the EU educational policy, could improve, promote and encourage the mechanism of the distance work (remote working).

Good examples of this labour mechanisms are represented by the building construction and the compulsory introduction of the use of the Building Information Modelling (BIM) “*for public works contracts and design contests.*”

The use of the ICT (Information and Communication Technologies) has a strong potential for activating, supporting and enhancing the participation of people with different abilities and can facilitate the flexibility and the security (flexicurity) of the development of the work.

ICT are an important challenge for a new approach in the analysis as one of the most

⁸¹ *Namur Declaration. Cultural Heritage in the 21th century for living better together. Towards a common strategy for Europe, European Community, 2015.*
(<https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=09000016806a8959>).

important activities contemplated by the planned conservation because these new technologies can not only give the opportunity for a knowledge of the CH (I repeat, we referred to constructions), but also the chance to:

- offer the instruments useful to facilitate the control of CH by the PUBLIC ADMINISTRATION
- enhance the INTERDISCIPLINARY approach to the knowledge
- improve the FM or Facility Management of the “restoration yard”
- create new occupations or develop the old ones, in field of the Preventive and Planned Conservation

With ICT we are referring to:

- the Photogrammetric and 3D Laser Scanner survey (point clouds management)
- the monitoring instruments, methodologies and technologies
- the BIM (Building Information Modelling) software and methodologies
- the evaluation of efficiency energy in the existing buildings and architectural heritage.

At the moment BIM methodology is still lacking in the field of detailed description of the object as it is requested by the CONSERVATION PROJECT.

Regulation of the protection and intervention on historical buildings

Among the first rules against the destruction of ancient monuments, it is possible to include the chirographes of the Popes in the Renaissance period, as it was already shown.

Within the State of the Pope there was a very intensive attention to the ancient memories, especially starting the XV Cent., also considering their material dimensions.

In the period of Enlightenment, especially under the Napoleon conquest of Italy, which has ultimately resulted in it being robbed of its works of arts and books, induced Quatremère De Quincy to put a stop to it and return the plundered objects to its rightful place⁸².

For the same reasons, on October 1st, 1802, the Chirograph of the Pope Pius VII on antiquities and fine arts in Rome and the ecclesiastical state in Rome enacted the

⁸² Quatremère De Quincy, *Lettres à Miranda sur le déplacement des monuments de l'art de l'Italie*. Paris: Edouard Pommier, Emmanuel Alloa, 1796.

protection of the antique possessions of the State of the Pope.

During the European Restoration, after the fall of Napoleon's Empire, cardinal Bartholomew Pacca declared the Regulation of the Care of Ancient Monuments and the Protection of the Arts (Rome, apostolic chamber, April 7, 1820).

All these documents were implemented before the establishment of restoration as a new way to approach what was recognised as symbols of the past with the dignity to represent the new ideology and the new "re-established" governments.

Starting from the second half of the XIX Cent. the need to determine rules for the protection of Cultural Heritage became more and more urgent.

The rules focused on both how and what to restore, and how exactly cultural assets should be protected.

In Italy, for instance, the main topic was to find regulations useful to control the private rights in front of the public needs.

Nowadays the Italian rules is legislative decree 22 January 2004, n.42 containing the *Code of Cultural Heritage and Landscape (Codice dei Beni culturali e del Paesaggio)*.

The institutes in charge of the intervention on heritage or cultural goods are the international State, regional, municipal bodies. Moreover, no governmental institutions are involved.

The main and first tool adopted for the protection is the scheduling of the Cultural Heritage. The locution "Cultural Heritage" (In Italian: "beni culturali") was introduced by the *Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict*, in 1954.

About this topic, rules and laws are applied in order to enact the protection.

The approach in the protection is different from Country to Country also because of different cultural attitude towards heritage. This is because different cultures can give a different connotation to the signs of their history and to the expressions of their arts in different historical periods.

There are various tools to protect Cultural Heritage, each of them has a precise scope of application and a different regulatory validity.

- Laws and rules for protection⁸³
- Restoration/Conservation charters⁸⁴
- Rules for regulation of intervention and of the investigation⁸⁵.

Rules can be established at several levels: regional, national and international.

These three different levels have the aim to underline the specific local significance and perception of the heritage, and the important value for the intercultural dialogue that the heritage must acquire.

The objective of national laws is, in general, to define the role of the central government in the protection of Cultural Heritage and in defining the relationship between the different actors involved in the protection, especially thinking about the interrelationship between private and public interests.



Legnano, Students of Restoration Studio: Simone Locatelli, Emanuele Melli, Giulio Simioni, Natiq Mikayilov - Politecnico di Milano. Survey and conservation project of the “ex Helioterapy Colony”,.1933 by BBPR,.

⁸³ J. H. Stubbs, TE. G. Makaš, *Architectural Conservation*.

⁸⁴ <https://www.icomos.org/en/resources/charters-and-texts>.

⁸⁵ UNI EN Nor.Ma.L.; *Illustrated glossary on stone deterioration patterns/Glossaire illustré sur les formes d'altération de la pierre*, ICOMOS-ISCS.

Participants/Stakeholders

The stakeholders or participants involved in the protection/conservation project are:

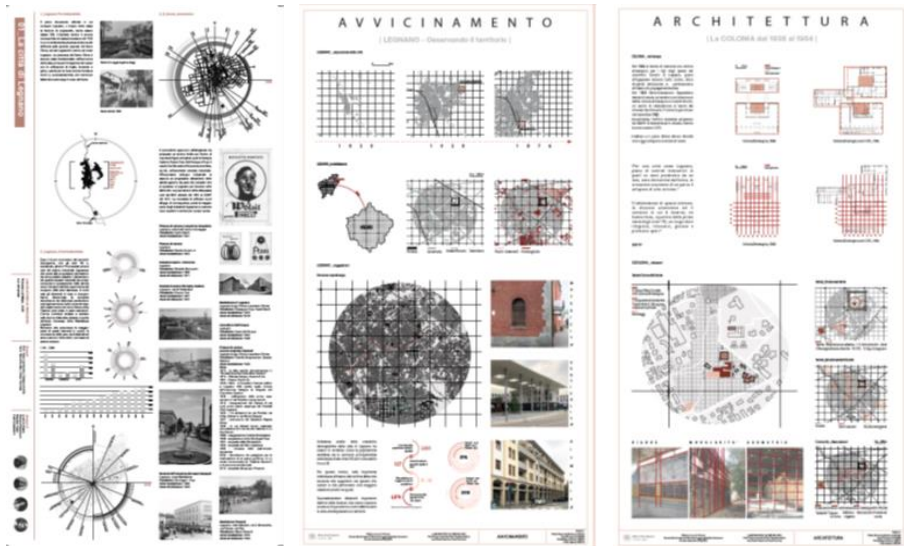
- owners (public or private);
- designers;
- Public Administration (Municipality, Region, Province, Special Office, Ministry, etc.);
- specialists involved in the restoration process;
- specialists involved in the building process;
- trainers and users.

The owners have the task, also from the ethical point of view, to preserve the object and to transfer it to the future generation. In Italy the law for CH guarantees the safeguard of the object in front of the rights of the owner.

Designers, architects, are in charge to develop the preservation project according to the Italian law, since only the architect can “touch” the monuments in the national list. Public Administrations can recognise, agreeing with the citizens, the good as Cultural Heritage and they must control, as a supervisor, the restoration activities. They must also ensure the maintenance and they must prevent the decay and a dangerous use of the goods. According to this point of view, it is possible to speak about “management of Cultural Heritage”. Management implies the involvement of the economical approach.

In general, the good must be preserved. It is necessary to apply all the best practices in order to ensure a good restoration, focused on preservation/conservation. It is also necessary to evaluate the cost of this conservation from the social and economic point of view. The specialists represent all the skills, with the diagnosis, involved in the restoration. Trainers are considered, because they must upgrade the ability of the all the stakeholders involved in the process.

The users can be or the owners, or renters, or tourists: surely the citizens and the population must be involved in a bottom-up process of conservation and valorisation/enhancement. The management of the users is one of the first points that must be kept under control.



Legnano, Students of Restoration Studio: Lorenzo Alajmo, Roberta Ravazzano, Beatrice Utano, Irakli Zukakishvili - Politecnico di Milano
Survey and conservation project of the “ex Helioterapy Colony”, .1933 by BBPR,.

The role of each participant/stakeholder can change Country by Country and, nowadays, must be interpreted from the historical and socio-political point of view.

From this situation the relationships among these actors can change and variate.

For this reason, it is important to understand and to focus on the different assets of the different Countries.

The management of Architectural Heritage is based on the recognition of its value as monument. The second step is to ensure its conservation through a restoration project.

The restoration project must ensure the transfer to the future generation the material consistency of the good and its authenticity and, according to the new international recommendations, its enhancement or valorisation.

“International papers and declarations brought the issue of heritage protection to the highest levels”.

Indeed, on the one hand, these documents invite us to recognize and accept heritage as a common and international property; on the other hand, the cards highlight the need for tolerance and cultural diversity.

International documents describe the main concept of conservation of the CH, speaking of authenticity and defining it as the ability to respect the "aesthetic and material values" of the monument which is considered a document of history and art (Venice Charter 1964).

From the historical point of view, it is important to connect the main idea of identity with the elements or symbols and signs that represent this identity.

If social identity is an invention⁸⁶ it is necessary to define who by and according to which basic principles it is possible to establish the representative characteristics of the history of a Country.

The different state of the properties; the different way of "defining their identity"; the reasons behind damages, losses, destructions of the architectural and building heritage; the different state of conservation of the heritage is a guide for the approach to conservation.

Management (including "integrated management") must consider the cultural and socio-economic heritage of a Country. The adoption of an integrated approach activates a process that must encourage private resources to coordinate public and private actions. An Cultural Heritage Integrated Management Plan (CHIMP) is an innovative tool to effectively manage the safeguarding and sustainable development of historic urban areas and their Cultural Heritage in attractive, competitive and multifunctional places. Balances and coordinates the needs of Cultural Heritage with the needs of the (multiple) 'users' of the historic urban area and the responsible governing bodies (demands from and on the historic urban area and its Cultural Heritage).

Management is the possibility of improving the social value of heritage also by "creating jobs" and strengthening "intercultural dialogue". "As confirmed by numerous studies, heritage, if properly managed, can be essential to improve social inclusion, develop intercultural dialogue, shape the identity of a territory, improve the quality of the environment, provide social cohesion and - from the economic point of view - stimulating tourism development, job creation and improvement of the background facilitating the investment.

In other words, investments in assets can generate a return in a form of social benefits and economic growth. This has been demonstrated by many authors in theoretical discourse supported by numerous case studies.⁸⁷ (*The economic and social value of Cultural Heritage*, 2013).

"Conservation planning", also from an economic point of view, offers the opportunity

⁸⁶ F. Remotti, *Contro l'identità*, Roma, Bari: Laterza, 2001.

⁸⁷ C. Dümcke and M. Gnedovsky, *The Social and Economic Value of Cultural Heritage: literature review*, EENC Paper, July 2013 (<https://www.interarts.net/descargas/interarts2557.pdf>).

to put conservation in a very interesting management process that involves the object and public policy, starting from the status (also from the point of view of ownership) of the built heritage.

Considering the restoration methodologies and technologies, aimed at conservation and the management process, it is clear that it is possible to guarantee an international sharing of the modalities because they are an important component of the conservation design practice.

Conservation technologies and methodologies aim to preserve the authenticity of the built heritage considering that it is not possible, according to the *Nara document 1994*, “to base judgments of values and authenticity on fixed criteria”.

The management process can offer models that are strictly connected to the country's cultural, social and economic conditions and that cannot be considered immobile over time and space.

International documents call for the use of CH as a glue to increase intercultural dialogue as a useful tool for connecting people with each other.”⁸⁸

“The main concepts are “valorisation”, “sustainability” and “optimization”: their interconnection must be adopted as the basis of architectural heritage conservation aimed at individual and social well-being.

Valorisation, sustainability and optimization, should be defined as follows:

Valorisation/Enhancement is the promotion of Cultural Heritage (built, natural and agricultural heritage) and is related to the preservation and knowledge of heritage and the identification of strategies to support public use, improving accessibility for disabilities.

Sustainability, or social sustainability, is the ability to establish balance by meeting existing needs without compromising the ability of future generations to meet their own.

⁸⁸ N. Lombardini, *Memory and Identity: the conservation and the management of cultural and architectural heritage*, in International Scientific Conference “Architectural heritage and modern Society”, Baku, 2019, pp. 14-18.

¹¹ “The ability of a community to develop processes and structures which not only meet the needs of its current members but also support the ability of future generations to maintain a healthy community.” – Business Dictionary (<https://www.esg.adec-innovations.com/about-us/faqs/what-is-social-sustainability/>;
<http://www.businessdictionary.com/definition/social-sustainability.html>).

¹² <http://www.businessdictionary.com/definition/optimization.html>.

Optimization means the ability to find "an alternative with the best cost-effectiveness or maximum performance achievable under the given constraints, maximizing desired factors and minimizing undesirable ones.

In comparison, maximization means trying to achieve the highest or maximum result or outcome without regard to cost or expense.

The practice of optimization is limited by the lack of complete information and the lack of time to evaluate the available information. Thinking about the process of "valorisation", it is impossible not to contemplate the legal status of the asset and the policy of conservation and management assumed in different cultural situations. Heterogeneous economic systems, different social arrangements, and specific political conditions imply distinct actions of conservation, reuse, and "valorization strategies." The national value of the architectural heritage, as a cultural asset, and of the built heritage, in general, should not be defined only on the basis of its historical and artistic connotation (as architecture), but also through the specific strategies (reflecting their peculiarity) triggered in each Country.

The term "valorization", in the context of different environments such as architectural heritage and built heritage, has different designations that must be complementary when the valorization of the built heritage becomes functional to the valorization of the architectural heritage (and vice-versa). The architectural heritage environment is considered to consist of the public and private building stock, urban infrastructure and the natural landscape.

Furthermore, the state of conservation of the anthropic and natural environment is an important variable for establishing the market value of the building heritage. After the building construction, nowadays, it is not ensured the control and the maintenance of the good: in this way, the management of the building heritage is not sustainable and is not optimised.

It is not sustainable because the employed resources, even if they are not natural but anthropic and, for this reason, replicable (it is possible to consider, also, the financial resources), if they are not maintained, when they are lost, they are lost forever and, also, for the future generation. It is not optimised, because, in order to preserve the benefits coming from the resources mentioned before, when they are lost, it is necessary to re-establish (and restore) the assets. The costs of the reestablishment of the goods, or buildings, is not only due by not optimised financial investments, but by

the fact that for a certain period, their benefits have not been able to represent a resource.

In the field of the management of the building heritage, public and private, in Italy, is, more or less, absent the policy of maintenance and valorisation.

The financial instruments for the public architectural heritage were identified: in the reduction of the public debit, in the reduction of the expenses in the management of the building not yet useful for the public institutions' activity, the transformation of the profitability of the goods with the changing of their use. The valorisation of Cultural Heritage is starting from the acknowledgement of the CH itself.

The architectural heritage is a cultural resource and, for this reason, it is impossible to replace, especially in the respect of its material authenticity: the valorisation process must support and transmit the message of its unicity and unrepeatability [Charter of Venice and Charter of Nara].

After the Second World War the “valorisation” is based on the emphasizing of the historical and artistic qualities of the monument, those are pursued with the restoration and the isolation of the good.”⁸⁹

The description of the conservation project

The conservation project is built by several documents, such as boards, reports, pictures.

It is possible to define three main phases:

The first one is the ANALYSES AND DELIVERIES

The second one is the CONSERVATION PROJECT

The third one is the ADAPTIVE RE-USE PROJECT.

Analyses and deliveries

1. Collection of pictures of the actual state (book and boards connected with the drawings) the map of the urban and natural environment of the good (board in the scales of the maps available)

⁸⁹ N. Lombardini, *Cultural heritage conservation in Italy. The new trends among theory, practical experiences and internationalisation*, “IX МЕЖДУНАРОДНА НАУЧНА КОНФЕРЕНЦИЯ по АРХИТЕКТУРА И СТРОИТЕЛСТВО ArCivE 2019 31 Май – 02 Юни 2019 г., Варна, България IXth International Scientific Conference on Architecture and Civil Engineering, ArCivE 2019”, Varna, 31 May, 01 June, 2019, pp. 1-10.

2. The analyses of the construction historical phases of the building or of the complex of the building or of a garden or of agricultural landscape or natural landscape (the transformations of these types of goods along the time are foreseen; the material is natural not artificial as in the building). Drawings in different scale and a report with old pictures and documents. It is necessary to pay attention to the sources and the archives. Their selection is important as it is important to have a critical recognition of the sources and documents.
3. The geometrical survey of the building. For the project of conservation, the scale of the drawing must be almost 1:50, with details in different scales of representation.
4. For the territory or a complex of buildings it is practical to use the scale coming from the existing maps (in each Country it is possible to find maps. Perhaps, the availability might differ depending on the Country).
5. The analyses of the state of conservation of the good (building, architecture, landscape, etc.), survey of the alterations, the decays, and the damages in the surface and in the structure, by IDENTIFYING THEIR CAUSES (files in a form of a report with a survey of each decay for any type of material and explaining the position of the decays etc., on the cultural asset; drawing with the maps of the decays, alterations, damages. This process well known as DIAGNOSIS PROCESS - report, files, boards).
6. The analyses of the environment (climate, pollution, seismic conditions, hydrological conditions, geological conditions, archaeological conditions) useful for the diagnosis of the damages, etc. (reports and boards, if necessary).
7. The analysis of the urban, economic and social context, starting from the potentiality of the good, in order to suggest its "use". The study of the potentiality of the good means that what it is expected as a new use of the building has to respect the value of the good and cannot at all change its authenticity, also from the material point of view.

Conservation project:

- Conservation and respect of all the historical phases of the building or of the good in general, so that its documentary value is transferred to future generations.
- Solution of the problems of degradation, alteration of materials and damage of structures.
- Choice of the right use, i.e. a **compatible** use, also in relation to the load-bearing capacity of the building or building complex.

- Adjustment of the building or of the building complex to the new loads of use against seismic, hydrogeological and also anthropogenic risks.
- Keeping the historical phases of the building evident and legible.

Re-use:

- Understanding the “vocation” of the building considering its history and its architectural, artistic, historic and construction characteristics.
- Designing the possible completion by the addition of new elements, completely distinguishable from the existing one.
- Understanding the structural behaviour of the building to avoid strong structural interventions.

