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SEPTEMBER 2019

# THE RESTORATION WEEK 16TH-21RD SEPTEMBER 2019



# SPTEMBER ON VIEW BEAUTION



# BERGAMO

















Project supported by Mise, ITA - Italian Trade Agency & Assorestauro





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Quaderni di Assorestauro



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SPONSOR PRESENTATION	
_ PRESENTATION OF "ICE AGENCY"	Z
_ PRESENTATION OF "ASSORESTAURO"	ξ
WORKSHOP SESSION	
PROJECT "RESTAURO MADE IN ITALY"	6
MILANO   16TH SEPTEMBER	
_ INTERNATIONAL CONFERENCE CASTELLO SFORZESCO - MILANO -	Assorestauro 8
_ SALA DELLE ASSE AT THE SFORZA CASTLE IN MILAN. HISTORY AND RESTORATION - El.En, Castello Storzesco	10
THE "VENERANDA FABBRICA DEL DUOMO" IN MILAN.	
A PECULIAR APPROACH TO CONSERVATION - Veneranda Fabbrica de	e <b>l Duomo</b> 16
BERGAMO-VERONA   17TH SEPTEMBER	
_ THE RESTORATION OF TEATRO DONIZETTI IN BERGAMO - Studio Be	r <b>iucchi</b> 26
EX OSPEDALI RIUNITI OF BERGAMO. NEW HEADQUARTERS FOR TH	IE ITALIAN
FINANCE POLICE NATIONAL ACADEMY - Fibre Net THE PROJECT FINANCING LEADING TO THE RESTORATION	32
OF PORTA NUOVA IN VERONA - Ibix	38
FERRARA 18-19 <sup>th</sup> SEPTEMBER SALONE DEL RESTAURO DI FERRARA 2019	
THE MEANING OF THE WORD RESTORATION AROUND THE WORLD	42
_ ADAPTIVE REUSE AND RESTORATION	
OF NASELLI CRISPI PALACE IN FERRARA - Leonardo srl  The restoration of Palazzo Gulinelli, Ferrara - Binario lab	
_ THE RESISTIATION OF PARALES SOCIALLEI, PERINARIA SIMURIO RUD	
VENEZIA   20 <sup>th</sup> SEPTEMBER	
_ THE RESTORATION OF THE IRON BRIDGE "PONTE DELLA ZECCA" IN VENICE - Lares	60
I ON IE DELLA ZECON IN VENIUE LUIGO	02
PADOVA   21 <sup>rd</sup> SEPTEMBER	
_ VILLA GIOVANELLI IN NOVENTA PADOVANA. The Conservative restoration	
OF THE CENTRAL SALON - Lithos	68



### **ITALIAN TRADE AGENCY**

ICE - Agenzia per la promozione all'estero e l'internazionalizzazione delle imprese italiane

ITA, Italian Trade Agency, is the Government Agency that supports the globalization of Italian firms, implementing the strategies of the Ministry of Economic Development.

ITA helps to develop, facilitate and promote Italian economic and trade relations with foreign countries, focusing on the needs of SMEs, their associations and partnerships;

ITA assists Italian firms in their internationalization processes, in the marketing of Italian goods and services, while promoting the "Made In Italy' image around the world, and it is directly involved in the attraction of foreign direct investments.

ITA provides information, support and consultancy to Italian companies on foreign markets, promoting and fostering exports and cooperation in all areas – industry (consumer and capital goods), agricultural technology and agri-food, services, and training – with the aim of increasing and making more effective their presence on international markets.

ITA works closely with the Italian Regions, the network of the Italian Chambers of Commerce, business organizations and other public and private entities.

ITA headquarters is in Rome and operates through a worldwide network of 79 offices in 65 countries which act as "Trade Promotion Offices and/or Sections" of the Italian Embassies or Consulates.



associazione italiana per il restauro architettonico, artistico, urbano

italian association for architecture, art and urban restoration

Project coordinator:
Andrea Griletto

### WHO IS ASSORESTAURO?

Established in 2005 as the first Italian association of manufacturers of materials, equipment and technology, suppliers of services and specialized companies, Assorestauro represents the Italian sector of restoration and conservation of material heritage. To date, it is the sole association and a reference in the domestic and international market for anyone willing to start working in the conservation sector in Italy, to be intended in its broadest sense, that is, as a synthesis of the various disciplines involved, of the professional specialists, of the available technology and of the growing business community. If examined as a whole, the sector accounts for a large market share and has a meaningful impact on tourism, industry and bioconstruction.

### WHAT ARE ASSORESTAURO'S GOALS?

Assorestauro is the National Trade Association for the Restoration Sector, representing manufacturers of materials, equipment, technology, specialist companies, designers and suppliers of services for analyses, surveys and diffusion. The Association offers its members information, assistance, advice and training both directly and through its partners, with a view to building a consistent and unitary orientation to the different sectors of the restoration industry at national and international level.