Short consideration about "material" and its meaning as “document”

According to Ruskin:

Materials:

“It is as the centralisation and protectress of this sacred influence, that architecture is to be regarded by us with the most serious thought.

We may live without her, and worship without her, but we cannot remember without her. How cold is all history, how lifeless all imagery, compared to that which the living nation writes, and the uncorrupted marble bears!”⁹⁰.

According to Viollet-Le-Duc:

Matériaux

“Il est une observation intéressante à faire et qui peut avoir une certaine portée. Plus les peuples sont jeunes, et plus les monuments qu’ils élèvent prennent un caractère de durée; en vieillissant, au contraire, ils se contentent de constructions transitoires, comme s’ils avaient la conscience de leur fin prochaine. Il en est des populations comme des individus isolés: un jeune homme bâtira plus solidement qu’un septuagénaire, car le premier n’a pas le sentiment de sa fin, et il semble croire que tout ce qui l’entoure ne saurait durer autant que lui. Or le moyen âge est un singulier mélange de jeunesse et de décrépitude. La vieille société antique conserve encore un souffle de vie; la nouvelle est au berceau. Les édifices que construit le moyen âge se ressentent de ces deux situations contraires. Au milieu des populations qui sont pénétrées d’une sève jeune et forte, comme les Normands et les

⁹⁰ J. Ruskin, The Seven Lamps of Architecture, Chapter VI, quote 26

Bourguignons par exemple, les constructions sont élevées beaucoup plus solidement et prennent un caractère plus puissant que chez les habitants des bords de la Seine, de la Marne et de la Loire, dont les mœurs se ressentent encore, pendant le XIII^e siècle, des traditions romaines. Le Bourguignon a même, sur le Normand, un avantage considérable, en ce qu'il est doué d'une imagination active et que son tempérament est déjà méridional"⁹¹.

The material has a dichotomous role for the conservation of Cultural Heritage.

In fact, from one side, the study of construction characteristics aims to investigate the material and the structures that are built with it. From the other side, the study of construction systems should extend our point of view about methods, strategies and materials, which are useful to complete, reuse, reduce or maybe to stop the decay/instability of the existing building. Therefore, the reason to study the building construction, which is not to be confused with the technology of material or structural mechanics (from which it takes a lot of terms and methodology), should be researched with a clear understanding that it is not possible to achieve conservation without knowledge and without the respect of material and formal consistence of the object.

A term "construction systems" is therefore be used in order to identify material, construction and structural aspects of the object.

Conservation shouldn't only be seen only as a process of knowledge, but it should be seen as a design action because, as a cognitive procedure, it also requires a careful preliminary planning.

For the Western culture, since Plato and Aristotle, material had been mentioned with

⁹¹ "CHAPTER VII. *Materials.* Here is one interesting observation to be made which may have a certain bearing. The younger nations are, the more do the monuments that they erect take the character of durability; in growing old, on the contrary, they are content with transitory constructions, as if they were conscious of their approaching end. It is with nations as with single individuals; a young man will build more solidly than a septuagenarian, for the former has no presentiment of his end and he seems to believe that all about him can last only as long as himself. Now, the Middle Ages are a singular compound of youth and decrepitude.

The old society still keeps a breath of life while the new is in its infancy. The edifices built in the Middle Ages experience these two contrary situations. In the midst of nations permeated by a youthful and strong vitality like the Normans and the Burgundians, for instance, the constructions are built much more solidly, and assume a stronger individuality than among the dwellers on the banks of the Seine, the Marne and the Loire, whose customs during the twelfth century still bear the trace of Roman traditions.

The Burgundian even has a considerable advantage over the Norman in that he is endowed with an active imagination and that his temperament is to a degree southern." E. E. Viollet-Le-Duc, *Construction-Matériaux*, from "Dictionnaire Raisonné de l'architecture française du XI au XVI siècle", tome 4.djvu/129, Paris: Édition Bance-Morel, 1854-1868, English version: *Materials* in "Rational Building", translated by G. M. Huss, NY: Mac Millan and CO., 1895, p. 167 (https://fr.wikisource.org/wiki/Page%3AViollet-le-Duc_-_Dictionnaire_raisonn%C3%A9_de_l%27architecture_fran%C3%A7aise_du_XI_au_XVIe_si%C3%A8cle%2C_1854-1868%2C_tome_4.djvu/129;

<https://archive.org/details/rationalbuilding00viol/page/166/mode/2up?q=norman>).

a negative connotation. The "material" was considered like a passive principle, without quality. Also, René Descartes and the mechanist philosophy had considered it like an inert extension.

Only with Positivism in the 19th century, which thought of reality as an objective fact, observed and manipulated by the subject, the material became the topic of concrete interventions and impulse for the elaboration of specific rules about its behaviour.



Pozzuoli (NA), Italy, Progetto di conservazione del Tempio Duomo Rione Terra, 2003-2014. By prof. Arch. M Dezzi Bardeschi.
http://www.marcodezzibardeschi.com/_Progetti/incorso/Tempio_Duomo.html

Consequently, the material indicates the physical content of an object, a work of art or a text. Therefore, materials like metal, colour and sound acquire their own concreteness.

The term material returns to matter, in fact, it is "from which something descends" or "of what it is done, or it is formed". "Hyle", that is the correspondent classical Greek term, means:

- 1 Forest
- 2 Timber
- 3 Building Material
- 4 Material

In addition, we should add the medieval meaning of material - as an argument or a document:

hyle historias = material for the history⁹².

At the origin of the science of restoration in the Western culture there still was a fundamental difference between material and shape, material and spirit.

⁹² *Nicephori Caesaris Bryennii commentarii de rebus Byzantinis*, ex typographia Bartholomaei Javarina, 1729 (Original edition XI-XII Cent.).

The birth of the aesthetics (XVIII century) tried to solve this distinction.

For Hegel's idealism, that has influenced a lot the Italian culture during the Nineteenth Century, the art is a concrete-sensible "it brings by consistency and visibility of the materials its peculiar condition and its *raison d'être*" and "the sculpture is the symbol of individuality that falls and penetrates in the inactive mass.

Methods of actions: how do we reach the conservation of materials and structures

It is necessary to repeat that the preservation project is based on:

- Geometrical survey
- Study of the history of the building
- Study of the construction methods
- Study of the materials employs
- Studies of the decay and of the damage of materials and structures
- Re-use project
- Sustainability of the project

Moreover, each survey must be combined with a detailed report describing how the survey was done.

Scale to draw the single building (monument or not):

At least 1:50 (with details if it is necessary). Sections (planimetry and elevation) must be kept in white. The representation of unknown elements (not surveyed) it's not admitted.

Survey of materials:

The materials can be indicated, usually on the fronts, by the survey "*dal vero*" (f.i. representation of wall system, grain of wood, colour of metal materials) by stencils that through colour and pattern are able to distinguish each material.

The representation and the layout must be accompanied by explicative written relation.

The decay survey:

The survey of the material's decay should correspond to the survey of the material

itself. In this case seems suitable to represent the decay by pattern of colours to better identify its extension. Moreover, within this procedure it is useful to estimate the cost of the project of conservation.

The structural survey must consider:

- Out of plumb
- Deformation and damage of structural elements (walls, ceilings, roofs, foundations)
- Cracks

All these data must be interconnected in order to understand and discover its causes.



Restoration Project by G. Valadier XIX Cent.; The Arch today.
<https://www.northernarchitecture.us/ancient-monuments/the-arch-of-titus.html>
<https://www.ebooking.com/en/news/the-arch-of-titus>

Usually, the survey of the materials and the survey of the decays are mapped on the drawings of the building. The maps must be reported in the project report and should be also indicated inside the boards.

The panels are the most practical way to plan the project of intervention concerning the material. In addition, this drawing helps to define the costs of the project.

In the following chapters will be summarised the methods and rules useful for the analyses of the more common materials used in ancient buildings, such as stones, bricks, and wooden materials for construction.

It would be a very general presentation in order to introduce the main questions related to the identification of the problems (decays, alterations, deformations, cracks, fractures), that can have a great influence on the conservation project,

because all the materials and all the elements, original or added along the time, are documents of each phase of the object's history.

It would be useful to mention the technical use of metal, concrete cement and reinforced concrete cement, materials employed in the beginning of the Twentieth Century⁹³.

What is Cultural Heritage, once again, is an important question connected with the possibility to recognise what is really significant for the history and the identity of a society and a Country. Of course, we have to think about the possibility to determine Cultural Heritage as an expression of identity (and not only as a driver to improve tourism!).

The following chapters do not pretend to be exhaustive, but they would attempt to give an opportunity to think about restoration as conservation, having the possibility to understand the nature of this procedure.



San Zeno complex, Verona, Italy. Picture by Marta Rota, 2017.



Convento do Carmo, Lisboa, Portugal. Picture by Marta Rota, 2015.

Materials and structures. Identification of decays, alteration, deformation and cracks.

- *Inorganic materials: stones, bricks and their composition (as plasters and masonry walls)*
- *Organic materials: wood(s)*

⁹³ *Approaches for the Conservation of Twentieth-Century Architectural Heritage*, Madrid Document 2011, Madrid, June 2011.

Inorganic Materials: regulation of the analysis and of the survey of the materials of the ancient buildings

NOR.MA.L, or as it is nowadays, UNI-EN NOR.MA.L. (the Italian rules for the regulation of investigations on stone materials, on their forms of degradation, alteration and destination and on intervention methods), compiled according to "Capitolato Speciale d'Appalto del Ministero dei Beni Culturali/Procurement Criteria by Minister of Cultural Heritage", foreseen:

1. Knowledge of natural stone materials
2. Knowledge of artificial stone materials
3. Study of environmental parameters
4. Selection of conservative methodology
5. Elements known about the object

Other rules about the manufacturing and production:

- Laws and decrees
- UNI's Rules (Ente Nazionale Italiano di Unificazione/Italian National Authority for Standardization)
- UNI-EN RILEM

The NOR.MA.L Commission was founded in 1977 by CNR (National Council of Research) and by Istituto Centrale del Restauro, nowadays Istituto Superiore per la Conservazione e il Restauro (National Higher Institution for the Conservation and Restoration) with the aim to define analysis procedure (causes of alteration and state of conservation, monitoring of conservative treatments) for stone materials (natural and artificial) with historical and artistic value.

The activities are managed by these work groups:

- NOR.MA.L B: biological methodologies;
- NOR.MA.L C: chemical methodologies;
- NOR.MA.L F: physical-mechanical methodologies;
- NOR.MA.L M: studying of ancient mortars for restoration;
- NOR.MA.L P: mineralogical- petrographical methodologies;
- NOR.MA.L S: structures;
- NOR.MA.L U: humidity into the masonries.

The documents must be sent to all the Soprintendenze Statali, authorities delegated to preserve the Cultural Heritage, Institutes of research in Italy and abroad.

NOR.MA.L 1/88 - NOWADAYS UNI 11182:2006, 13/04/2006⁹⁴: “Beni culturali - Materiali lapidei naturali ed artificiali - Descrizione della forma di alterazione - Termini e definizioni”⁹⁵:

- LESSICO (Cultural heritage - natural and artificial stone materials - description of the causes of decay - terms about macroscopic alterations: glossary).
- ICCROM⁹⁶
- ALTERATION ALTERAZIONE: «Modification of material that does not necessary imply a worsening of its characteristics from the point of view of conservation». For instance, a reversible coating applied on a stone may be considered as an alteration.
- DEGRADATION DEGRADAZIONE: «Decline in condition, quality, or functional capacity». The single terms are defined only on the base of what is visible, the causes of alteration and degradation haven't been taken in consideration.⁹⁷



From left to right: Erosion; Decoloration; Black crust. Pictures by Nora Lombardini

1. ANALYSES OF NATURAL STONE MATERIAL (NORMAL)

- description of macroscopic changes
- sampling and collection of samples
- chemical-mineralogical-petrographic-morphological characterization of natural stone materials
- physical characterization of stone materials and natural biological degradation agents

⁹⁴ <https://store.uni.com/uni-11182-2006>.

⁹⁵ *Cultural heritage - Natural and artificial stone materials - Description of the form of alteration - Terms and definitions* (translated by the author).

⁹⁶ <http://iscs.icomos.org/glossary.html>; UNI 11182:2006, *Beni culturali Materiali lapidei naturali ed artificiali. Descrizione della forma di alterazione - Termini e definizioni* (replacing the rule NOR.MA.L 1/88).

⁹⁷ Of course, there are different decays connected with the cases of study (landscape or building), different structures (foundations, vertical wall, horizontal structures as beams, vaults, truss) and the different materials (wood, masonry, bricks, mortar, concrete - with and without cement - stone, steel, iron, reinforced concrete cement, cast-iron, etc.).

2. SURVEY OF ARTIFICIAL STONE MATERIAL (NORMAL)

- chemical-mineralogical-petrographic-morphological description of artificial stone materials
- characterization of mortars
- physical characterization of artificial stone materials

The procedure for the intervention is:

Technical-scientific investigations preceding the practice of cleaning and treatments:

- sampling of the material
- mineralogical-petrographic analysis
- chemical analyses
- biological analyses

Sequence of the interventions on the surface:

- cleaning
- pre-consolidation
- consolidation (essential only when the stone shows serious deterioration and alteration phenomena)
- protection

Cleaning is always necessary: cleaning is a delicate and irreversible operation.

Cleaning procedure of surfaces

In order to better understand a procedure of conservation, it is suggested to make an articulated description of the cleaning of the surface of the stone structures (surface of masonry walls and plasters without paintings).

General cleaning criteria

- it must be controllable (in every phase), gradual and selective.
- it must be able to eliminate what we want by distinguishing between the real types of dirt.
- materials that are harmful for the conservation of the stone (e.g. soluble salts) must not be produced.
- it must not create modifications, micro-cracks or strong abrasions on the cleaned surface, i.e. anything that can lead to an acceleration of

deterioration due to an increase in surface porosity.

The purpose of cleaning consists of the elimination of salts, dejection of droppings of animals, vegetation, insoluble, partially soluble and soluble salts deposited on the surface. Cleaning must also provide for the elimination of past treatments now inefficient. The cleaning should take into account the natural patina and original surface finish of the material.

Requirements for cleaning according to NOR.MA.L. recommendations:

- The treatment must always be gradual and controlled by the operator
- The treatment must be selective, that is, specific to the substance that must be eliminated
- It must not damage the stone support
- It must avoid the formation of cracks through which agents harmful for matter can pass.

Harmful products for the conservation of the artefact must not be left on the object.

Chemical cleaning criteria

- absorbent clay packs (sepiolite, attapulgite)
- suitable for the removal of oils, fats, salts and gypsum
- urea and glycerin-based biological dough wraps, carboxymethylcellulose-sodium bicarbonate-EDTA (ethylenediaminetetraacetic) based doughs

Precautions:

Careful washing of the object before the intervention.

It is forbidden to use:

- sodium and ammonium bicarbonate on limestone and porous marble.
- alkali (caustic soda and ammonia) for siliceous stones.

it is allowed to use:

- phosphoric, hydrofluoric acid, phosphates or citrates to remove traces of rust.
- solutions of ammonium carbonate or sulfamine acid (both in aqueous mixture at 15-20%) against traces of copper.
- white spirit, aromatic solvents, to eliminate bituminous stains.
- basic solvents for oils, chlorinated solvents for waxes, aliphatic solvents for

writings and varnishes.

- ion exchange resins to dissolve the calcium carbonate of the black crusts, which can then be removed by washing and brushing.

Mechanical cleaning criteria

- Precision micro-blasting using precision aero abrasive

The device uses compressed, dehydrated, low atmosphere air (0.5-1.5 atm) from nozzles of suitable size of the device, a jet of aluminum oxide (AL₂O₃) or a jet of very small glass spheres with a diameter of 0.004 mm is emitted.

The method allows to carry out a more or less deep cleaning, but always and in any case removes the natural protective film of the material.

Physical cleaning criteria

- Pulsed Laser

The laser is equipped with a ray that has the properties of vaporising the dark parts, through highly energetic light radiations.

The rapidity of the action prevents the clear underlying surface from being damaged.

These radiations are absorbed by the black ribs which are brought, in a very short time, to a very high temperature and immediately vaporized.

When, on the other hand, the radiations reach the underlying marble or light stone, they are reflected, even after repeated impulses on the same area, and not going to affect both the composition and the consistency in any way.

Advantages of this method:

- very high achievable selectivity
- greater cleaning safety than mechanical (abrasive) or chemical systems.
- it can also be used in the presence of degraded material: swelling, flaking, exfoliation and terminal areas.
- very useful for processed materials, in the presence of holes, folds, cracks, for materials with rough surfaces.

**Cleaning-consolidation-protection of surface of inorganic materials
(stones, bricks, plasters)**

The phases of the intervention can be so summarized:

– **Diagnosis**

Study of the artifact: of its history, of the characteristics of the materials, of their use in the building, of the degradation and its causes.

– **Pre-consolidation**

Operation that is carried out before proceeding with real cleaning. It is necessary if the material is free of cohesion and particularly degraded so that it doesn't allow any tampering, with the risk of breakage during the cleaning phase.

– **Cleaning**

Necessary action for the removal of alterations and generic surface deposits carried out with chemical-physical and mechanical treatments.

– **Consolidation**

Treatment of degraded matter with specific chemical products which, by penetrating in depth, lead to a restoration of the physical-mechanical characteristics of the stone.

– **Surface protection**

Operation carried out for the most with chemical substances, to limit the harmful effects of the water, the atmospheric agents and the pollutants on the surface of the product.

– **Periodic maintenance**

Periodic check ups on the object in order to guarantee a timely intervention before the triggering of degradation phenomena or the transformation of alterations in forms of degradation, that is, in irreversible actions.

In order to guarantee the effective maintenance, it is necessary to establish, during the design phase, times and conditions of duration of the intervention in progress.

**WOOD AS BUILDING MATERIAL: diagnosis for the survey of decays,
alterations and structural damages**

Stages of the structural study:

- Survey: structural type, geometry, dimensions, loads, etc. (detector technician)

- Evaluation of the factors that determine the strength of the material and structural elements (from the technological point of view):
- Characteristics of the healthy timber
- Any alterations of different origins
- Technological aspects of materials and connections
- "Resistant quality class " of healthy timber
- Resistance kernel of the cross section
- Ultimate Limit State and Serviceability Limit State
- Assumptions about the functioning of the structure
- Study and verification of structural models

Inspection techniques:

Direct visual inspection, with simple tools (hammer, chisel, screwdriver, probe, gimlet, auger, etc.) and with electric humidity meter.

Local measures:

- Identification of some characteristics of healthy wood (e.g. density or hardness) to extrapolate its resistance
- Identification of the resistance kernel of the cross section and its distribution along the structural element (in case of attacks or degradation).

Global measures:

(ultrasound, variously analysed vibrations, etc.).

Direct and synthetic evaluation of the stiffness and bearing capacity of the element (or structure).

Direct study is essential, even with simple methods:

- Advanced local methods (ultrasound, RX, etc.): useful, but never a substitute for direct examination.
- Advanced global methods (evidence of load tests dynamics of various types, ultrasound etc.) Are useful for assessing:
- The functioning of the constraints and the structure.
- The global behaviour of the elements.

Integrated inspection: detector-technologist-structural engineer, to:

- Evaluate original state, state of conservation, resistance kernel of the cross section.

- Identify the origins, types, characteristics of the failures.
- Facilitate the formulation of a model.

Study of the original state of the wood:

- Identification of wood types (visual examination, sampling, microscopic examination)
- Assessment of natural durability and the possibility of treatments
- Presence of original imperfections of wood, mainly including:
 - Shrinkage cracks (physiological which, generally "ugly" but not harmful, and it would be harmful to try to "fill them" with rigid materials)
 - Other cracks (f.i. the very dangerous shake).
 - Knots and sloping grains.

Study of the decays:

- Identification, detection, quantification of any:
 - Biological attacks (fungi, insects, etc.)
 - Damage from physical-mechanical agents (fire, loads, "bad" restorations, etc.)
 - Deformations, etc.

Evaluation of the bearing capacity of structures:

Evaluation of the characteristics of the wood and its possible degradation.

The identification of the timber characteristics that determine its resistance (species; density; humidity; defects such as knots, sloping grains, chives, etc.) and any alterations due to biological attacks (fungi, insects, etc.) or not biological (fire, excess load, etc.) can occur through very different methods (or combinations of methods), of which we briefly recall the main ones here:

- Visual, with the aid of simple tools (hammer, chisel, screwdriver, probe, gimlet, auger, etc.) and an electric moisture meter: in principle, the in-depth direct visual examination by an expert is to be considered indispensable, unless the actual necessity is assessed case by case in relation to the state and importance of the elements considered.
- Mechanical (resistance to dynamic penetration, f.i. with tools such as the Pilodyn, hardness, f.i. with the Janka method using a ball penetrometer, resistance to drilling).
- Ultrasonic, with global measurements or with local measurements.

- Vibrational, with local measures or with global measures.

Structural interventions/Consolidations of structures

The structural consolidation is based on:

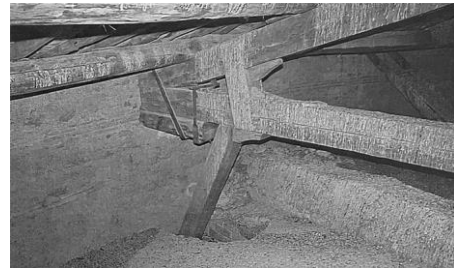
- Detection of the structures
- Detection of the construction systems
- Evaluation of the load bearing of structures
- Identification of the different typologies of external loads and, eventually, seismic stresses
- Design of the structural reinforcement.

As Fielden states, “*the calculation of stresses in complex indeterminate structures is an extremely difficult task*”.

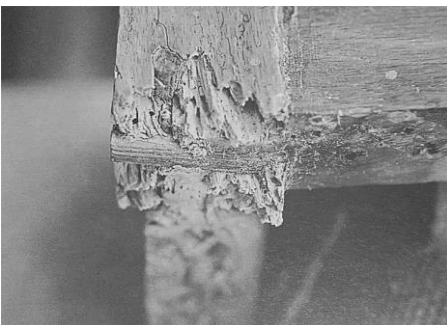
Of course, because we are working with unstandardized materials and construction systems (unlike ones frequently used in modern structures), the described analysis and the knowledge are fundamental.



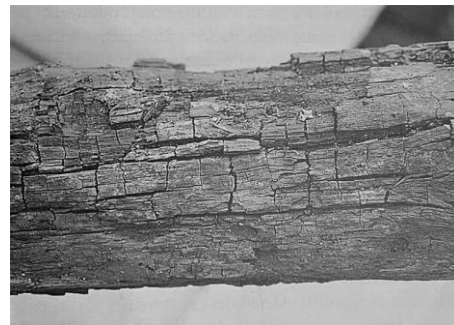
Wooden truss. A cura di F. Giovanetti, *Manuale del Recupero del Comune di Roma*, 2000.



Truss detail. A cura di F. Giovanetti, *Manuale del Recupero del Comune di Roma*, 2000.



Biological attack. A cura di F. Giovanetti, *Manuale del Recupero del Comune di Roma*, 2000.



Brown caries. A cura di F. Giovanetti, *Manuale del Recupero del Comune di Roma*, 2000.

The structures considered are: foundation, masonry walls, vertical element in reinforced concrete cement, beams, arches, vaults, domes, trusses.

The materials of structures are: masonry (baked and row bricks, stones, joints mortar, wood, iron, steel, metals in general, reinforced concrete cement, cement).

Diagnosis of the state of conservation of the structures

Diagnosis means that we must check the physical and mechanical parameters of the materials and structures.

The check on their state of conservation must be done before, during and after the conservation activities.

One of the aims of the survey of the measures of the ancient building is to improve its knowledge in order of the state of conservation of the structures.

Therefore, it is necessary to survey:

- The out of plumb and the deformation of each element
- The dimension, the shape and the distribution of the cracks in each structural element
- The evolution of the displacements and the movement of the deformations along the time
- The dimension, the history and distribution of the cracks

All of this data needs to be evaluated together for when we need to define the structural system, we need to have:

- A deeply inspection of all the elements
- The detection of the several construction phases of the building, a good survey of the measures of the building itself.

The diagnosis techniques and instruments for analysis on stone and brick structures

- **Sonic termography**

Provides the detailed field of the speeds of the sonic waves on one or more sections of the structure. Therefore, it allows to detect the inhomogeneity of the material, by measuring the variations in the speed of the sound waves.

- **Release of acoustic emissions**

It consists of recording the sonic impulses generated in the materials when billing phenomena appear.

- **Measures for transparency**

They consist in the determination of the speed springs of the longitudinal elastic waves between two accessible surfaces of the structure under investigation.

- **Radar surveys**

Study of the propagation of high frequency electromagnetic waves in the wall section. The technique is the reflection one. this survey allows to highlight the presence of zones with high humidity, cavities, metallic elements and transition areas between different materials.

- **Termographic investigations**

They are based on the release of the different emissivity and thermal conductivity of the materials. this analysis allows to obtain information relating to the morphology of the structures hidden by the plaster and to detect constructive anomalies, such as cavity or otherwise.

- **Sclerometric investigations**

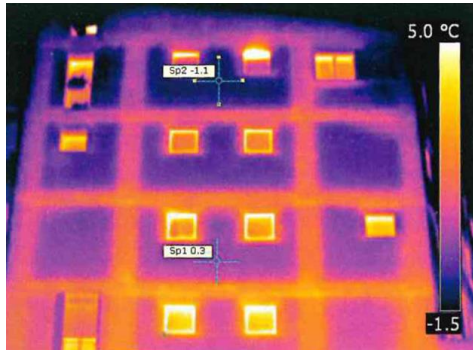
These surveys find application when it is necessary to have immediate information on the homogeneity characteristics of the wall structure. they provide the hardness index - determined by the bounce of a hinged mass left to fall on the wall surface - indicative not only of the surface degradation of the bricks or mortar, but also of the goodness of the bond between the two. They are useful for the mapping of the release areas between the materials.

- **Flat jacks**

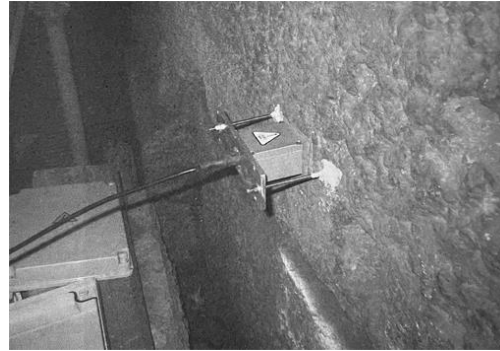
“Flat jack tests make it possible to assess the static pattern of masonry structures over large sample areas under conditions which are effectively undisturbed. The state of stress of the masonry is determined by making a flat horizontal cut, perpendicular to the surface of the masonry, into which a flat jack is inserted. The pressure of the jack is then increased until the initial degree of deformation is re-established”⁹⁸.

Also, structural evaluation can be used in order to assess the historic building.

⁹⁸ Ismes, *Restauro edilizio e monumentale: indagini e controlli/Building and Monument Restoration: survey and control* [<https://www.asim.it/ISMES/>].



Termographic investigation. E. Lucchi, *Diagnosi energetica strumentale degli edifici*, 2012.



Triaxial velocimeter. A cura di D. Fiorani, *Restauro e Tecnologie in architettura*, 2009.

Monitoring

In order to check the state of conservation of the materials and structures, it is necessary and to keep under control the building after the restoration.

It is necessary to plan the monitoring in order to survey what it is necessary to know.

Procedures and tools depend from its aim, from the typology of the structure, from the characteristics of the environment and from the severity of the situation.

The costs of this process are connected with: the length in terms of time of the process itself, the typologies of tools and the skills employed.

In fact, it is necessary to plan its duration and the timetable of the survey of the data.

It is necessary to distinguish the structural and non-structural monitoring.

The monitoring can use the following methods and tool of control and surveying:

- Observation recorded by pictures and general description.
- Specific devices useful to detect the damages and the problems in general.

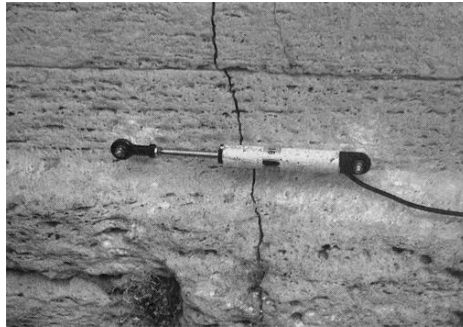
For structural survey, it is possible to use mechanical instruments and electronic ones.

Mechanical instruments are: steel ruler, magnifier graticule, plastic tell-tale, glass tell-tale, brass screws and calliper. An example of an electronic instrument is an displacement transducer.

Those are the basic instruments that can show the principle of the survey.

Useful for the survey of displacement of structures are the topographic, photogrammetric and remote sensing techniques.

Monitoring system is part of the preventive conservation, that aims to make a systematic and integrated survey of the state of conservation of an object, in order to manage and prevent the risks ⁹⁹.



Displacement transducer, A cura di D. Fiorani, *Restauro e tecnologie in architettura*, 2009.

Preservation and conservation nowadays

Nowadays it is compulsory to consider the conservation project with a sustainable approach that now must be concise with the “*Agenda 2030*”¹⁰⁰.

That means that it is necessary to interlace the conservation and the restoration with a sustainable management of the environment.

One of the research projects that are developed now, is the problem of the improvement the energy efficiency¹⁰¹ in the ancient and existing buildings, especially considering that the relationship between the existing building and the new ones (in 2015 the intervention on existing building was more than the 50% when, in 2000 the intervention was the 43% of the construction labour market).

Research of the academies and of the companies is increasing a lot and, consequently, the topic is entering inside the training of the students.

⁹⁹ ICCROM, *A Guide to Risk Management of Cultural Heritage*, 2016; ICCROM, Government of Canada, *The ABC Method: a risk management approach to the preservation of cultural heritage*, 2016. (<https://www.icrom.org/section/preventive-conservation/risk-management-preventive-conservation>).

¹⁰⁰ *Transforming our world: the 2030 Agenda for Sustainable Development, Resolution adopted by the General Assembly on 25 September 2015* (<https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf?OpenElement>).

¹⁰¹ A. Buda, V. Pracchi, R. Sannasardo, *Built Cultural Heritage and Energy Efficiency. the Sicily Case: Pros and Cons of an Innovative Experience*, vol. 296, fasc. 1, pp. 1-9.

The research is devoted to identifying materials, strategies and solutions useful to respect the material as a document, the authenticity of the building, reducing demolitions in the respect of a sustainable approach.

Another topic that must be improved with a new perspective is the relationship between the conservation of Cultural Heritage and the wellbeing and the urban health.

Starting from the urban planning at the end of the XIX Cent. and the work by Camillo Sitte and Gustavo Giovannoni, it is necessary to consider the development of the urban settlements, the urban health and the Cultural Heritage and the interaction among them.

This means that all the activities developed at urban level must respect the urban health and the wellbeing¹⁰².

All the action must focus on the respect of all the elements and on their knowledge, in order to define the right strategies of intervention.

The involvement of the local communities is fundamental. The improvement of the Urban health, of the wellbeing and of the Cultural Heritage must be under a bottom-up process.

Conclusions

The chapter starts asking what and why the people wish to protect and are inviting to protect. The identification of what is important. Nowadays it is agreed that we have to protect Cultural Heritage.

The main questions are:

1. **WHAT IS CULTURAL HERITAGE?**
2. **WHY IS IT NECESSARY TO PROTECT CULTURAL HERITAGE?**
3. **WHEN DID WE START TO PROTECT CULTURAL HERITAGE?**
4. **WHERE CAN CULTURAL HERITAGE PROTECTION STRATEGIES BE APPLIED?**
5. **HOW CAN CULTURAL HERITAGE BE PROTECTED?**

These 5 questions are related to the management of CH and the possibility to arrange knowledge and experiences useful to transfer the goods to the future generation and

¹⁰² *Heritage and Wellbeing: What Constitutes a Good Life?*, ICCROM, 2019. (<https://www.iccrom.org/projects/heritage-and-wellbeing-what-constitutes-good-life>); *Cultural Heritage and Urban Health. New Perspective for Cultural Heritage Conservation and Sustainable Urban Development in Tbilisi. An Open Dialogue between Georgia and Italy*, edited by N. Lombardini, Roma, 2020.

useful to remind about the responsibility of all the actors involved in the protection process.

*“How will historic preservation higher education better prepare professionals for the future of preservation practice”?*¹⁰³

An in-depth and equal training in the field is fundamental in order to guarantee a good collaboration among supervisors, professionals and enterprises.

The aim of the university is to give the opportunity to stimulate curiosity and to advance the theory able to guide the project of conservation.

At the same time, it is necessary to have a good critical approach to the conservation project and the ability to combine all the disciplines and the skills involved in the process.

The project of conservation is an architectural project, where all the critical approaches must be included for ensuring a conscious and critical work.

The project of conservation, starting from a deep knowledge of the good, must be based on the case itself. Each monument must be considered as a single unique case to be restored and conserved.

Cultural diversity is also expressed in the various policies and methodologies adopted to safeguard the heritage, starting from how and why it is recognized as CH and the methods and procedures with which it is possible to preserve the building and its environment. However, it is necessary to start from the definition of conservation.

For centuries, each State had guaranteed their culture and their CH.

Cultural Heritage represents the diversity that intercultural dialogue aspires to respect. Knowing the CH means knowing the historical and aesthetic value of the heritage. This evaluation begins with the identification of the value attributed by the natives to their heritage.

The different approach and consideration in the evaluation and conservation reflect the importance of the heritage and above all the historical value.

¹⁰³ C. Werner Ramirez, *Preparing Graduate Programs in Historic Preservation for Tùthe Future*, in *Creating Historic Preservation in the 21st Century*, ed. R. D. Wagner, T. de Teel Patterson, Cambridge Schola Publishing, 2018, pp. 42-49.

The conservation project is an interdisciplinary action the purpose of which is to proceed with the acquisition of information necessary to transmit the material integrity of built environment to the future generation.

The recognition of the authenticity of the object, understood as the unrepeatability of its material consistency, assumes that the project activity makes use of adequate tools and methods of research.

The articulation of knowledge, both preliminary related to the object, both those of intervention, which are aimed at real material conservation of the object and its functionality, assumes that the activity of the disciplines involved converges towards the end last of the conservation project. This recognition, therefore, allows the optimization of the cognitive process, and facilitates the achievement of the intended goal.

Assuming conservation as the purpose of the act of the restoration, as is known, does not deny the new additions, does not deny, that is, that dimension of the project anymore creative that does not relegate the architect to mere activity of the makeover.

Going beyond typological or stylistic analysis, which are not a disciplinary part of the conservation project, knowledge of the subject of the intervention, whether it is bound by the protection laws of Cultural Heritage, must be conducted through the conscious and critical use of the tools that contemporary culture makes available, even in the desired possibility of developing solutions specific and innovative operating systems for the asset cultural sector.

Historical analysis developed on documents and conducted on the building itself, geometric survey and representation, survey and examination of materials and structures, their decay and the most suitable techniques of intervention, analyses for providing the most suitable intended use, also in terms of technological adaptation, constitute the essential stages, from the methodological and interdisciplinary point of view, of conservation project. The survey of artefact is, therefore, one of the fundamental moments of the conservation project, because it offers some of the indispensable and foundational tools of the project itself.

The objective survey of the state of the monument, free from stylistic and typological, provides not only the representation of geometry, in formal terms and objective quantities, but also provides a necessary base to analyse and record the consistency of

the material, of the structures and their state of conservation for diagnostic purposes, besides being a useful tool for creating the historical summary of the construction phases of the monuments.



Castello Sforzesco, Milano.
Picture by Nora Lombardini,
2000.



Castelvecchio, Verona. Picture by Marta Rota, 2017.

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A CASE STUDY – *ITALIAN PROTECTION*

The Basilica of St. Vitale – VI Cent. - Ravenna

**Politecnico Di Milano
Developed by Nora Lombardini**

Description of the church

The church of San Vitale develops in two concentric octagonal prisms of which the central one, with a single volume, culminates in the drum-dome system, supported by eight rough-profile pillars, while the external one, more low and double volume, it is delimited in the two levels by systems of the vaults with bezels.

The internal octagon opens onto the external one through semi-circular exedra systems overlooked by the three-light windows with arches supported by marble columns.

The two octagons are connected to the level of the gallery by circular arches that are set both on the corner pillars of the external walls and on the internal pillars.

The exedras overlook the internal octagon through large round arches.

The major octagon is delimited towards the outside by a brick curtain wall. At the corners there are eight pillars with a rectangular section but with a different size and passing inside the temple, while stiffening pillars, also in brick, protrude at regular intervals on the outer curtain.