As a national association, Assorestauro is aimed at coordinating, protecting and promoting the interests of the restoration sector and it represents before the outer market, in Italy and abroad, the common positions for technical and economic issues, as well as image, by carrying out targeted activities in such relevant fields of the sector as information and communication, protection of common interests (economy, image, standards), research and development, promotion.

### WHAT DOES ASSORESTAURO DO?

Several activities aimed at promoting the professional skills in the restoration sector fall in the scopes of the Association. They include diagnostic analysis, design and on site execution, producing technology and materials, as well as contributing technological innovation, with the support of Institutions, Universities, Agencies for the protection of cultural heritage and ICE, the Agency for the internationalization and the promotion abroad of Italian businesses. This type of action includes both promotion in Italy (conferences and training seminars, trade exhibitions, courses and similar initiatives) and abroad (foreign missions, training, b2b encounters, restoration sites), where member companies are involved and offered the chance to study and penetrate foreign markets through projects co-sponsored by national and international bodies.



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# RESTAURO MADE IN ITALY

"Restauro Made in Italy" is a wide project aimed at promoting the sector of Italian restoration abroad, launched by the Ministry of Economic Development (MISE) through Agenzia ICE and organized by Fiera Ferrara and Assorestauro by means of technical and promotional initiatives and activities to be held in Italy and abroad in 2019/2020.

The objective of the project is to strengthen – in terms of increased business volume and penetration of third markets – the sector of Italian restoration, the enterprises working in the sector, the training institutions and academies offering skill building, and the local authorities supporting the sector. Considering the high degree of specialization of the sector in Italy and abroad, it is urgent to take the unmissable opportunities now arising from an increased demand in the cultural field worldwide, especially from the most industrialized country, where cultural resources and restoration are rated as a new and growing economic asset.

The first steps of the project – which is rooted in the long cooperation of MISE with Assorestauro since the latter was founded in 2005 to promote the restoration industry worldwide with the operational support by Agenzia ICE – are developed as an alternation of actions of technical promotion and spreading of the Italian methods and technology in the reference market. These actions will come as complex application projects and commercial penetration initiatives, including the participation to trade shows and networking events to support the technical actions. The partnership is then renewed between Assorestauro and the "International Exhibition of Restoration, Museums and Cultural Business" of Ferrara, whose organization has been enhanced in 2019 to become the leading restoration trade show in Italy and a reference at international level.

#### INNOVATIVE CONTENTS OF THE PROJECT

The project owns an innovative strategy, combining different technical and commercial actions aimed at building a model for business promotion and penetration for the Italian SMEs to operate abroad. These coordinated and synergic actions offer concrete opportunities for the Italian enterprises (manufacturers of materials and technology, suppliers of services catering for analysis, survey, engineering and communication, and the sector businesses) to expand their sales network and prospective customers in the reference market, and to improve the commercial penetration of products and services "Made in Italy", to which Restoration of cultural heritage belongs by all rights.

The technical and operational actions developed in Italy offer the chance to spread the Italian practices, methods and technology in the third markets, and create virtuous examples of "good practice". Training actions help build a background of functionaries, technicians, professionals and operators that will be capable of appreciating, using and asking for the peculiar methods of the Italian restoration business. The partnership with the "Interna-



tional Exhibition of Restoration, Museums and Cultural Business" of Ferrara – the reference trade show for Assorestauro – helps build marketing opportunities in Italy and in the target Countries, and enhance the international appeal of the Italian restoration business.

#### THE RESTORATION WEEK 2019

The first "Restoration Week" has been organized to be held during the "International Exhibition of Restoration, Museums and Cultural Business" of Ferrara.

It will be an intense full schedule of meetings, where 50 international experts from 19 different countries will have the chance to meet, learn and get acquainted with the techniques and methods of Italian restoration during site visits to the restoration works in progress of Assorestauro member companies.

The idea of the course organized annually by Assorestauro in collaboration with ICE-Agenzia since 2007 originates from the intention to build direct relations between Italian companies, institutions and foreign experts, to start new collaborations and export the know-how of the restoration sector to the host Countries, thus facilitating the onset of international partnerships and projects.

In addition to B2B encounters, site visits and workshops, the "Restoration week" will offer a number of lectures by international experts in the restoration sector.

#### **INVITED COUNTRIES:**

Argentina, Armenia, Australia, Canada, Cuba, Germany, India, Iran, Israel, Kosovo, Lebanon, Malta, Mexico, New Zealand, Russia, Syria, Turkey, USA, Uzbekistan.

#### **RESTORATION WEEK 2019 - PROGRAMME:**

- \_ 15<sup>th</sup>-21<sup>st</sup> September, from Milan to Venice International Restoration Itinerant Workshop;
- \_ 16<sup>th</sup> September, Sforza Castle, Milan Launching conference of APT – European Chapter;
- 18<sup>th</sup> September, Ferrara Fiere Inauguration of the "International Exhibition of Restoration, Museums and Cultural Business"; presentation of promotional video "Restauro Made in Italy"
- 19<sup>th</sup> September, Ferrara Fiere International conference on "The meaning of the word restoration in the world"





# INTERNATIONAL CONFERENCE PORTICO DELL'ELEFANTE CASTELLO SFORZESCO

09:45 10:00	Welcome Coffee		
Modera	Moderator: Andrea Griletto		
10:00 10:25	Institutional greetings Claudio A.M. Salsi Direttore Area Soprintendenza Castello, Musei Archeologici e Musei Storici Filippo Parisini, President of Ferrara Fiere Alessandro Zanini, President of Assorestauro		
10:25 10:40	Restauro Made In Italy Roberto Luongo General Director Agenzia ICE Presentazione trailer Video Promozionale Restauro Made in Italy *		
10:40 10:50	Presentation of Restoration week 2019		
10:50 11:00	Presentation of Salone Internazionale del Restauro di Ferrara		

- Promoted by Ministry of Economic Development, ICE Agency, Assorestauro, Salone del Restauro of Ferrara
- \*\* Coordinated by:

Claudio A.M. Salsi, Direttore Area Soprintendenza Castello, Musei Archeologici e Musei Storici

Michela Palazzo, Ministero Beni Culturali

Francesca Tasso, Conservatore responsabile Unità Raccolte Artistiche

Anna Brunetto, Restauratrice

11:00	European Chapter launch ceremony
12:00	Kitty Vieth, <i>President of APT</i>
	Caterina Giovannini Board of Assorestauro and APT, Founder Partner of APT European Chapter
	Experiences of International APT Chapter
	Donald Ellsmore APT Australasia
	Rosa Lowinger APT Latin America Chapter, Presentation of APT conference in Miami
	Member of APT European Chapter
	Daniele Bignami Fondazione Politecnico di Milano
	Paola Boarin Green Building Council Italia
	Official Proclamation
12:00	Light lunch
13:00	Visit to Sala delle Asse of Leonardo Da Vinci ** (2 groups)
13:00 13:20	Coffee and suites
13:20 13:40	Photo gallery and Final debate

# 2019 NEXT MEETINGS

5-7 NOVEMBER 2019



Open Presentation conference during Fair Denkmal Moscow

12-23 NOVEMBER 2019



**2020 COMING SOON...** 

Presentation of European Chapter during the 2019 annual meeting in Miami



# ASSOCIATION FOR PRESERVATION TECHNOLOGIES EUROPE



### THE EUROPEAN NETWORK





The Association for Preservation Technology International (APT) is a multidisciplinary organization dedicated to promoting the best technology for maintaining and repairing historic buildings and their grounds.

APT is the only organization dedicated solely to promoting the best technology for conserving historic structures and their settings.

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Assorestauro - Italian Association for Architectural, Artistic and Urban Restoration - was established in 2005 as the first Italian association of manufacturers of materials, equipment and technology, suppliers of services and specialized companies to represent the sector of restoration and conservation of heritage both in Italy and abroad.

# 2 WHAT

**Assorestauro** wishes to promote and be the leader in the inception of **APT's European Chapter**. The main mission is to advance appropriate traditional and new technologies to care for, protect, and promote the longevity of the built environment and to cultivate the exchange of knowledge throughout the European community.

# 3 AIMS | OBJECTIVES

- To provide a useful forum for the promotion of the continued development of preservation technology in Europe
- To contribute to the research, collection and publication of information on all aspects of preservation technology.
- To encourage and participate in the education and training in the knowledge, techniques and skills of preservation technology.
- To collaborate with other European preservation/conservation organizations.

Foster **collaboration**, joint **activities** and **partnerships** with other European preservation/conservation organizations. Provide **leadership** in consolidating the preservation/conservation community and augment activity.



- To contact and meet all APT members based in Europe, to promote their entry into the European Chapter, and to reach as many practicing professionals, academics, associations and companies as possible that are akin to APT for enrollment in the Chapter.
- Launch of the European Chapter, organization of a meeting in Milan (Assorestauro's headquarters) to formalize the Chapter's inception and to elect a Steering Committee to finalize and endorse the rules. (September 16th, 2019)

# LEARN MORE ON WWW.APTEUROPE.ORG



Michela Palazzo Ministero dei Beni e delle Attività culturali Polo Museale Regionale della Lombardia

Francesca Tasso, Irene Scarcella Area Soprintendenza Castello Musei Archeologici e Musei Storici -Sforza Castle – Milan - Italy

> Alessandro Zanini El.En. S.p.A.