On the walls, between the pillars, the arched windows open on the two floors: those on the lower floor have a greater light.

The presbytery and apse are grafted on the east side of the temple .

The two rooms are respectively covered by a lowered cross vault with mosaic decoration and a semi- dome decorated with a mosaic.

On the wall of the apse area, semi-circular inward and polygonal outside, there are three large windows restored in the early 1900s.

On each of the two sides of the presbytery, on the right and left both on the ground floor and on the gallery floor, there are two pairs of three-light windows.

Also on the sides of the presbytery are the Pastophorias, also restored at the beginning of the century, each equipped with two semi-circular chapels, covered with masonry domes, flanked by two service cells covered with barrel vaults. The north cell is divided into two levels, the south cell in a single volume. On the opposite side of the presbytery there is the forceps narthex, on which the facade was composed during the

restoration by Renato Bartoccini in 1930. On the vestibules that result between the basilica and narthex there are two towers of stairs, of which the one in the south was raised and adapted to a bell tower in ancient times.

On the north side of the building, close to the corner pillars, there are two buttresses, built certainly after the erection of the temple.

On the drum that supports the dome there are eight large windows that illuminate the interior and, on the lantern, rests the wooden beams cover warped to create an umbrella structure. The church, as it appears today, is the result of very important restorations carried out between the Nineteenth and Twentieth centuries.

Looking carefully at the external wall surface, the renovations are clearly visible. From a calculation carried out, using the graphic drawings published by prof. Wilhelm Deichmann (but taken from the reliefs of Alessandro Azzaroni - preserved in the archives of the Superintendence/Soprintendenza of Ravenna - during the restorations carried out since the last years of the last century), it appears that about 40% of the total external surface of the church is restored and re-built, that means, the bricks and mortars of external layer of the wall were replaced.

Here are some of the most significant dimensions of the building, deduced from the surveys carried out by the writer in 1988-89.

The internal octagon delimited by the corners of the pillars has sides approximately 6.50 m in size. The diagonals measure approximately 17.30 m.

The external octagon is interrupted at the vertices by the angular rectangular pillars with sides of 0.96 m by approximately 0.80 m. The sides on the ground floor measure on average 12.90 m (the maximum value is 13.02 m and the minimum value is 12.83 m) excluding the sides close to the presbytery chapels. In these cases, in fact, the sides both on the ground floor and on the gallery floor have dimensions that are around 13.50 m.

The doors, rebuilt during the restorations (on a description of the church of the XVI Cent.), are approximately 3.30 m high and 2.30 m wide.

The internal pillars are approximately 5.7 m from the external pillars. The height of the ground floor is approximately 8.0 m and the height of the gallery floor is approximately 7.40 m.

The marble columns, with the capital, on the ground floor measure about 5.10 m and about 4.20 m on the upper floor.

The walls are 0.96 m thick in the narrower sections, 1.20 m in correspondence to the pilasters and about 3.00 m on the internal and external pillars.

The maximum altitude of the exedras is about 16.20 m and the windows of the drum rest at about 16.93 m.

The pillars are about 14.0 m high above the ground. The summit of the dome is located approximately 28.80 m above the ground.

It is a fairly regular building, despite the fact that the structures have undergone significant tampering over the course of about 1450 years. In addition, it is necessary to consider, for a diagnosis of the state of conservation of the building, some factors such as the lowering of the soil due both to the natural consolidation process under the load induced by the basilica and caused by subsidence.

The planimetric shape was detected inside the church. In particular, along the east-west direction, we have a drop of about 17.0 cm, surveyed at the mullioned window of access to the southern vestibule.

It is important to note that the imposition of the annular vaults at the two levels of the ambulatory appears rather irregular and very often the corbels, on the perimeter walls, engage in false with respect to the openings on the external octagon, up to occluding them, in some cases, as happens for the windows on the ground floor adjacent to the southern pillar.

The environment surrounding the church of San Vitale

The problems relating to the temple of San Vitale and determined by the interaction between this architectural organism and the surrounding natural and artificial environment are already visible starting from a cursory tour of the monument:

- The basilica of San Vitale is part of a group of monuments of historical and archaeological importance
- The relationship in which the building stands with the geo-morphology of the territory is immediately evident, which denounces an anomalous and characteristic reality of the Ravenna soil.

The basilica of San Vitale is located in the north-west sector of the historic centre of Ravenna, immediately inside the ancient city walls. The church, an important historical-artistic testimony and for this reason one of the main tourist attractions of the city, is surrounded by other famous and significant monumental buildings.

In fact, San Vitale is part of a very large, monumental complex which covers an area of, approximately, 19,200 sq. m, and which includes:

- The Mausoleum of Galla Placidia (5th century)
- The Sacello di San Vitale (5th century)
- The former monastery (around the 10th century), now housing the National Museum and to the Environmental and Architectural Heritage for the provinces of Ravenna-Ferrara-Forlì/Cesena-Rimini.

Immediately outside the fence that encloses the aforementioned complex, we find:

- The church of Santa Croce (5th century) and the relative excavations
- The church of Santa Maria Maggiore (6th century, remodelled in the 17th century)
- The Houses of San Vitale (XVIII century).

Far from the main road axes and major motor traffic, the entire monumental complex is crossed by two pedestrian streets, via San Vitale and via Galla Placidia, which delimit a consolidated urban structure dating back to the Seventeenth century. The surrounding building fabric preserves the warping and the typological character that sees the alternation of small buildings and palaces of the XV-XVII Cent. and whose homogeneity was not altered by the war events, since the area, far from the port and the railway line, did not suffer serious damage due to the bombing.

The area, bound in accordance with law 42/2004 (Codice dei Beni Culturali) and protected by the town planning tools in force, is included in a planning program that aims to qualitatively improve its tourist vocation.

Tourism is undoubtedly the most important order of users of the basilica of San Vitale, which hosts an important organ concert program during the summer. The masses are officiated occasionally, and on particular occasions, whereby the interior appears almost devoid of sacred furnishings. The custody, insured by a company employed by the city Curia, makes the church accessible to the public daily, in the pre-established opening hours.

The influx of tourists causes wear and tear on the most vulnerable decorative parts of the building, such as the opus sectile mosaic floor and the marble facing of the pillars, which are frequently maintained.

On the church of San Vitale, as well as on the whole group of historic buildings that surround it, there are no polluting agents nowadays. Until 20 years ago several chemical industries were active around Ravenna.

Perhaps it is useful to remember what was.

On the other hand, we cannot speak of localized polluting sources, nor of industrial origin and in any case linked to the work sector and not even due to car traffic. The data updated to 1981 show the following classification of the chemicals that make up air pollution:

- Sulphur oxides (SO₂), 12.5 T / h, products by combustion of materials that contain sulphur. Such significant quantities of sulfur compounds released into the atmosphere have a negative effect on the materials with which they come into contact, in particular:
 - accelerate the metal corrosion process
 - particularly sensitize marble, limestone, building mortars and slate on the roof, so that the carbonates contained in them are transformed into water-soluble sulphates and subject to dispersion due to the rain.
 - Calcium sulphate, more voluminous than carbonate, creates visible alterations on masonry structures.
- Nitrogen oxides, (NO_x), 1,1 T / h, "are compounds that are formed in the chemical processes of nitriding and in the combustion processes at high temperature", in particular the main sources of this polluting agent are the plants of nitric acid production, used in the making of fertilizers and the combustion processes generated by motorized vehicles.
- The effects of this pollutant are particularly visible on materials such as textile fibers, brass alloys, copper gutters, etc.
- -Hydrocarbons and volatile organic substances, 7900 T / year. Composed mainly of carbon and hydrogen with various physical characteristics, they are released into the atmosphere by industrial processes such as oil, petrochemical, and those of synthetic organic chemistry, as well as other non-productive human activities and natural causes.

These substances are involved in the process of formation of the photochemical smog, which in turn has a significant aggressiveness towards materials made up of natural and synthetic textile fibers, organic polymers.

The global emission of these pollutants, produced mostly by port industries such as ENEL, SAROM, ANIC CTE, CEMENTIFICIO ANIC, CEMENTI RAVENNA, FERTILIZERS ANIC, is still particularly significant, and "for certain maybe even worrying".

Even more worrying, however, is the problem of lowering the soil linked to subsidence.

To gain access to the interior of the basilica, it is necessary to descend a few steps which cover a variation in height of about 1.20 m between the threshold (taken in the following treatment as 0.00) and the floor.

At the same time as you enter, you feel both physically and in your nose the presence of a strong humidity which can be immediately classified as rising damp.

The sacellum of San Vitale, between the two interna pillars on the west side, at an altitude of -90 m with respect to the height of the church floor, is constantly immersed in water, as well as the narthex surface is often covered with a veil of water. This change in altitude is mainly linked to a phenomenon that is particularly important for the geography of the Ravenna area: subsidence.

"A natural subsidence that can be estimated in the order of 0.2-0.3 cm / year and a simultaneous rise in the average sea level of about 0.10-0.15 cm / year, was followed by a decrease of the soil due to anthropogenic factors, among which the extraction of fresh water from the subsoil and the cultivation of natural gas deposits prevail".

The lowering of the soil and the sedimentation of the historical floods after the buildings of the complex are the causes of the changes in altitude between the countryside and the floor of historic buildings.

This state of affairs is the level of the water table that can reach - 1.93 m. approximately (0.00 share of the eighteenth-century entrance to the church area), they force constant control by means of continuously running draining pumps.

As for the church of San Vitale, the drainage system was designed by eng. Pedretti in 1917 and built between 1918 and 1932. "The waters rising from under the ambulatory and the central octagon are conveyed by a series of small pipes with masonry walls

and concrete vaults towards a channel placed outside the perimeter wall of San Vitale, from here starts a channel which takes all the water collected to a cistern about forty meters away, where there are two pumps that raise the water and send it to the urban sewer system. The free surface of the water in the drainage pipes is placed at an altitude of + 0.1 m.s.m."

These drainage systems developed for the monumental area examined, if they serve the purpose of keeping the floors of the monuments dry on the ground, have given rise to some limited phenomenon of subsidence in the immediate surrounding area.

Despite the precautions, significant flooding episodes have occurred in recent years, among the last in the summer of 1990

From the survey conducted on the monumental area of San Vitale, Galla Placidia, Santa Croce and the former Benedictine monastery in relation to the damage caused by the subsidence process, with reference to the law 845/1980, a precise description of the stratigraphy of the soil emerged below the church of San Vitale.



External view of Basilica di San Vitale, Ravenna, Italy. Source: <https://www.turismo.ra.it/cultura-e-storia/edifici-religiosi/basilica-san-vitale/>



Aerial view of the monumental area of Basilica di San Vitale, Ravenna, Italy. (photo Biserni, neg. n. 148606), from the PhD Thesis by Nora Lombardini.

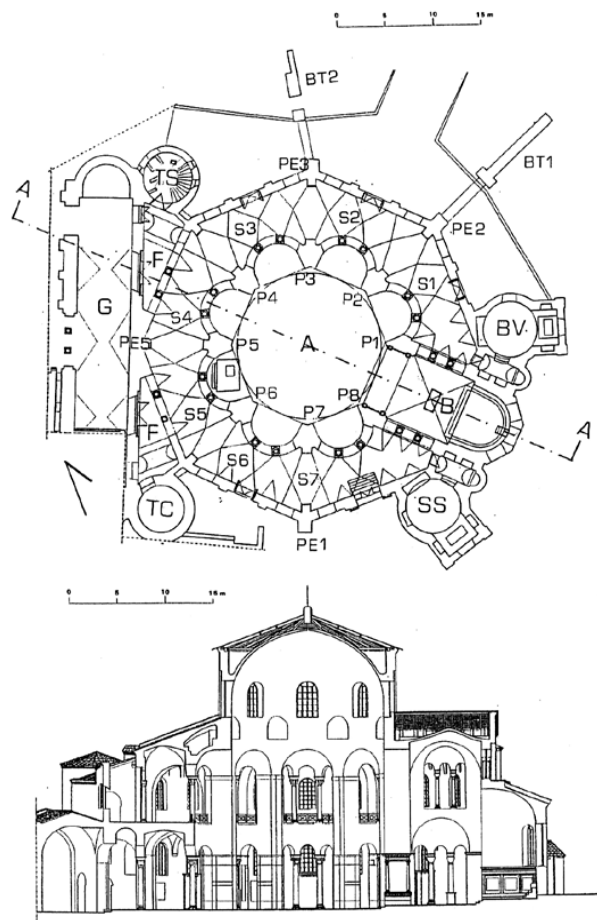
Other information about this case of study

The Basilica is part of a huge complex where there are different interests and owners:

Basilica of St. Vitale, Mausoleum of Galla Placidia, the Church of Santa Maria Maggiore and the dismissed church of Santa Croce with the archaeological remains are of Curia.

The ex-Monastery with National Museum, Soprintendenza's Offices, School of Mosaic Restoration, National Archive of Ravenna are of the Italian State.

It is necessary to pay a ticket to enter inside the Basilica. The ticket is valid also for the Mausoleum of Galla Placidia. The church of Santa Maria Maggiore is free for the Catholic cult and the ex Church of Santa Croce is closed. The fee of the ticket is for Curia. A different ticket is foreseen for the National Museum.



Plan of Basilica di San Vitale, Ravenna, Italy. A: inner octagon; B: chancel and apse; C: apsidal or pastophoria chapels and cells; D: stair tower; E: bell tower; F: vestibules; G: narthex. Below: Section east-west of Basilica di San Vitale. Drawing by Nora Lombardini, PhD thesis.

Medieval Period

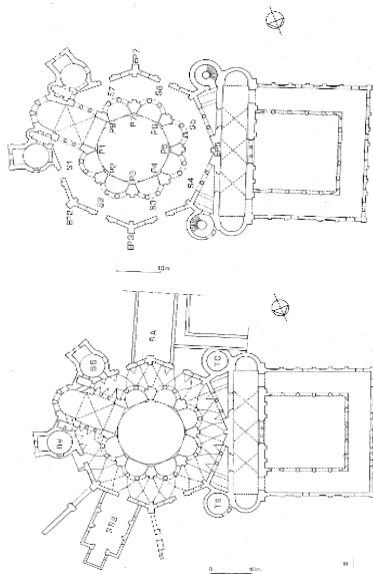
The conservation project is based on knowledge of the building.

In order to think about a conservation project on the basilica it is necessary to have an idea of its history.

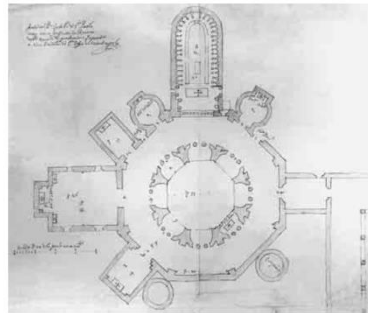
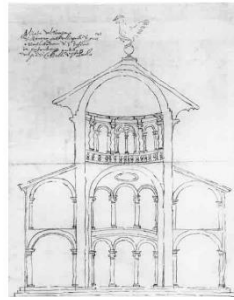
- VI Cent.: Foundation of the Basilica of san Vitale by Justinian I, during the so called Byzantine Empire. The Basilica was built together with Hagia Sophia and Saints Sergius and Bacchus in Constantinople (Istanbul). And it was conceived according the Orthodox religion of the Emperor.
- 999 a.C.: Starting from this age, the basilica was managed by Benedictines. They built the monastery, with the first cloister, and started the transformation of the church according to a different liturgy and the “Rule of

Saint Benedict". The tower bell, the buttresses, and a big chapel among them were built.

The Benedictines managed the Basilica and the monastery until Treaty of Tolentino, in 1797, signed between the Papal States and France under Napoleon Bonaparte. At that time, in Italy, the Monasteries were closed, the properties of the monks privatised, and the goods, as ancient books and work of art were moved to France.



The church in the VI Cent. (according to the reconstruction by Deichmann) and in the XV Cent. Reconstruction and drawings by Nora Lombardini, PhD thesis).



Francesco Borromini (1599-1667). The Plan from Vienna, Albertina; the section, from Biblioteca Apostolica Vaticana. From Silvia Foschi, "Santa Sofia di Costantinopoli: immagini dall'Occidente", in *Annali di Architettura Rivista del Centro internazionale di Studi di Architettura Andrea Palladio di Vicenza*, 14, 2002.

Renaissance period

The Basilica was managed by Benedictines. The monastery was improved with a new cloister, the second one. New chapels around the external perimeter of the Basilica were built, also. A great influence on these transformations was due by the resolutions of the Council of Trent (1545.1563).

In the XV and in the first of the XVI cent. the Basilica was in the interest of architects as Giuliano da Sangallo, Francesco Borromini, Andrea Palladio and, perhaps, Pirro Ligorio.

During the venetian domination of Ravenna, several paleo-Christian churches were

modified. Because of the water arising from the soil due by the subsidence and the flow of the rivers that, at that time, were running in the centre of the city, the level of the floor and of the columns of the churches in Ravenna were raised. In St. Vitale it was possible only to raise the floor, not the columns: for this reason the basis of the columns remained hidden under the new pavement.

New painting was made on the surface of the drum and on the dome.

Enlightenment period until the Unification of Italy (1861)

During the XVIII Cent, the church was more or less everywhere “restored”. New painting, again, were made on the dome and on the drum. New decorations and new sculptures were added inside.

Around the monastery several buildings, as an important guesthouse, were built.

In the monastery there were a library, a pharmacy and a school of architecture. In 1797 the Benedictines were forced to leave the monastery which was transformed into a barracks: only one monk remained inside the church.

Before leaving the monastery, the monk Benedetto Fiandrini, also architect, made the list of the structures of the church and of the Monastery.

From the Unification of Italy (1861) to the WW2

During the Restoration of the ancient Government, in 1821, under the Pope Pio VII a chirograph was promoted by Cardinal Pacca in order to protect mobile and immobile goods of the Church.

At that time, even if the Byzantine style was not recognised as a well artistic expression, and the connection by train was not so comfortable, Ravenna with its paleo-Christian and Byzantine monuments was included in the Italian Tour.

Before and immediately after the Unification of Italy, several scholars went to Ravenna for describing the Byzantine art and the architecture (from France, England and Germany), meanwhile in the north of Europe the studies on the Romanic period

were flourishing.

The Chirografo established the Commissions of Fine Arts which, among their duties, also had that of presiding over the work of settling the monuments that were not in good condition.

The professors of the Academies of Fine Arts were also involved in these restoration works.