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# SALA DELLE ASSE AT THE SFORZA CASTLE IN MILAN. HISTORY AND RESTORATION

In a letter dated 21st April 1498, the secretary Gualtiero da Bascapè informed the duke Ludovico Maria Sforza called il Moro that Leonardo da Vinci had promised to complete by the following September the decoration of the Sala delle Asse, a large square room in the north-east corner of the Sforza Castle in Milan, at the bottom of the Falconiere tower.

The decoration designed by Leonardo in 1498, perhaps aided by a team, includes a large mulberry-tree pergola that, starting from the large trees painted along the walls, develops to cover the entire vault in a dense tangle of branches and golden ropes, intertwined in complicated knots of great elegance. On the walls of the north corner of the room is the so-called Monochrome, a large portion of preparatory drawing depicting the strong roots of a mulberry tree that creep into the ground and, with disruptive force, split rocks and blocks of square shape. This composition illusionistically framed the mouth of the large fireplace in the room at the time of Ludovico il Moro. However, with the arrival of the French and the fall of the Duchy of Milan in 1499, Leonardo had to leave the city leaving the work probably unfinished.

The surprising choice of the mulberry tree, in Italian moro or, in Lombard dialect morone, to decorate Ludovico's reception hall was a clear reference to his nickname of il Moro, and recalled his role in encouraging the plantation of mulberries, on which Lombardy's flourishing silk production was based. Also, from a symbolical viewpoint, this tree, defined as sapientissima omnium arborum, was used to celebrate Ludovico's wise policies and the stability achieved by the duchy under his rule..

A letter dated 1498 specified that "Lunedì si desarmerà la camera grande da le asse c<i>oè da la tore."— that is to say that the wooden planks on the walls, often used at the time to insulate rooms against cold and damp, would be removed. Based on this element, architect Luca Beltrami, who supervised the complete restoration of Sforza Castle at the end of the nineteenth century, rechristened it the "Sala delle Asse (Room of Planks)". In fact, in Ludovico's time the room was known as la camera detta de'moroni (the mulberry room), as recorded in chapter 20 of Luca Pacioli's Divina Proporzione (1509).

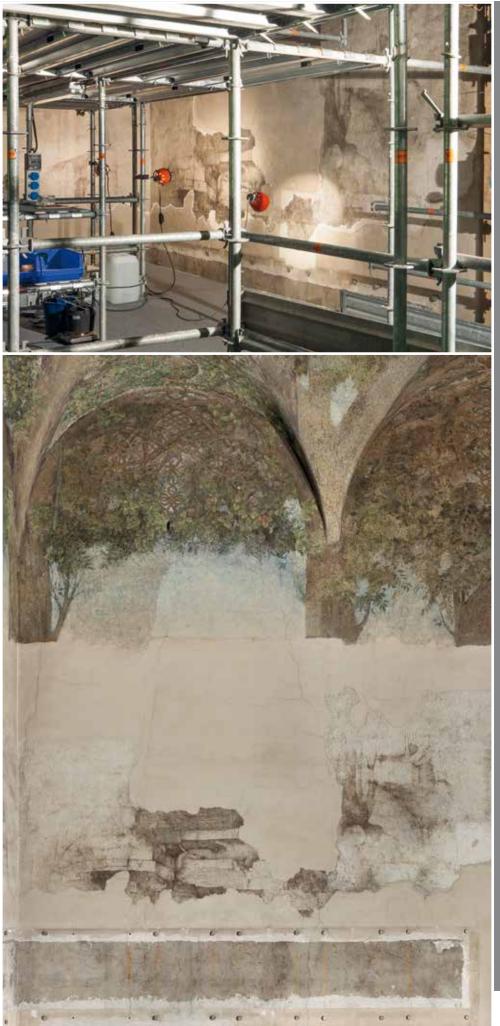
Over the years, the Leonardesque decoration was covered several times with white lime, often used in the past to sanitize the rooms, and the room was used for the most different uses. The Sforza Castle was in fact used as a barracks during foreign dominations and the Sala delle Asse was systematically used as a shelter for horses. From 1893, when the Sforzesco Castle became the property of the municipality of Milan, the Sala delle Asse underwent two major restorations.

At the end of the nineteenth century, under the direction of the architect Luca Beltrami, the polychrome decoration of the vault and lunettes was brought to light together with some fragments of monochrome in the northern corner of the room, the latter left hidden from the public because they were evaluated from the Spanish period .

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The painter and restorer Ernesto Rusca completely redid the polychrome decoration of the vault and the lunettes, accurately following the traces found, and the Sala delle Asse was inaugurated in 1902. The result however surprised negatively both the experts and the public because of the use of vibrant colours very far from the common imagination about Leonardo's work.

After the Second World War the phase of reconstruction of the Sforzesco Castle began because of the damages suffered, at the same time as a general reorganization of the exhibition rooms. The Sala delle Asse was restored by Ottemi della Rotta who did not entirely remove Rusca's repainting, but just lightened it. Furthermore, the Monochrome was entirely brought to light and made visible to the public thanks to the new installation designed by the BBPR architects that provided a boiserie to frame the preparatory design in the north corner while in the remaining walls it reached the base of the polychrome lunettes.

The Monochrome, as indeed the entire decoration of the hall, was affected by extensive phenomena of degradation which, in addition to threatening the conservation of the work, distorted its correct reading.

The recovery project of the Sala delle Asse was started in 2006, with a first phase of diagnostic investigations that highlighted the degradation of the pictorial surfaces, caused by pollutants and the surfacing of salts that have progressively degraded the decoration. Beginning in 2012, the wooden boards of the BBPR set-up were removed from the walls and an important study and investigation campaign was initiated aimed at getting to know the work and its restoration, in collaboration with the Opificio delle Pietre Dure of Florence and the Ministry of Cultural Heritage.

The first phase of the restoration project ended in 2015 with the important recovery of the Monochrome. The preparatory design, executed with charcoal graphic signs finished with ocher-based pigments spread by brush, presented several superficial incoherent deposits and film-forming materials applied during previous restorations. These, together with a diffuse whitish patina due to the presence of saline efflorescences, as well as damaging from a conservative point of view significantly altered the perception, compromising their correct reading. It was therefore decided to intervene through a conservative restoration with the dry removal of inconsistent surface deposits and saline efflorescences, proceeding in parallel with constant monitoring of environmental values. Furthermore, localized detachments of the plaster were fixed, ensuring stability through punctual anchoring and targeted injections of premixed mortar.

Thanks to the systematic campaign of diagnostic investigations that involved the Sala delle Asse as a whole, a band of ancient plaster was found, still hidden under numerous layers of lime and repainting, which runs continuously along the four walls of the hall. A second phase of study was therefore opened for the identification of the most appropriate methodology for the removal of the lime layers and the repainting overlays. These layers were tenacious and strongly adherent to the most superficial layer of ancient plaster and traditional removal techniques would inevitably have led to a loss of the fifteenth-century material. The correct use of laser technology, thanks to its gradual and selective action, allows instead to remove the numerous layers of lime very quickly until reaching the last plaster veiling that hides the preparatory drawing traces underneath it, without compromising the ancient material.

For such a complex operation, a single type of laser could not be used. In general, the most common devices are lasers that operate in the near IR with different pulse durations, from microseconds to nanoseconds. Their main use is the direct removal (ablation) of degradations of various kinds, but mainly inorganic, which cover both artworks and architectural surfaces. In recent years the number of applications of this technology has considerably increased, above all on the different problems regarding restoration of wall paintings.

In this context, an operational protocol (secondary spallation) has been devised that is very useful for the "descialbo" of polychrome surfaces. The term "descialbo" means the removal of one or more layers of plaster covering a pictorial wall surface. In many of our Italian monumental complexes, both palaces and churches, this is a common event due to the subsequent renovations and modifications that these buildings have undergone over the centuries.

After the first experiments in the Roman catacombs (S. Tecla's and Priscilla's) where this procedure allowed to free the ancient paleochristian funerary paintings from the earthy and carbonatic incrustations typical of those contexts, this methodology has been applied also on real wall paintings. Over time and with experience, very complex situations were faced in which action was taken not only on actual frescoes but also on monochrome charcoal drawings.

The most significant experience was that of Rome in the Farnese Gallery of Palazzo Farnese. Here in the lower part of the hall several layers of plaster covered drawings, sketches, sig-





natures of visitors and artists who came to admire the frescoes of the Carracci brothers' vault (1597-1607). It is thanks to this long and delicate intervention that it was possible to acquire the indispensable experience to be able to intervene on the Leonardesque masterpiece of Milan.

The lasers used for the monochrome include all the different pulse lengths, from few nanoseconds to tens of microseconds, of lasers that operate in the near IR at 1064nm. To these an Er: YAG laser emitting microseconds pulses at 2940nm was added - often decisive for obtaining a good result -

The delicate descialbo intervention has thus brought to light the exceptional preparatory drawing of the mighty mulberry trunks in the foreground that mark the walls, some younger trees and shrubs and an extended hilly profile with a small piece of landscape along the horizon line.