After the Unification of Italy, all the main monuments of the Country were subjected to works of restoration, without any well-defined criteria.

A great debate arose on the questions of the methodology of restoration, training on architecture and restoration and laws for the safeguarding of the monuments.

In 1897, the first Soprintendenza dei Monumenti (Superintendency of Monuments) was established in Ravenna. The Soprintendenze were definitely formed in 1907 in the different Italian areas. The function of the Soprintendenze was to control the restoration of the monument (architectural heritage) with the involvement of people specifically employed for having in care the monuments.

From 1897 to 1935, the philological restoration of San Vitale was developed under the direction of Corrado Ricci. The restoration was aimed to establish, again, the original shape of the Basilica, using a deep research on the historical documents of the church and trying to put in evidence a lot of the interventions, according to the lesson by Camillo Boito.

The St. Vitale that we can see nowadays is the result of this restorations.

After this period, nothing of significant happened: it could be interesting to mention the anti-aircraft protection put in place during the I and the WW2.

A major mosaic restoration was done, both filling in the gap and redoing and replacing restorations previously done. The elements, figures and decorations were replaced according to a strong historical and stylistic analysis, without putting in evidence the new addition, but pursuing a mimetic solution.

The mosaics in the apse and in the presbyterium were not destroyed and lost. Along the 1500 years life of the church, as it is evident, the mosaics, with different methods of intervention, were conserved.

In this considered period they were restored according to the philological and historical approach. Using the document of archives, the most ancient descriptions of the church, the comparison with other similar cases, the aim of the restoration was to rebuild the original shape of this work of art.

In the end, it is necessary to remember the important consolidation that was necessary in order to avoid the leaning or tipping of the main vertical external walls caused by the removing of all the chapels distributed along the perimeter and the reconstruction of the masonry sections of the walls themselves.

The buildings of the monastery, with the three cloisters, became part of the complex of the church.

Built in the XIV, XVI and XVIII Cent., the complex became a barrack immediately after the conquest by Napoleon at the end of the XVIII Cent.

It was necessary, in the unified Italy, to ensure the passage of the property of these goods from the Ministry of War (transformed after the IWW in the Ministry of Defence) to the Ministry of Public Education (the Ministry of Cultural Heritage was definitely established in Italy in 1975).



The chapels and the pharmacy built around St Vitale and their demolition during the philological and historical restoration by C. Ricci (pictures from the Archive of Soprintendenza at Ravenna). First and last pictures: views of the Basilica (pictures by Nora Lombardini).

From the WW2 up to now

After the WW2 several restorations on the presbyterium were made.

The cross vault of the presbytery was being restored: the wall structure of the vault was consolidated; the mosaics were restored; the structural elements of the roof were replaced, replacing the wooden elements with reinforced concrete ones.

The Soprintendente/Superintendent planned to hide the so called “baroque paintings” (painted at the end of the XVIII Cent.) from the niches, the drum and the dome.

After the beginning of the first northern niches near the presbytery, Cesare Brandi, one of the most important representatives of the Italian restoration theory (with Piero Sanpaolesi, Piero Gazzola, Alfredo Barbacci, and others) with an article on the very well-known newspaper “Corriere della Sera”, stopped the initiative of the overlapping all the paintings with neutral colours, criticizing the approach considered wrong from the scientific point of view (the mural paintings are not frescoes, but “simple” painting on the dried plaster) and from the theoretical point of view, because, even if the paintings are not, stylistically, in line with the late-roman, early Christian and Byzantine art of the church, are signs and documents of the history of the church and have a value by themselves.

The same reason was abducted before, at the end of the XIX Cent, when, during the widespread restoration of the church, the moral and practical responsible of the works, Corrado Ricci¹⁰⁴, decided to conserve them.

These examples are able to show the meaning of the monuments’ conservation in Italy: any decision is based on a deep knowledge of the good.

In the case of San Vitale, until 2003, the Italian government was responsible for maintenance and restoration, even though the property was owned by the Archiepiscopal Curia of Ravenna and Cervia (that is, in poor words, the Catholic Church in its administrative role)¹⁰⁵.

¹⁰⁴ In the 1897, anticipating of 10 years the widespread the same body in all the Italian territory, was established the special "Superintendence for the conservation and maintenance of the monuments of Ravenna". Nowadays the title of the body is: Soprintendenza Archeologia, Belle Arti e Paesaggio per le province di Ravenna, Forlì-Cesena e Rimini. (Superintendence Archaeology, Fine Arts, Landscape for the Provinces of Ravenna, Forlì-Cesena and Rimini).

¹⁰⁵ The diocesan curia or episcopal curia in the Catholic Church consists of the bodies and persons who help the Bishop in governing the whole diocese, above all in directing pastoral activity, in taking care of the administration of the diocese as well as in exercising judicial power. The curia is provided for and described by the. It is made up of bodies for pastoral activity, bodies for administrative activity and bodies for judicial activity. Code of *Canon Law* in canons 469-494.

Throughout the Sixties and Seventies of the Twentieth century the church was especially subjected to maintenance works.

In the 1980s, the first modern scientific research on the basilica began in support of monitoring useful for understanding the state of conservation of the building: a great deal of attention was paid to structural behaviour.

The result of these analyses were investigations of the structure movements and construction materials of the vertical walls and the dome. Very important researchers were planned and made starting from the end of the 1980s and in the first half of the nineties.

In 2000 a working group conducted the geometrical survey of all the marble wall revetment of the eight pillars supporting the complex system of the drum and the dome.

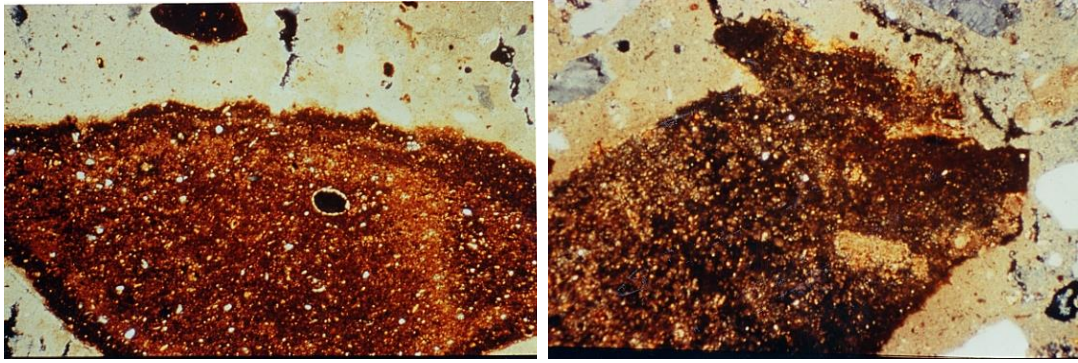
In the 2000s a very important work was carried out to consolidate the structures of the roof over the dome and to clean up the part surrounding the dome. In the same moment all the windows (frames and glasses) of the drum were restored.

Following this survey, the Curia has given the task of redefining the project for the restoration and consolidation of the same marbles.

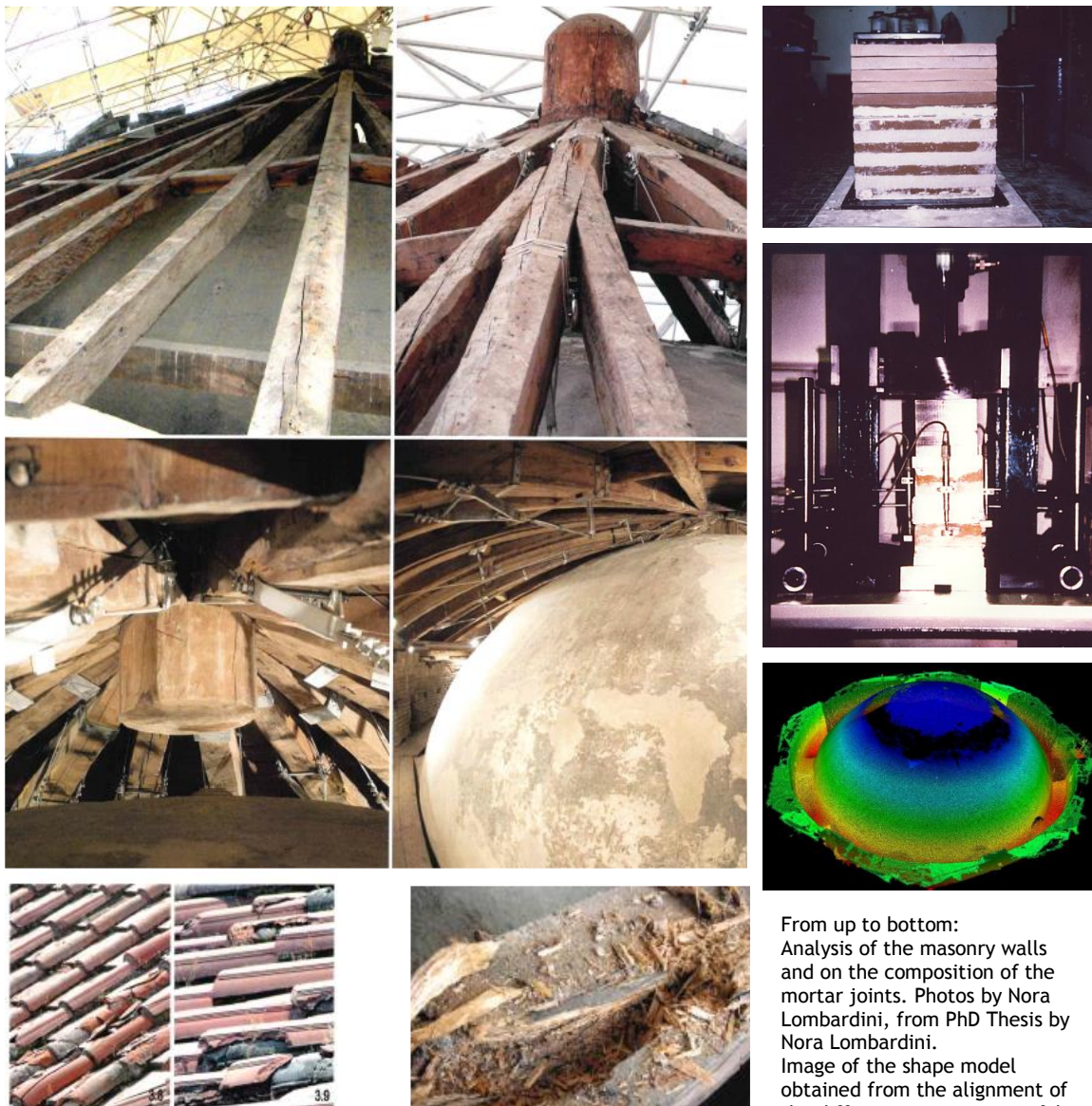
Meanwhile, a new arrangement of the external part of the church, ensuring the accessibility to each typology of users, was made.



From left to right: Detail of the wall face on the south-west side of the Basilica di San Vitale, Ravenna; external wall face of the Basilica di San Vitale where restoration works are visible. Photos by Nora Lombardini, from PhD Thesis by Nora Lombardini.



From left to right: SSM2 sample: attachment and corrosion phenomenon clearly visible in this brick fragment, NICOL X, 10X; SSM2 thin section: brick fragment with obvious reaction phenomena with the binder, NICOL X, 10X. Photos by Nora Lombardini, from PhD Thesis by Nora Lombardini.



From up to bottom:
 Analysis of the masonry walls and on the composition of the mortar joints. Photos by Nora Lombardini, from PhD Thesis by Nora Lombardini.
 Image of the shape model obtained from the alignment of the different range maps in false colors, from *The survey of the Dome of the Basilica of San Vitale in Ravenna*, by G. Tucci, N. Lombardini, V. Bonora, N. Guardini, P. Focaccia, 2012.

Restoration of the roof over the dome by arch. P. Focaccia.
 The state of structures and materials before and after the restoration. P. Focaccia, *San Vitale*, op. cit in references.

The basilica of San Vitale and its management today

Owner: the owner is the Curia Arcivescovile of Ravenna and Cervia/ Archiepiscopal Curia of Ravenna and Cervia under the administration of the **Opera Religion of the Diocese of Ravenna**. This body is the entity that manages the reception services of the tourists and the custody of the UNESCO monuments of the Archdiocese of Ravenna property of Ravenna-Cervia¹⁰⁶.

Tourism: The tourism on the late-roman, early Christian and byzantine buildings in Ravenna became significant starting from the end of XVIII and the first of the XIX Cent. The Basilica of St. Vitale is, in fact, one of the main monuments in Ravenna.

The management of tourism is in charge to Opera Religion of the Diocese of Ravenna.

It is possible to buy one ticket (as well as the single ones) for the network of monuments under the managements and museum of the Opera Religion. The monuments and the museum are: Basilica of St. Vitale, Mausoleo of Galla Placidia, Basilica of St. Apollinare Nuovo, Neonian Baptistery, Archiepiscopal Museum and St. Andrew's Chapel.

All the works foreseen on the Basilica are aimed to:

- The conservation and maintenance of the good from artistic and historical reasons
- The conservation of the religious meaning and role of the building
- The adaptation for tourists' needs.

The supervision of the work of the Basilica is:

- Under the control of Soprintendenza/Superintendency, for the problems connected with its artistic and historical values recognised by the Italian Government. The Soprintendenza/Superintendency carries out, in the area of competence, an articulated activity of protection, conservation and enhancement of goods of historical and artistic interest created for over 70 years belonging to public bodies or legally recognized institutions. The activity also extends to real estate belonging to private individuals, if declared of particularly important interest and notified in administrative form to the owners by Ministerial Decree issued pursuant to law 1 June 1939, n1089 (in force until 10.01.200) or through D.Lgs. 22 January 2004,

¹⁰⁶ <https://www.ravennamosaici.it/en/about-us/>

n.42 containing the *Code of Cultural Heritage and Landscape*

- Under the control of Italian Episcopal Conference, CEI which, in 1974, two years after the drafting and circulation of the 1972 Italian Restoration Charter, promulgates the Norms of the Italian episcopate for the protection and conservation of the historical-artistic heritage of the Church in Italy.

Funds

The running costs of the church are borne by the Archiepiscopal Curia and the funds come from:

- Private donations and donations in general
- Banking foundations
- The sale of entrance tickets
- 8x1000 of the income tax of private citizens.

St. Vitale in its main religious function

St. Vitale is a catholic church, even if it was built according to a different liturgy that is referring to the Christian orthodoxy of the reign of Justinian I. It is possible to refer to the St. Vitale parish/Parrocchia, even if only one Sunday Service is taken on. Weekday Masses are always celebrated in the Basilica of Santa Maria Maggiore, the other church close St. Vitale, built in the VI Cent and transformed in the Baroque period.

St. Vitale during Ravenna Festival

The Basilica, during Ravenna Festival, “created, in the name of great music and Dante”, in 1990.nSt. Vitale is one of the main places for concerts and recitals.

St. Vitale as Italian monument

St. Vitale before and after the unification of Italy was considered a monument.

Starting from the State of the Pope in 1802 and in 1821 St. Vitale was considered an important expression of art and architecture, even if not exactly in today sense.

Nowadays, according to the Code of 2004, a monument in Italy is:

1. In implementation of article 9 of the Constitution, the Republic shall protect and

enhance the cultural heritage in accordance with the powers set out in article 117 of the Constitution and according to the provisions of this Code.

2. The protection and enhancement of the cultural heritage shall concur to preserve the memory of the nation

[...]

The cultural heritage consists of cultural property and landscape assets.

2. Cultural property consists of immovable and movable things which, pursuant to articles 10 and 11, present artistic, historical, archaeological, ethnoanthropological, archival and bibliographical interest, and of any other thing identified by law or in accordance with the law as testifying to the values of civilisation.

3. Landscape assets consist of the buildings and areas indicated in article 134, which are the expression of historical, cultural, natural, morphological and aesthetic values of the land, and any other assets identified by law or in accordance with the law.

[...]

1. Protection consists in the exercise of the functions and in the regulation of the activities aimed at identifying, on the basis of adequate investigative procedures, the properties constituting the cultural heritage and at ensuring the protection and conservation of the aforesaid heritage for purposes of public enjoyment.

2. Protection functions are also carried out by means of provisions aimed at conforming or regulating rights and behaviour inherent to the cultural heritage.

[...]

Article 9

Cultural Property of Religious Interest

1. The Ministry and, where applicable, the Regions shall attend to the exigencies of cultural property of religious interest belonging to bodies and institutions of the Catholic Church and of other religious denominations, according to the needs of worship, and in agreement with the respective authorities.

St. Vitale in the Unesco list¹⁰⁷

From 1996, 8 monuments in Ravenna are in the Unesco's list. Five of them are of the Archiepiscopal Curia of Ravenna and Cervia: Basilica of St. Vitale, Mausoleo of Galla Placidia, Basilica of St. Apollinare Nuovo, Neonian Baptistery, Archiepiscopal Museum and St. Andrew's Chapel.

¹⁰⁷ <https://whc.unesco.org/en/list/788/documents/>.

The other 3 belongs to the Italian Government, under the control of Superintendency and the Municipality: Arian Baptistery, Theodorich's Mausoleum and Basilica of Sant'Apollinare in Classe.

The early Christian monuments are connected by the mosaics except the Mausoleum of Theodoric.

In general the goods registered in the List must be preserved with a management strategy that specifies conservation measures and control mechanisms, the effectiveness of which is monitored through three-year audit reports.

*These monuments "are unique testimonies of the artistic contacts and developments in a highly significant period of the cultural development in Europe. They constitute an epitome of religious and funerary art and architecture during the 5th and 6th centuries AD. The mosaics are among the best surviving examples of this form of art in Europe and have added significance due to the blending of western and eastern motifs and techniques". The criteria are: "Criterion (i): The Early Christian Monuments of Ravenna are of outstanding significance by virtue of the supreme artistry of the mosaic art they contain. Criterion (ii): The Early Christian Monuments of Ravenna are without parallel because of the crucial evidence they provide of artistic and religious relationships and contacts at an important period of European cultural history. The mosaics are among the best surviving examples of this form of art in Europe and have an increased significance due to the blending of western and eastern motifs and techniques Criterion (iii): The Early Christian Monuments of Ravenna show great artistic skill, including a wonderful blend of Greco-Roman tradition, Christian iconography and oriental and western styles typifying the culture of the later Roman Empire. Criterion (iv): The property constitutes an epitome of religious and funerary art and architecture during the 6th century AD."*¹⁰⁸

The projects for St. Vitale

As it was already said, the Opera Religion is in charge to develop the projects for the restoration For St. Vitale.