On the occasion of the celebrations of the fifth centenary of the death of Leonardo da Vinci, the restoration work was temporarily suspended and the Sala delle Asse was extraordinarily reopened to the public from 16 May 2019 until 12 January 2020, for the exhibition "Sotto l' ombra del Moro. La Sala delle Asse", curated by Francesca Tasso and Michela Palazzo, allowing the public to admire the monochrome and to discover the exceptional traces of the preparatory drawing re-emerged during the restoration work. The study and restoration of the hall, in particular of the polychrome decoration, will resume in 2020.



Francesco Canali CANALI ASSOCIATI - Parma Veneranda Fabbrica of Milan Worksite Supervisor

### THE "VENERANDA FABBRICA DEL DUOMO" IN MILAN. A PECULIAR APPROACH TO CONSERVATION

#### **FOREWORD**

The new expanded Museum of the Cathedral in Milan, inaugurated late in 2013, is the last accomplishement by the Veneranda Fabbrica (the trust catering for the preservation and maintenance of the Cathedral) in the conservation and enhancement of the sculptural heritage of the Cathedral. The project engineering and realization implied the allocation of considerable means and resources, which were however deemed necessary and inevitable by the Board of Trustees to reach the ultimate goal of making the most of the artistic heritage they are responsible for. The large affluence of visitors (amounting to some 1,000 daily during the Expo exhibition) is witness to the successful achievement of the intervention, which involved the contribution of several historians and art experts, restorers, designers and qualified workers. The creation of the new Museum also highlighted the peculiar character of the Cathedral System: a centuries-long bond between the Cathedral, the Fabbrica and the Archives, as well as manual work excellence and the recourse to artistic expression as a natural communication medium. Sculpture remains a living thing and a privileged form of expression, as witnessed by the recent temporary while stimulating exhibition of some works of historic and contemporary art.

#### THE CATHEDRAL OF MILAN AND ITS CANDOGLIA MARBLE

Beside exhibiting extraordinary artefacts, the new Museum implicitly tells the story of the construction of the cathedral and of its most important structural material, i.e. Candoglia marble. The bond between the edifice and the material is stronger here than in most other constructions. The exceptional aspect in the case of Milan Cathedral lies in the fact that each block of Candoglia marble too has a special and very peculiar story to tell about its geological characteristics, about the evolution of quarrying and working methods, about its interaction with the environment and with other materials.

"...Nature...wished to leave a small mark, almost a thin cascade of the purest water, as the quarry in Candoglia may appear at first sight, plunged in a dark and austere environment (...) in the fairly barren valley of the Ossola".

With these words, still suggestive and stimulating today, Carlo Ferrari da Passano described the beautiful quarry at the mouth of the Toce Valley fifty years ago. Candoglia marble is known to have been used since the Roman times, though for limited purposes. In 1386, the duke of Milan Gian Galeazzo Visconti started, with all the inhabitants of Milan, the construction of the great Cathedral. The emissaries of the Veneranda Fabbrica, bearing the Letters Patent now preserved in the archives of Milan, scanned the land of the Viscontis to its boundaries and eventually chose this rare saccharoid limestone as the material

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of their liking. Since then and for some seven centuries uninterruptedly, all the marble extracted from Candoglia quarry was meant to adorn the Cathedral, but for few exceptions.

#### STATUARY AS A KEY ELEMENT IN THE DECORATION OF THE CATHEDRAL

" In Gothic art, architecture and sculpture always live a happy marriage. This is all the more true - and easily appreciated - in the Cathedral of Milan, which can be considered as a unique and inimitable monumental sculpture, or rather an immense and complex architectural sculpture". This elegant rhetorical statement opens a study on the sculpture of the Cathedral by Ernesto Brivio, which continues: "...The architecture of the Cathedral makes a whole with its sculpture. You only need to make a small effort of imagination, remove from the current view all sculpted elements, the ornamental statues as well as the elegant and creative marble lace of rampant arches and "falconature"; then, you will obtain a humiliated architecture, to the point it gets poor, inexpressive or even erased, and what will be left would be an unrecognizable, void and bleak container of a space far less charming than this." Without thinking too much about the very complicated issue of the artistic importance of the sculpted elements in the figurative system of the Cathedral, you will certainly grasp the evident truth in Brivio's words. All statues are made of this special material, Candoglia marble, which invariably stupefies the restorers who take care of the numerous population of statues exposed to weathering. Consider, for instance, the basement section of Saint Quintilian standing on top of the small spire named Gugliotto Pestagalli, shown in Figure 1. All in all, the statue is not in bad conditions, although it is still the original one, carved together with the spire in the mid 19th century. The statue, however, shows a deep crack in the foot, which runs along the vein of the marble. Now consider the huge cost of erecting a service scaffold to restore the spire (see Figure), mounted above the springer of the dome cladding, that is, about 60 metres above the square. Clearly enough, the scaffold cannot be kept there for long years, because of its cost. It is therefore urgent to make a decision about the stability of the statue. After a careful study, seeking the advice of restorers and of the qualified marble experts of the Fabbrica, as well as of the site manager and foremen, the decision was taken to keep the statue in place and consolidate the basement with a number of convenient solutions.

Decisions of this kind have been taken on a daily basis in the centuries-long history of the Fabbrica. Statues have been often replaced, when their own safety or the safety of their support could not be guaranteed. In these cases, a statue is removed, brought in the Marble Yard and hand-copied by the sculptors working for the Fabbrica, with the same skills of the craftsmen who have worked with this method for six centuries and ensuring the consistency of a historical tradition handed over to them. Nonetheless, constant efforts are made to improve the maintenance methods so as to postpone or even avoid such extreme measures. The Politecnico University of Milan frequently collaborates with the Fabbrica to develop these improvements. In particular, the main façade, where restoration works have

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been recently completed, makes the object of a special conservation research. Hence, the collection of the original statues or ancient copies, removed from their original position over the centuries, makes quite a meaningful number today; therefore, the Fabbrica decided it was time to improve their exhibition. This is why the Museum of the Cathedral has been reorganized and almost doubled in space since 2013, while being still accommodated in the ground floor of the Royal Palace.

### THE NEW MUSEUM OF THE CATHEDRAL

Since the late 2013, the New Large Museum of the Cathedral has allowed Milan citizens (whom the Cathedral belongs to!) to enjoy the view of the stunning artefacts gathered during seven centuries of history. The new exhibition itinerary is intended to tell the story



of the Cathedral while keeping the visitors' attention high and stimulating their curiosity. To this end, the character of the exhibition halls constantly changes, offering twists and turns similarly to what happens in a drama plot, by growing or diminishing the number of exhibits in the halls, alternatively enlarged or compressed in space, and enhanced or reduced in height.

The rich collection of sculptures was disseminated in a chronological order and mounted so as to evoke their original location on the high outer walls and spires, or on the capitals inside the Cathedral. This way, while grouped together inside the Museum for reasons of space, the statues stand out as individual exhibits, because they are set against specially conceived backdrops to suggest their original location on top of buttresses and pillars. The itinerary follows an orderly chronological criterion: the exhibition starts from the statues

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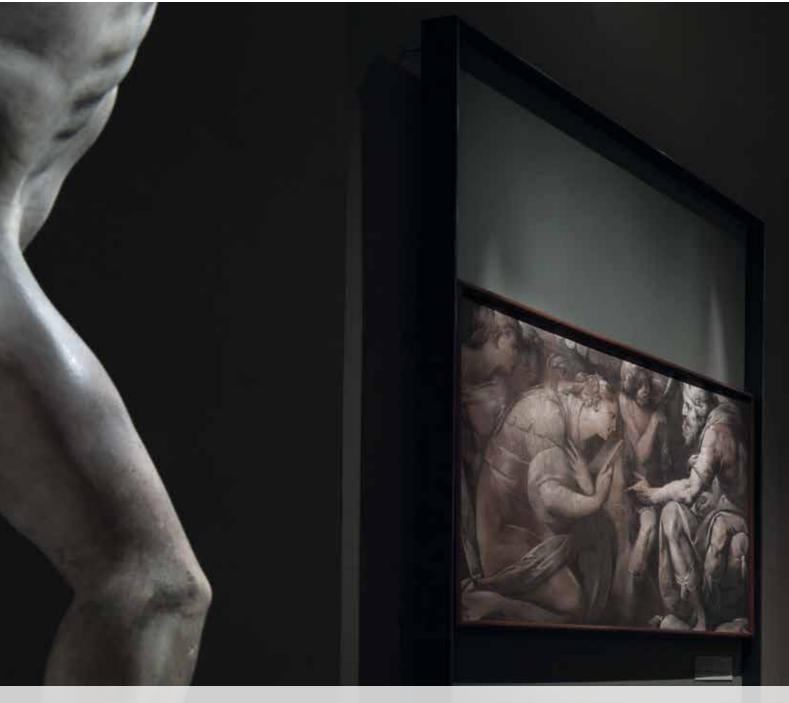
of the first spire, named Guglia Carelli; goes through the 15th century sculptures of the Visconti and Sforza periods, with a break of intimate meditation offered by the spiritual insight of the Borromeo family during the Spanish domination; continues with the enthusiastic upswing of activity of the late 18th century; ends with the 19th century completion of the originally conceived cycle (the Heavenly Jerusalem, surrounded by Saints, Prophets, Angels and Cherubs).