Opera Religion has not an internal operative and technical office.

¹⁰⁸ <https://whc.unesco.org/en/list/788/>

The projects for St. Vitale are practically developed by an external architect who can work in collaboration with different expertise, as structural, geotechnical engineers, surveyors, restorers of ancient artworks, historians of art, historians of the history of the building, etc.

In Italy, according to the art. 52 of the Royal Decree 23.10.1925 n. 2537 it is exclusively up to architects to sign projects relating to buildings subject to historic-artistic protection constraints and for their protected surroundings.

Any projects planned for an Italian monument or architectural heritage must go by the following procedure:

- Geometrical survey
- Study of the history of the building
- Study of the construction systems
- Study of the materials employed
- Studies of the decay and of the damage of materials and structures
- Enhancement of the building and its meaning with architectural works
- Sustainability of the project.

It is impossible to think about the re-use of the building, because St. Vitale is a church, even if, for its very important meaning as work of art and because it is an important attraction for tourist, it is not used, in general, to the traditional timetable of the services.

The restoration project cannot follow a guide-lines.

The project can follow the Italian restoration charter, 1972, that is a recommendation, especially for the Offices, but there are no rules.

It is possible to say that there is a culture of restoration that, in Italy, is aimed to conservation.

The architects, which after the master degree obtain the license, can develop a project for a monument¹⁰⁹.

The project must be developed in accordance with Superintendence that have to supervise any step of the project and of the execution of the restoration.

¹⁰⁹ For this reason restoration architecture is teach in the course of Architecture at the Italian Universities. The companies that want to participate in public and private contract must have a special qualification.

Bodies involved in the control of the restorations of the Basilica

- CEI (Conferenza Episcopale Italiana) and Commissione Centrale per l'Arte Sacra in Italia (Central Commission for the Holy Art)¹
- The Soprintendenza Archeologia, Belle Arti e Paesaggio per le province di Ravenna, Forlì-Cesena e Rimini
- ISCR (Istituto Superiore per la Conservazione e il Restauro) for specific works and experimentation for the conservation of the ancient materials. In a side of the monastery of the church, nowadays, is hosted the School for the Mosaic restoration connected with the School of Restoration of ISCR (Rome) and Opificio delle Pietre Dure (Florence).

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A CASE STUDY - PORTUGUESE PROTECTION

The Monographic Museum of Conímbriga

**Developed by: Cláudia Beato
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Abstract

The archaeological site of Conímbriga is one of the best-known cities of the Roman period in the Iberian Peninsula.

The largest and best preserved Roman archaeological site in Portugal, constitutes a paradigmatic example in archaeological research, which has been going on here for over 100 years.

The Conímbriga Monographic Museum - National Museum, opened in 1962 and located in the vicinity of the archaeological station, is responsible for its conservation, dissemination, and exposure to the public. Its museum program is entirely dedicated to Conímbriga and houses material from archaeological excavations that took place there.

Brief local setting

The Conímbriga Monographic Museum is in an area bordering the city of the Roman period.

Implanted in a limestone plateau with excellent natural defense conditions, Conímbriga has been considered a National Monument since 1910.

The Museum and archeosite are in the center of Portugal, in the municipality of Condeixa-a-Nova, in Condeixa-a-Velha, about 30 km from the Atlantic coast.

The population of the municipality of Condeixa-a-Nova has some suburban characteristics (Ferreira, 2013: 84), in a healthy coexistence between ways of life and “mainly agrarian, which are a result of a strong attachment to the land¹¹⁰”.

The municipality's economy is supported in the tertiary sector, but there is an increase in the implantation of industries, resulting from its geographical location and accessibility and the decrease in the importance of the agricultural sector.¹¹¹.

¹¹⁰ <https://cm-condeixa.pt/doc/planoestrategico/FNway-CondeixaNova-ResumoPlanoEstrategico-VersaoFinal.pdf>;
authors' translation

¹¹¹ https://www.cm-condeixa.pt/Urbanismo/02_ELEMENTOS_QUE_ACOMPANHAM/01_Estudios_de_Caracterizacao/Estudios_de_caracterizacao.pdf

Brief history of Conímbriga

Conímbriga's history has a great temporal thickness. The oldest traces date back to the Chalcolithic period. From the Bronze Age, ceramic fragments, fibulae and a sickle were identified, which were framed between the 7th and 9th centuries b.C.

Implanted in a plateau protected by natural defenses, the urban center that gave rise to Conímbriga developed from the Final Bronze.

The oldest levels of permanent human occupation are framed in the Iron Age (Coelho, 2016: 21).

The Romans conquered Conímbriga in 136 b. C., which at the time was an evolving town. With the romanization process, Conímbriga enters a frank process of growth.

With the pacification of Lusitania, during the 1st century BC, during the reign of Augustus, Conímbriga has a remarkable development. Architects are sent to remodel the village according to Roman urbanism. Public infrastructures and buildings are built, such as the forum, the aqueduct, the thermal baths, and a wall with twice the area of the pre-Roman settlement and with a symbolic and honorary function (Idem).

Between 70 and 80, during Vespasiano's rule, Conímbriga was elevated to the quality of a municipality, which translated into an increase in its importance, development, prosperity, and wealth (Idem).

The new statute entails modifications and promotion of the construction of public buildings. Cisterns are built, public roads are re-paved and private buildings are remodeled.

In the middle of the third century, the Roman Empire began to be invaded by barbarian tribes, which caused restructuring at a social, economic, and urban level. As a result of this climate of instability, the defensive structures are reformulated. There is the construction of a new wall, whose layout reveals a contraction of the urban area. Buildings are cut, demolished, or located outside the walled perimeter.



Figure 1 - Monographic Museum of Conímbriga
Source: Direcção Geral do Património Cultural

Restructuring is carried out in the aqueduct and in the water systems. The new buildings are of modest construction and the large *domus* have been transformed into various dwellings or workshops.

Affected by the profound political and administrative crisis of the last centuries of the Roman Empire, Conímbriga suffered several invasions.

In 465 and 468, the Suevi took and partially looted the city and, in 586, the region came under Visigothic rule, accentuating the decadence of urban life.

In the century VIII Conímbriga suffers an Arab invasion. At this time, with few inhabitants, depleted after several invasions, deprived of its former monumentality and without water, the result of the cut of the aqueduct, the village would be just a village. Its definitive abandonment will have occurred during the century IX (Ibidem, p. 15).

During the Roman period Conímbriga had its golden age and the construction of several public buildings is promoted, of which the main ones are already known. The forum, the thermal baths or the most monumental houses, such as Cantaber House and Repuxos House are some of the buildings that can be visited.

The forum was the first building to be built. It was the center of life in the city, where the authorities and commerce were found. On the west side were commercial activities. On the east, the curia, and the basilica.

A new forum was built because of the promotion of Conímbriga to *municipium*, the old one being demolished. The new would no longer be the scene of justice or trade. It was surrounded by high walls and the statues of recognized men were exposed.

The Conímbriga amphitheater had an oval arena measuring 98 x 86 meters. There were six tunnels to enter the enclosure.

Conímbriga Square had a portico that surrounded it on three different sides. Ahead was another portico, which served as an atrium to the temple balcony.

The temple was of tiny dimensions, where only divine statues could fit and had no space for religious services. It was connected to the square by a small side staircase.

The thermal baths date from the time of Augustus. The building had three divisions at the entrance for security and clothing. The thermal complex is relatively small, but sufficient for a growing city. As was the norm for Roman baths, there were three pools: one of cold water, one of transition water and one of hot water. Outside the baths themselves, the complex had a gym.

The rooms were rectangular in shape and aligned. Noteworthy are the Cantaber house, Repuxos house, Swastika Cross house and Skeletons house.

Synthesis of archaeological interventions in Conímbriga

Conímbriga is one of the best-known Roman cities on the Iberian Peninsula. It constitutes a point of reference for the study of architecture and urbanism of that historical period (Correia & Ruivo, 2013: 142).

Conímbriga was already known in the 16th century. There are bibliographic sources where the most imaginative allusions about the city's foundation and origin are narrated (Coelho, 2016: 27).

In 1873, the Institute of Coimbra carried out the first archaeological excavation and, in 1889, under the patronage of Queen D. Amélia, the first archaeological excavation

campaign was carried out. These works had fruitful results, with the discovery and collection of a great deal of Roman archaeological material (Idem p. 29).

The Coimbra Institute was a scientific, literary, and artistic academy in Coimbra with a close relationship with the university. Its archeology section was founded in 1873.



Figure 2 - Conímbriga - General view
Source: Direcção Geral do Património Cultural

The Institute ceased to have significant activity after 1982 (Gomes, 2012: 219).

Excavations become official and continuous. In 1910, Conímbriga is considered a National Monument.

In 1930 the Portuguese state bought some land in Conímbriga, which allows the organization of archaeological campaigns with a continuous character. The ruins also open to the public in 1930.

That year, the “XV Congrès International d’Anthropologie et d’Archéologie Pré-historique” is in Porto and Coimbra and there was the intention of Conímbriga to be integrated in the visitation routes of this meeting (Ibidem, p. 223-225). Archaeological excavations and restoration work are carried out for this purpose. Archaeological

interventions involved collecting the most significant materialities and leaving visible traces to be observed during visits to the international congress (Coelho, 2016: 33).



Figure 3 - Conímbriga - General view
Source: Câmara Municipal de Condeixa-a-Nova

Between 1930 and 1944, an area bordering the eastern wall was investigated, and some housing structures paved with mosaics and spas and a paleocristian basilica were excavated and identified (Gomes, 2012: 224).

Between 1944 and 1962 works were carried out to consolidate and restore various structures and mosaics.

In 1962, the Monographic Museum of Conímbriga was opened to the public, the main disseminator of the knowledge associated with this Roman city.

With the creation of the Museum, systematic archaeological campaigns are resumed in a Luso-French partnership that lasts until the end of the 70s of the 20th century. This collaboration results in the first historical synthesis of Conímbriga, a key work for its understanding (Correia, 2013: 20).

In the 1964-1966 campaigns, the Forum was discovered. It is fully excavated, and work related to this discovery continues until the 1970s. Archaeological excavations are also carried out on residential structures.

In the early 1970s, thermal baths from the Flavian era were identified and excavated, as well as pre-Roman structures.

At the end of the 80s of the 20th century, work was carried out in the "Indigenous Quarter".

In 1986, a roof was built for the Repuxos house using a metallic structure supported by six pillars strategically placed so as not to be too intrusive in relation to the remains. The central square of the Forum is paved.

From the 90s of the past century, the archaeological interventions promoted by the Monographic Museum of Conímbriga, in partnership with several entities and researchers, focus on specific problems and themes.

Evidence of occupation in the Chalcolithic and Bronze Age periods is identified.



Figure 4 - Cantaber House
Source: Direcção Geral do Património Cultural

In the late 1990s, archaeological work was carried out on housing structures and on conservation and restoration on structures and mosaics.

At the beginning of the 21st century, there was a deepening of knowledge about the Forum and the Basilica and archaeological excavations were taking place in housing structures. A few years later, remodeling of the Forum is carried out, and of thermal

baths structures (Correia & Ruivo, 2013: 142). Small notes are made to help the visitor in their reading and interpretation.

In 2010, environmental characterization studies are carried out.



Figure 5 - Swastika Cross House
Source: Direcção Geral do Património Cultural

The Monographic Museum of Conímbriga

Created in 1962, the Monographic Museum of Conímbriga - National Museum aims to ensure the conservation and exposure to the public of the Conímbriga Ruins and to continue the archaeological investigation of the city. The Monographic Museum and Ruins of Conímbriga is a service dependent on the General Directorate for Cultural Heritage (Direcção Geral do Património Cultural). This museum is part of RPM - Portuguese Museum Network (Rede Portuguesa de Museus). In 2017 the Ministry of Culture reclassified the Monographic Museum of Conímbriga to the National Museum.

The museum's permanent exhibition consists of objects from archaeological excavations in Conímbriga and is divided into two blocks. In the first, several hundred objects are exhibited that portray, in their adverse facets, the experience and that of those who inhabited the Roman city and the second dedicated to architecture and religious cults.

Since the beginning of the archaeological work in Conímbriga, the need to have a space to store the collected remains has been evident. In a first phase, they are deposited at the Coimbra Institute.

As archaeological campaigns continue and in view of the large amount of material collected for study, analysis and subsequent restoration, and the discovery of mosaics and frescoes, the possibility of building a museum associated with Conímbriga is being considered.

The museum building, opened to the public in 1962, develops in a unique body that develops on two floors, a basement and the ground floor that presents itself at the entrance level and gives access to the museum and the permanent exhibition rooms.

On the basement floor are the technical areas. The museum has a laboratory for the restoration of archaeological pieces, a darkroom, a warehouse for depositing archaeological pieces.

The material collected in the archaeological interventions was in increasing numbers, making the spaces associated with the reserve small and insufficient. The museum's laboratory, unique in the country, also received material from other geographies and private collections (Coelho, 2016: 31).

These situations associated with the exponential increase in the number of visitors, since the opening of the museum, lead to the request for its expansion.

In 1968 a preliminary project was presented with an architectural solution that is developed around an outdoor patio. The project was approved in the following year.

In 1970, the final project to expand the museum is presented, according to the preliminary project that includes three new permanent exhibition rooms, a library / conference room, facilities for researchers and an interior patio with gallery. On the basement floor, the expansion includes the museum's technical spaces: laboratory, drawing room, secretariat, and archive (Coelho, 2016: 47-48).

In 1971, the building's expansion works began until 1974. With the works completed, there is the notion that the new exhibition spaces must be rethought.

The permanent exhibition rooms and respective exhibition areas are reformulated and organized to have a better understanding by visitors.



Figure 6 - Permanent exhibition - Conímbriga Monographic Museum
Source: Direcção Geral do Património Cultural

The museographic program is developed from a room with controlled lighting that evokes the daily life of Conímbriga, where the pieces are displayed in illuminated display cases; it develops with three more rooms dedicated to architecture, painting and sculpture and religion.



Figure 7 - Permanent exhibition - Conímbriga Monographic Museum
Source: Direcção Geral do Património Cultural

In 1985 the museum reopens its doors completely redesigned. It preserves a diverse collection, distributed by 31 thematic groups, including statuary, decorative fragments, and objects of daily use.

The Conímbriga Conservation and Restoration Laboratory was, for two decades, a true school of restoration of Portuguese archeology. There is a unique mosaic conservation and restoration workshop in the country, which used archaeological materials for study, conservation, and restoration.

Up to the present day the museum has not undergone any significant changes or construction except for the construction of a tourist office in 2004.

Currently, the area under intervention in Conímbriga corresponds to about 15% of its total area and it is possible to visit one sixth of the archaeological complex.



Figure 8 - “Repuxos” House
Source: Direcção Geral do Património Cultural

According to the General Directorate for Cultural Heritage (Direcção Geral do Património Cultural, DGPC), the Conímbriga Monographic Museum's mission is to (...) protect the Ruins, promote their exposure to the public and continue archaeological

research (...) ¹¹². The protection and safeguarding of the archaeological site is ensured by legislation regarding the classification of National Monument and the ZEP ¹¹³ (Special Protection Zone).

Cultural tourism and education associated have always played a fundamental role in the visitation circuits associated with Conímbriga. It is the most well-known archaeological site in Portugal. On the one hand, it has always been present in the tourist and cultural itineraries of the 20th century in Portugal. In addition, he has always been associated with the University of Coimbra, which has always promoted this archaeological site as a reference site for the history of Romanization in Portugal.

The museum and Conímbriga were the most visited cultural institutions during the 20th century. With about 90,000 visits a year, the museum is currently the second most visited, the first being the Coach Museum (Museu dos Coches) in Lisbon. Conímbriga is the most visited archaeological site in Portugal.



Figure 9 - "Repuxos" House

Source: Direcção Geral do Património Cultural

¹¹² <http://www.patrimoniocultural.gov.pt/pt/museus-e-monumentos/rede-portuguesa/m/museu-monografico-de-conimbriga/>

¹¹³ <http://www.patrimoniocultural.gov.pt/pt/patrimonio/patrimonio-imovel/classificacao-de-bens-imoveis-e-fixacao-de-zep/>

One of the key elements in the development perspective associated with Conímbriga is based on the archaeological investigation of the urban core. On the one hand, it allows the exhibition of new areas to the public and enriches the museum's collection; on the other, it promotes the development of historical and scientific knowledge. Scientific research is a key element in the project associated with Conímbriga.

The current research processes are projected in a vision of openness to external projects and in the active search for collaborations, to systematically advance in the knowledge of the Roman city and its evolution. Three areas have received greater scientific attention: the historical-archeological characterization; the framing of the city in the provincial reality of Lusitânia and the maintenance of the site as a cultural heritage and dynamic hub (Correia & Ruivo, 2013: 145).

Since its creation, the Conservation and Restoration Laboratory has been responsible for the public provision associated with conservation and restoration services, especially for institutional clients, including museums, municipalities, or other services dependent on the State.

Within the scope of the financial autonomy that was granted to several public institutions in 2007, the payment for carrying out conservation and restoration work for external entities is now the museum's own revenue and has effectively become its most important source of funding. of the Monographic Museum of Conímbriga after the State Budget.

The conservation, consolidation and restoration of archaeological remains is ensured by the museum's conservation and restoration laboratory. Conservation works represent one of the most complex areas, if we consider the specificities inherent to archaeological remains in the open air, where there are structures built in masonry, stucco coverings, paintings, or pavements, subjected to different thermal amplitudes and atmospheric agents (Correia and Ruivo, 2013: 143).

As an example, the placement of the roof at Repuxos house, to protect floors, structures and coverings, was a solution that had a positive behavior regarding protection against atmospheric agents but had a strong visual impact and the appearance of pathologies in the built structure.

The Conservation and Restoration Laboratory was created with the museum.

It was under the responsibility of Dr. Adília Alarcão, who had been trained in conservation and restoration in the only academic course existing at the time, and taught on an experimental basis at the London Institute of Archeology (Sales: 1)

The work developed in the museum and laboratory was carried out by technicians, researchers, students, and volunteer collaborators who participated in the archaeological campaigns that were being developed (Idem).

The training of technicians associated with the laboratory was carried out according to their theoretical and practical skills. They acquired differentiated specialization for the different types of materials that were the target of treatment and study (Idem: 2).

The variety of methodologies used and developed over the years in the laboratory have made its employees highly specialized professionals with the ability to transmit their knowledge to volunteers and employees sent by other organizations to learn the principles of conservation and the intervention methodologies. This situation was noticed particularly in the courses of technicians and auxiliaries of conservation and restoration that would later take place (Idem).

The laboratory's services had been designed to provide for the lack of intervention in the archaeological collection associated with Conímbriga. The work recommended by the laboratory triggered numerous requests from institutions and private individuals and its activity quickly expanded in the sense of treating estate from other geographies (Ibidem: 3).

In 1966 the Ministry of Education, recognizing the importance of the numerous requests from other institutions and individuals to the laboratory, decreed, through an exceptional prerogative, that services could be provided to the public (Idem).

O laboratório realizava o acompanhamento de projectos de escavação, a coordenação e a execução das intervenções de manutenção e conservação e restauro em Conímbriga e, mais tarde, noutros locais arqueológicos, contribuindo para a sua valorização e conservação (Idem).



Figure 10 - Forum

Source: Direcção Geral do Património Cultural

The laboratory was also of interest because of the quality of the archaeological drawings carried out there and by the specialized library (Ibidem: 4).

The interventions were based on scientific bases and were characterized by ensuring the physical integrity of objects with the use of reversible products and techniques, advocating the principle of minimum intervention in heritage (Idem).

Some of the areas in which the laboratory specialized were mechanical dry cleaning, applied to metallic objects with a thick layer of erosion, the conservation, treatment and restoration of mosaic floors and glass objects (Idem: 5).

He was a pioneer in Portugal in the use of equipment for the electrolytic reduction process, a laboratory methodology for the treatment of metallic objects (Idem).

As an example, it was also in the laboratory that the first abrasive jet used in treatment, conservation and restoration arrived in Portugal (Idem).

They also made replicas of pieces for the purpose of preservation, dissemination, commercialization, or exhibition (Idem).

It was the laboratory that drew up the preventive conservation plan in Conímbriga.

With the renovation works of the museum, the laboratory moved to bigger and better facilities, better equipped for the different types of intervention and the materials to be treated. The laboratory has become a reference in Portugal (Idem: 6).

Conclusions

It was only from the beginning of the 21st century that conditions were created to increase the visitation area after six decades. The area open to the public more than doubled, enabling one of the main missions of the museum: the enjoyment of the remains of the Roman city of Conímbriga (Correia & Ruivo, 2013: 147).

In a first phase, works of conservation, restoration, and enhancement of some of the most emblematic monuments of the city took place - forum, southern thermal baths and aqueduct thermal baths. Due to its characteristics, it was a pioneering intervention that proved to be a success with visitors (Ibidem).

Today, visitors can enjoy and contemplate the remains of several public and private buildings, such as the forum, thermal buildings, the aqueduct, the amphitheater, commercial and industrial buildings, and luxurious private residences, among which the Repuxos house, known for the water games in the center of the landscaped peristyle, for the beautiful floors of geometric and figurative mosaics or for the coverings with molded and painted plaster.

With the classification of Museum of the State, the Museum will be able to apply for obtaining community funds for the study of Conímbriga.

In this perspective, a collaboration protocol was signed in 2015 between the DGPC and the Municipality of Condeixa-a-Nova with the aim of expanding and promoting the archaeological perimeter, in line with a project to develop the infrastructures of the

museum program of Conímbriga. Project that, in the same year, was a candidate for community funds under the Portugal 2020 program.

In early 2018, a cooperation protocol was signed between the same institutions with the aim of promoting the widening of the visitable area of the archaeological complex.

A land acquisition program is also underway that will ensure that almost the entire archaeological area of Conímbriga is incorporated into the public domain.

Such protocols and programs are in line with the museum's mission and as the existing objectives for Conímbriga, to attract diverse audiences, where sustainable cultural tourism is integrated into a cultural project where heritage protection and conservation and cultural development are projected over the long term (Ibidem, p. 144).

The museum's mission is based on the preservation, conservation, and enhancement of the ruins of Conímbriga. The laboratory has always had a pivotal role in carrying out these functions. Research projects and cultural partnerships are expected, there is an increase in tourist interest and an increase of the visitable area is expected. The museum and its laboratory will guarantee its safeguarding, preservation, and conservation.

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A CASE STUDY - POLISH PROTECTION
The Old Town Complex in Krosno

Developed by: Anna Fortuna Marek

1. Presentation of the place

Krosno is a district town located in the southeastern part of Poland, in Podkarpackie Voivodeship. It is located in the picturesque and attractive landscape of the Beskidzkie Highlands (Pogórze Beskidzkie). Currently, it is a small urban organism with a population of about 50 thousand. Krosno is one of the most interesting historical cities of the present Podkarpacie region.

Krosno is a medieval town, although the exact date of its founding is unknown. The city was organized under German law in stages, and a document from 1367 by King Casimir the Great granting the city the title of the Royal Free City of Krosno is considered to be the middle stage of its formation. Situated in the historic Sanok Land, on trade routes, it played an important role in the international exchange of goods for centuries. In the 19th century and at the beginning of the 20th century, Krosno made an important contribution to the process of industrialization of the south-eastern part of the present-day Poland, especially in two fields - the development of the oil industry and as a place where decorative and utility glass, well-known in Poland, Europe and the world, was produced.

Krosno has preserved most of the elements of its medieval layout. The town, in the shape of an oval, surrounded by defensive walls (some of which still remain), was situated on a high hill, between the Wisłok and Lubatówka rivers.



The Market Square. A view from the bell tower of the town parish church. Photo by A. Fortuna-Marek

It was a regular, compact urban layout with a quadrangular market square and a network of streets leading out of it - symmetrically in the south and north directions, three streets each, which converged at the two (no longer extant) city gates - Krakowska and Lwowska. Archeological research within the marketplace has proven that the oldest building was the stone alderman's house erected in the mid-14th century, which was replaced in the 16th century by the stone and brick town hall, the outlines of which are now exposed in the marketplace. Within the town's former defensive walls there is a parish church dating back to the 14th-17th centuries, a Franciscan church and monastery from the 13th-16th centuries, and a bishop's palace dating back to the 14th century.



https://www.google.com/search?q=krosno+Georg+Braun+Frans+hogenberg&client=firefox-d&source=lnms&tbn=isch&sa=X&ved=2ahUKEwiZuMeK37HpAhVQEncKHcLsCckQ_AUoAnoECAsQBA&biw=1366&bih=605#imgrc=bMjOLYNSz93v0M

The golden period of the town falls on the 16th century, when it was referred to as *parva Cracovia* (little Cracow). The view of Krosno by Georg Braun and Frans Hogenberg was included in the work *Civitates orbis terrarum* published in 1617 in Cologne.



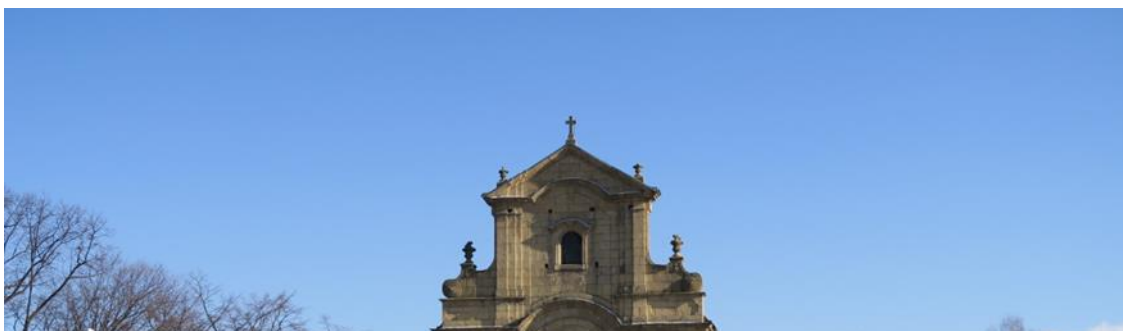
At that time, Robert Wojciech Porcjusz (Robert Gilbert Porteous de Lanxeth), a Scottish factor and royal servitor, one of the most prominent royal patricians, and a long-time alderman of the free royal town of Krosno, who successfully defended the

town during the Swedish invasions, worked for the benefit of the town's prosperity. Porcius is also known as the initiator and founder of the reconstruction of the Gothic town parish church and a founder of a number of high-class artistic realisations.



The complex of the former Jesuit college and monastery and a fragment of the city walls. Photo by A. Fortuna-Marek

A significant investment made in the 17th century was the construction of a complex of buildings of the Jesuit order (college, monastery, and church) within the city walls, partially preserved and used as a college. A separate, later (18th/19th c.) element of the city's spatial structure is the Capuchin monastery complex located to the southeast of the market square and situated outside the medieval city walls and gates. From the second half of the 17th century, the fortifications of Krosno underwent gradual destruction, and after the First Partition of Poland, the walls were pulled down and the city gates were dismantled.



O.F.M. Capuchin Church and Monastery complex. Fot. A. Fortuna-Marek

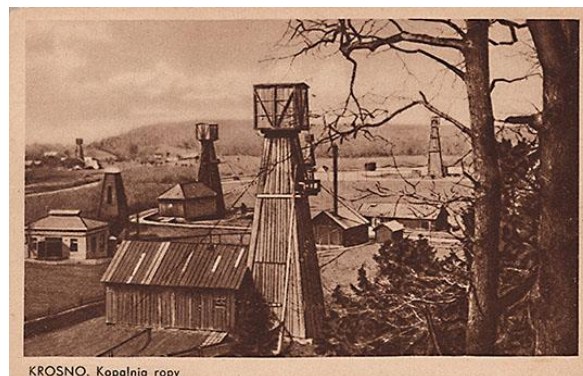


Historic public buildings. Photos by A. Fortuna-Marek

The end of the 18th and the first half of the 19th centuries was a period of economic stagnation, loss of importance and gradual collapse. Only administrative changes introduced during the period of Galician autonomy, e.g., the establishment of an administrative and judicial district in 1865, and first of all the introduction of a railroad through Krosno in the 1880s as well as the discovery of oil deposits near the

town, boosted the town's development. Apart from economic reasons (development of transport and industry), the activities of the local authorities had a significant influence on the town's revival. By the outbreak of World War I, the town's landscape had undergone significant changes - many magnificent public buildings appeared in its landscape, constituting significant architectural accents, new streets were marked out, a town park was established, floodbanks along the Lubatówka River were built, renovation works were carried out on buildings, streets, and squares.

Further development of the town and changes in its spatial layout took place after regaining independence. The city authorities, recognizing the need to regulate and order the development, decided to draw up a city regulation plan as early as in 1923. As part of the plan's realization in 1928-1930 the so-called regulation lines for future buildings were set out, many streets were straightened and widened, new streets were delineated, and decisions were made to regulate the Wisłok River. An important element in spatial planning was delineation of a traffic circle with a radial road layout (today Lwowska, Wojska Polskiego, Powstańców Warszawskich streets). During the interwar period, the city gained not only new streets, but also a number of new municipal and county administration buildings, as well as new parks. A very important investment of that time was the construction of Polskie Huty Szkła (Polish Glassworks) between 1920 and 1924, which still exists today, and its products are known in Poland and around the world. A permanent remnant of these activities was also the building of an airfield in Krosno.



Value assessment



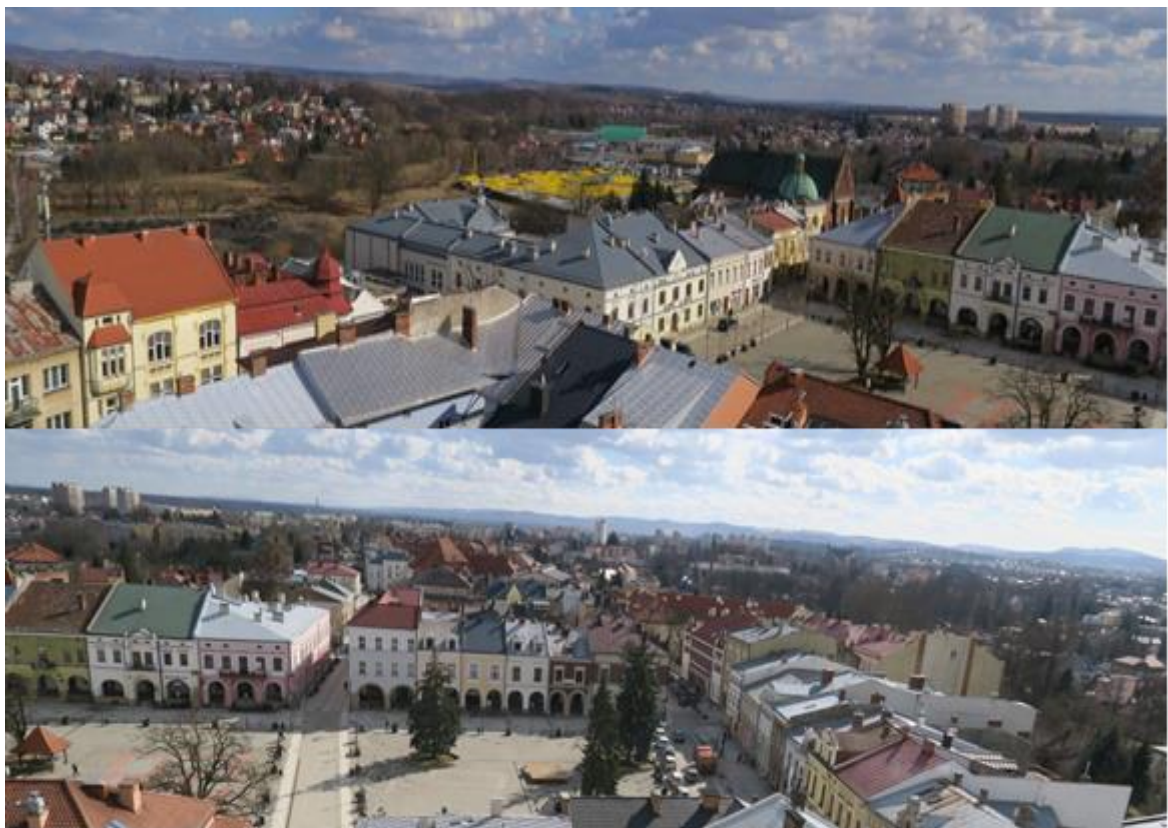
Photo by Krosno City Office <http://praktycznyprzewodnik.pl/podkarpackie/krosno/>



Photo by Krosno City Office <http://praktycznyprzewodnik.pl/podkarpackie/krosno/>

The urban layout of Krosno is a "classic" example of a town enclosed within its fortified walls and at the same time a testimony to the transformations and layering that took place in successive eras. The spatial structure of the city preserved until

today is a representative example of a medieval urban center in Poland. Such representative features of the medieval layout that are still visible in Krosno include: location on a hill between two rivers, an oval-shaped perimeter of the town defense with walls, towers and gate towers (residually preserved), location of the market square in the middle of the layout with the surrounding complex of market blocks, location of the most important buildings (the mayor's house, town hall, churches) according to the medieval and modern layout rules. The cultural heritage values of the city are primarily associated with its landscape values, the preserved medieval spatial layout, and historic buildings erected from the 13th c. to the 1940s. The value of the city's cultural heritage lies primarily in its landscape, the preserved medieval spatial layout, historic buildings dating back to the 13th c. to the 1940s (primarily sacral, public buildings, and residential and service buildings - tenement houses) with high artistic value, rich history often associated with famous Polish public figures, and the still-living intangible heritage.





Old Town Square (two photos above). Photos by A. Fortuna-Marek



The parish church - on the left and the belfry of the parish church - on the right (two photos below). Photo by A. Fortuna-Marek

The location of the town on a high hill is until today limited from three sides by a high escarpment. Two rivers, flowing not far from the city hill, once strengthened the defenses, nowadays they make up for the picturesqueness and landscape values. The historic spatial structure of the old city is still dominated by the medieval blocks of churches - the Franciscan one and the city parish church with a characteristic form of the free-standing seventeenth-century bell tower. These churches are architectural masterpieces and places where high class works of art are exhibited, including medieval, renaissance and mannerist paintings, sculptures, monumental paintings of difficult to overestimate importance for the history of Polish art (e.g., works of John Maria Padovano, John Baptist Falconi or an outstanding collection of over twenty 17th century paintings from the circle of Tomasz Dolabella).

A specific and characteristic feature of the city's market developments are the townhouses located in the main town square, preserved in all four frontages of fifteenth- and sixteenth-century origin, including arcaded houses preserved in two frontages.

The preserved elements of the historic layout and the old town complex - the land configuration, the traffic system of squares and streets, the historic buildings, and the cultural and settlement layers from prehistoric times to modern times - are still legible in Krosno. They are material evidence of the high rank and importance of Krosno over the centuries.



The local government and cultural institutions and associations operating in the city effectively protect, promote and sustain various intangible values (e.g. connected with the glassmaking, flax processing and aerial traditions).



Source: <https://visitkrosno.pl/pl/miejsca/muzeum-podkarpackie>



Source: <https://edd.nid.pl/wydarzenia/edd-w-centrum-dziedzictwa-szklaw-krosnie-dzien-otwarty/>



Source: https://www.miastoszklaw.pl/pl/wydarzenia/centrum_dziedzictwa_szklaw_zaprasza_na_weekendowe_zwiedzanie



Source: https://www.miastoszklapl/wydarzenia/centrum_dziedzictwa_szkla_zaprasza_na_weekendowe_zwiedzanie



Source: https://www.google.com/search?q=krosno+balony&client=firefox-b-d&source=lnms&tbn=isch&sa=X&ved=2ahUKEwiLuu6V37LpAhURBhAIHVSPC5IQ_AUoAXoECAwQAw&biw=1366&bih=605#imgrc=J2txaGsqKs8W5M

2. Protection of the Old Town ensemble

The protection of Krosno's historic urban layout is multidimensional. The old town complex is protected under national and local law. The state conservation services, and the local government are responsible for the protection of the complex. The care of the monuments - according to the law - is exercised by the owners of individual historic buildings and areas. Museums (of regional and local rank), cultural institutions "dedicated" to heritage (e.g., the Glass Heritage Centre) and numerous associations promoting the cultural heritage of the city and trying to revive old traditions and remind the historical importance of the city are very active in the city.

For several years now, the local government has been acquiring (and allocating) significant funds for the repair, conservation, and adaptation of historic buildings as well as for the revalorization of historic urban spaces such as markets, squares, and streets.



Source: <https://krosno24.pl/informacje/na-niebie-balony-a-na-scenie-gwiazdy-majowka-tuz-tuz>

Legal forms of heritage protection functioning in Krosno

According to Polish law (the Act on Protection and Care of Historical Monuments) there are four forms of monument protection. These are:

1. entry in the register of historic monuments

An immovable monument is entered in the register of monuments based on a decision issued by the regional conservator ex officio or on application of the owner of the immovable monument. The surroundings of the monument may also be entered in the register, as well as the geographical, historical, or traditional name of the monument. The register of monuments may also include historic building complexes and urban (and rural) layouts.

2. monument of history, which can be considered a real estate monument entered in the register of monuments or a cultural park of particular value and importance for the Polish culture. The entry on the list of historical monuments is made by decree of the President of the Republic of Poland upon the motion of the minister of culture and protection of cultural heritage. Recognition as a monument of history has, above all, a

prestigious meaning and does not cause any other legal consequences than an entry in the register of monuments. However, the recognition as a historical monument makes it easier to obtain funds from public sources.

3. cultural park, which is established to protect the cultural landscape and to preserve the areas with landmarks characteristic for the local building and settlement tradition. This form of protection is within the competence of the local government - a cultural park can be established by the municipal/commune council based on the relevant resolution, after prior consultation with the provincial conservator of monuments.

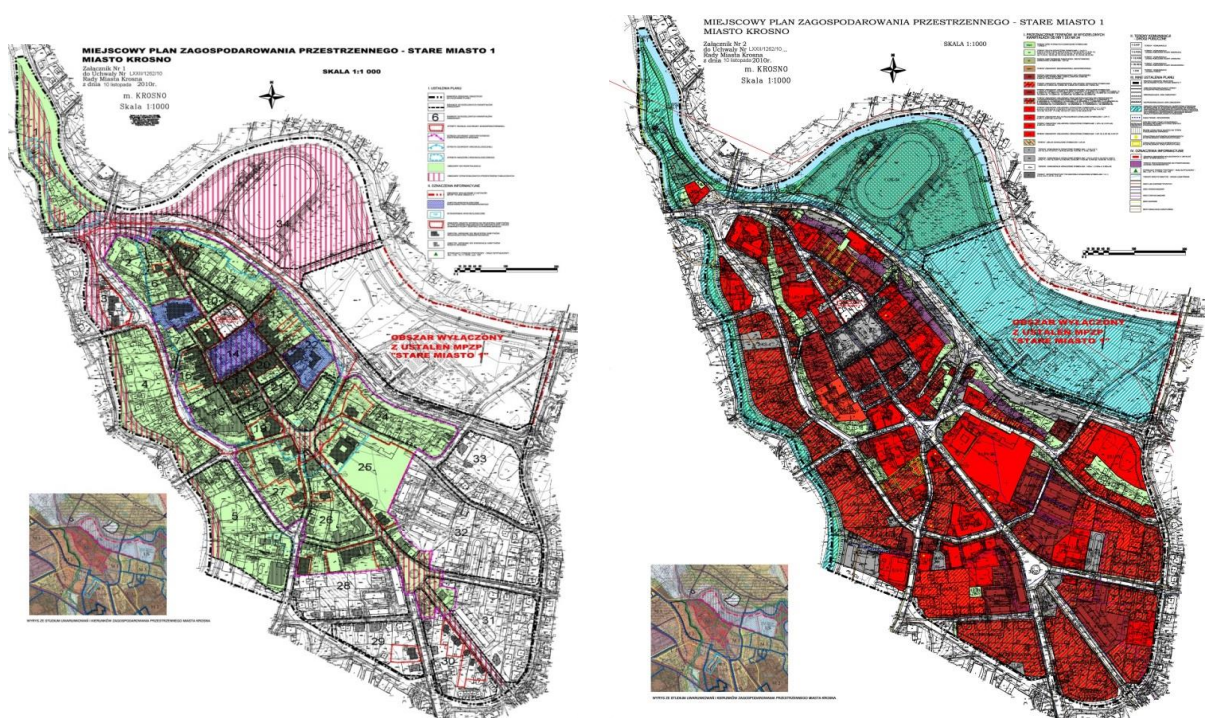
4. establishing protection in the local spatial development plan or in the decision on the location of the public purpose investment, the decision on the conditions of development. This is another form of protection of historic buildings and areas, the establishment of which is the responsibility of the local government.

The old town complex in Krosno is covered by three forms of protection (out of the four mentioned above) resulting from the Act on the protection and care of historical monuments. The basis of protection of the old town area is an entry in the register of historical urban layout. In 2009, the historical urban layout of the old town, dating from the 14th to the 19th/20th centuries, was entered in the register of monuments. (Register entry number A-376). This protection is complemented by numerous "individual" entries in the register of immovable monuments. Within the limits of the old city, several dozen monuments are protected in this way - buildings and historic complexes. These include, among others, three church complexes and church and monastery complexes, all the market houses and selected buildings in the streets leading away from the market, public buildings, and the Bishop's Palace.

Archaeological relics are also protected by virtue of entries in the register of monuments (the so-called C register), which includes primarily the remains of the medieval and modern city fortifications, escarpments, and an archaeological site covering the market square. A very large number of movable monuments (mainly church decoration and equipment) are protected by being entered in the register (the so-called B register).

Krosno also has two other forms of protection, the establishment of which is the responsibility of the local government. These are: the local spatial development plan "Old Town 1", passed in 2010, and a cultural park established in 2019. Both documents required a relevant resolution of the City Council.

The local spatial development plan defines, among other things, conservation protection zones, for which specific restrictions, prohibitions and orders were set out, and areas for revitalization. The content of the plan sets out a number of detailed arrangements in the area of development, which relate not only to the mass of the buildings, building lines, but also many issues that are important in terms of the aesthetic perception of the buildings, e.g. setting out the permissible materials for finishing the facade, limiting them to historically determined in the city - brick and sandstone; the type of roofing (tiles and sheet metal) and their colors, the obligation to preserve the historic division of woodwork (when replacing it), prohibitions on intensive colouring of the facade.



Source: <https://mpzp24.pl/miejscowe-plany-zagospodarowania-przestrzennego/podkarpackie/pow-krosno?start=70>

In the designated areas, specific rules have been formulated for the development of public spaces, e.g. implementation of the surface of squares and pedestrian paths with the use of natural stone materials and cobblestones, prohibition of asphalt paving, prohibition of location of free-standing advertising and billboards. Specific prohibitions related to the form and material of fences were also formulated. The local spatial development plan divides the Old Town into 34 quarters, and for each of them it sets out very detailed culturally conditioned recommendations concerning both the historical buildings and areas and the contemporary and newly built ones, e.g., with respect to their function, location and size, permitted materials, colors, etc. It should

be noted that adoption of the 'Old Town 1' zoning plan was preceded by a study commissioned by the local government on historical and urban planning, setting out the conclusions and guidelines for conservators. This study, as the basis for adopting the provisions of the plan, was subject to consultation with the state conservatory services and an opinion issued by the National Heritage Institute - Field Branch in Rzeszów.

In 2019, by a resolution of the Krosno City Council, a cultural park was established on the territory of the city, entitled "Cultural Park Wzgórze Staromiejskie (Old Town Hill) in Krosno", establishing a number of prohibitions and restrictions in several scopes:

- carrying out construction works and changes in the way of using immovable monuments;
- conducting service and commercial activity in food courts, conducting other service and commercial activity,
- regarding placement of advertising media and visual information carriers
- concerning the storage and handling of waste.

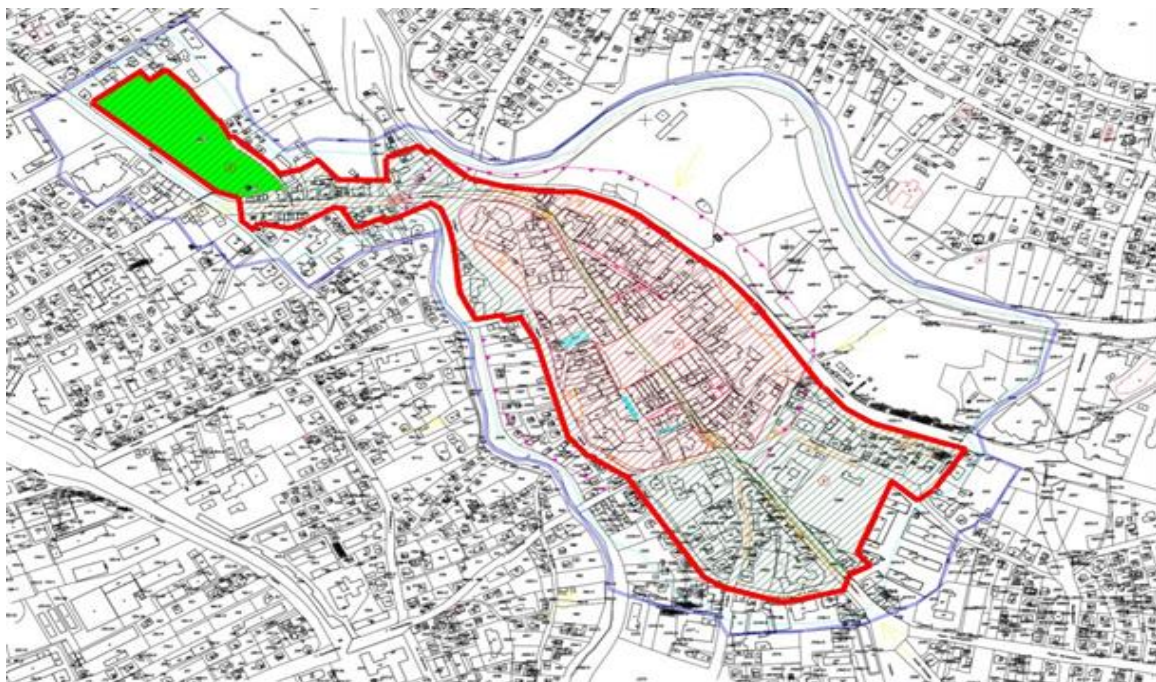
The area of the established culture park is significantly larger than the area of the old town urban layout registration. Graphical appendices to the resolution delineate the boundaries of the cultural park along with protection zones (drawing of protection plan no. 1 - resource and valuation) and a graphic representation of the heritage and cultural landscape condition (drawing of the protection plan no. 2 - heritage and cultural landscape condition diagnosis)

In the public discussion before and after the establishment of the cultural park, attention was primarily drawn to the detailed prohibitions, orders, and restrictions on advertisements, banners, billboards, display windows and windows, external blinds, etc., and to the strict limitations on parking spaces to be eliminated from Market Square and many downtown streets.

Conservation Services - State and Local Government

According to Polish law, responsibility for heritage preservation lies primarily with state and local government agencies. This protection consists, in particular, of the public administration taking actions which aim primarily at: ensuring conditions (legal, organizational, financial) allowing to preserve, maintain and develop the historic monuments, preventing the threats, improper use of the historic monuments;

controlling the state of preservation and utilization of the historic monuments and taking into account the protection in the planning and spatial development. Krosno is a good (yet uncommon in Polish realities) example of cooperation, co-responsibility and the division of competences and responsibility for the protection of historic monuments between the state and local government offices established by law based on the relevant regulations. The primary responsibility for the protection of historical monuments in the city lies with the Przemysł Voivodeship Office for the Protection of Historical Monuments. Krosno is home to one of the three branches of this office in the Podkarpacie region. However, since the 1990s, a separate unit for the protection of historical monuments has been operating within the Town Hall. In recent years, this state of affairs has been formalized by an agreement between the Podkarpackie Province Governor (voivode) and the Mayor, by virtue of which the position of the town's historic monuments conservator has been officially appointed, and the scope of his/her powers, authority and duties defined.



Borders of the Cultural Park Wzgórze Staromiejskie in Krosno. Source: <https://krosno24.pl/informacje/rynek-stal-sie-parkiem-kulturowym-mnostwo-zakazow-znikna-parkingi-i1566>

Renovation and financing

In the last dozen or so years, the local government has carried out numerous tasks in the field of protection and care of historical monuments in the downtown area of Krosno. These include primarily: design and implementation of the Market Square slab preceded by wide-space archaeological research, adaptation of the basement of the

building for the needs of the Krosno Crafts Museum (PodCienami Gallery), adaptation of the anteroom basements at the western frontage of the Market Square for the exhibition rooms of the Glass Heritage Centre, renovation and adaptation of the former market hall for the main building of the Glass Heritage Center, reconstruction of surfaces, streets and squares in the Old Town complex, arrangement (new surface, small architecture) of Konstytucji 3 Maja Square together with archaeological research that allowed to confirm the location of the former Lviv gate (Brama Lwowska), repair and conservation works of arcades of market tenement houses, "reconstruction" of boulevards on the Lubatówka river. Significant funds from many sources - state, local government, church, and private were also allocated by other entities, which carried out many activities important for the protection of heritage and aesthetics of the downtown. The most important of them include: renovation and extension of tenement houses at Rynek 1 and 1a for the State University of Applied Sciences (PWSZ), adaptation of the former Jesuit monastery buildings for the PWSZ headquarters, works in the surroundings of the the Podkarpackie Museum, the Capuchin church and monastery complex. Every year the local government allocates funds from the city budget for the renovation and conservation of historic buildings.

All the above mentioned activities and many others, apart from heritage protection, have contributed to a positive change of the image of the Krosno Old Town.

Conclusions

- The heritage protection case study on the example of the city of Krosno presents a kind of multiplication of several legal forms of protection in the same (or similar) area - generally the most valuable historic and cultural areas of the city. One of these forms is entry/listing in the register of historic monuments, protection provided by the state conservator's office.
- A good example of cultural heritage protection in Krosno is the local government's use of the possibility of additional protection - by adopting local spatial development plans for the historic areas and, above all, by establishing a cultural park.
- Both of these forms of protection are not obligatory - the town has legal competence, but there is no obligation to introduce them. In practice, these are not frequent actions of local governments taken to protect cultural heritage in Poland. On the contrary, since the passing of the Act on the Protection and

Care of Historic Monuments in 2003, the issue of the lack of local spatial development plans for historically important areas in towns and villages and the related threats to historic spaces has often been raised in the discourse of the entities and persons involved in the protection of historic buildings. Drawing up local plans is costly, it obliges the local government to respect the adopted regulations and principles, sometimes makes it impossible to carry out investments which are important from the point of view of the city authorities, sometimes causes opposition from local communities or local 'businesses'. That is why in the Polish reality local plans, especially for the areas of historical urban structures, are not popular among the local governments. It should be firmly stated, however, that a properly prepared (preceded by appropriate studies) mpzp and adopted by the city council may help preserve historically valuable areas and the cultural landscape, protect the spatial order, and help maintain or restore the aesthetics of the city's public spaces.

- A certain problem - quite common in Poland, and not only in the presented city - is a misunderstanding of the role, significance, and above all, the goals of a cultural park by the city's authorities and, to some extent, by the city's conservation services. This form of protection is intended by lawmakers, first of all, to protect valuable and distinctive cultural landscapes. On the other hand, in the interpretation of local authorities, it is supposed to be, above all, an effective means to solve problems with advertising and efforts to aestheticize space, and to a much lesser extent it focuses on the real/actual essence of the matter, i.e., protection of cultural landscape.
- In the context of evaluating the rationale for establishing a cultural park and the impact of this form of protection on improving the protection of the city's cultural landscape, it is currently difficult to draw conclusions. The park was established last year, it is too short a period to objectively evaluate the effects of this protection. It would be worth (after 2-3 years) after establishing a cultural park to conduct social consultations among citizens and perform sociological surveys, which would be primarily an attempt to assess/diagnose, whether - in the "eyes of the citizens" - the cultural park fulfills its most important goals.
- A positive aspect of the protection is the fact that the above three (out of four) legal forms of protection that operate in this area have not resulted in prohibition and lack of investment. On the contrary - in the last few years new,

contemporary in expression, architectural projects have appeared in the protected area - developer's projects, housing projects. It is difficult to judge whether such decisions and solutions were influenced more by trends/fashions for living in the city center visible in other (larger) cities, but undoubtedly the improvement of aesthetics of the city center (objects and areas), could have a significant impact on it. In order to verify this opinion/diagnosis, it would be worthwhile to conduct sociological surveys among Krosno residents.

- This is a positive phenomenon, first of all, for two reasons: it shows that even such a strict protection does not mean that there is a possibility of development, changes, interference in the historic urban tissue, and at the same time new investments are "controlled".
- Krosno and the activities of the city authorities may serve as a positive example that the broadly perceived protection of historical monuments does not have to mean stagnation, lack of development, total prohibitions, and turning the city into one big open-air museum.
- The "multiplication" of the protection of the old town complex in Krosno brings positive effects. Apart from legal protection, the local government of the city has been consistently revalorising the historic areas of the old town for over a dozen years, preceded by research (mainly archaeological).
- Krosno is a good example of a city that is aware of and appreciates tradition, historical significance, and historic values (both tangible and intangible). It can be assessed that both the self-government authorities of this town and, to a large extent, its inhabitants understand that on the basis of these values it is possible to build or at least support building of the future and development - not only in the economic but also in the social dimension. In this small and peripherally located village, the city government maintains several important cultural institutions. These include the local museum - the Craft Museum; the Glass Heritage Centre promoting the traditions of Krosno as a city of glass - an important element in building the city's identity; the Regional Centre of Frontier Cultures (in the historic modernistic, pre-war building renovated by the city) in the "Górnik (Miner)" Culture Centre, which organizes, among others, a cyclical event called the "Krosno Festival". The city and its subordinate cultural institutions, as well as the cultural institutions of the city and its subordinate institutions, are the subject of the city's cultural policy. The city

and its subordinate cultural institutions and local associations, supported in their activities by the local government, organise annually several cyclic cultural events based on the city's history and intangible heritage. These are primarily: Carpathian Climates, Krosno Fair, Galicia Festival, Świet(l)ne Miasto (City of Light), International Mountain Ballooning Competition, National Biennale of Photography "Krosno. City and People" and the International Biennial of Linen Artistic Tapestry "From Krosno to Krosno".

- Various heritage projects initiated and implemented by the local government go beyond the protection of historic monuments. The city of Krosno creates its image largely on the basis of its heritage - it programs its development - social, economic, tourist - with the use of historical monuments and tradition; through promotion, popularization, education, as well as new development and use of historical buildings, adaptations, giving them new functions of "new life". These activities, although undoubtedly part of heritage conservation, belong more to heritage management activities.

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