While the sculpture heritage still ornates the high walls of the Cathedral in the locations assigned to them as the Cathedral kept evolving and completing, the Museum offers scholars and visitors alike the chance to enjoy a close view of the works of art. With the aim of keeping alive the sensitivity to this artistic and expressive language, during the Universal Exposition now approaching its end, the Veneranda Fabbrica thought it almost natural to offer also the experience of different artefacts and set up the exhibition of some works by contemporary artist Tony Gregg on the terraces of the Cathedral, as well as — with the collaboration of the Opera della Cattedrale di Pisa — some works by Giovanni Pisano in the Church of San Gottardo, i.e. the Palatine Chapel of the Royal Palace, which has been recently restored by the Veneranda Fabbrica.

The itinerary of the new Museum is completed with the exhibition of some original portions of the glass windows, though now reduced to small bits, which are shown in continu-



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ity and backlit in a dark hall to reproduce the festive sumptuousness of colors and light they used to offer inside the Cathedral. Moreover, tapestries were used to line the walls of two halls, not only to provide the softer illumination required for proper conservation, but also because the homogeneity of matter and weaves arranged in continuous succession helps enjoy the tapestries individually. This way, the precious exhibits of the "Treasury of the Cathedral" look as if they were into a shrine. In such an intimate environment, the value of the objects gets ultimately enhanced, as they are exhibited at different heights depending on their original destinations of usage: chalices, monstrances, processional crosses and flags, crosiers.

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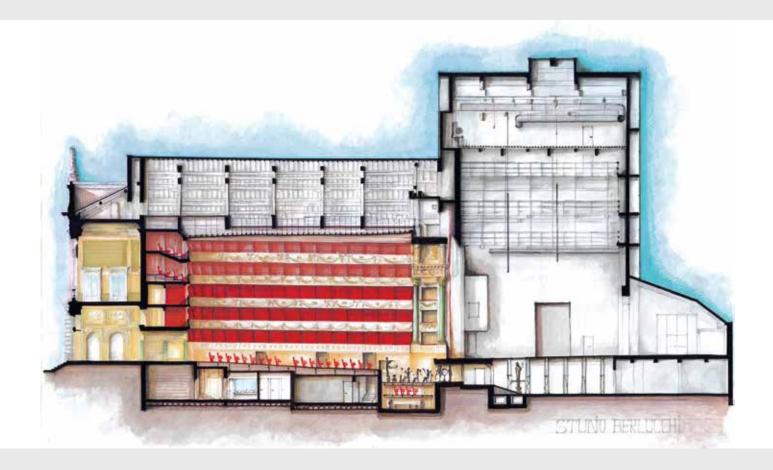
restauro@studioberlucchi.it www.studioberlucchi.it

# THE RESTORATION OF TEATRO DONIZETTI IN BERGAMO

The restoration of Teatro Donizetti in Bergamo is a complex intervention that arises from the request of adapting the building to the rules in force for fire prevention and safety, as the theatre was lacking in eligibility requirements and marked out of obsolete facilities. In addition to these, the building needed to be requalified in order to match the architectural quality of the urban landscape of Bergamo, after the uncoordinated interventions carried out in the sixties, as additions to the original nineteenth-century nucleus.

The intervention, appointed by Fondazione Teatro Donizetti and the Municipality of Bergamo, was designed by a Team composed of several professionals, coordinated by Eng. Nicola Berlucchi and his society Studio Berlucchi. Under the supervision of the team leader, each component of the design team has provided his specific expertise: Studio ARAssociati and Studio Pezzetti for architectural aspects, SPC Srl for structural solutions, Caratti Engineering for plants design, Geogrà Srl for the laserscanner survey, Geom. P. Dolci for estimation and accountability and Müller BBM for the acoustic.

The project begun in 2007 after a public tender announced by the Municipality and won by the team. The final project was accomplished in 2017, after a long phase of discussion





with the Ministery of Cultural Heritage and the Municipality of Bergamo for a total value of 14.350.000 €.

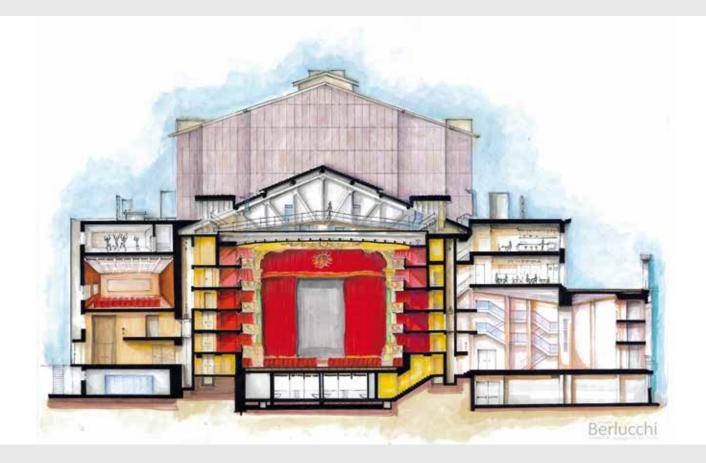
The project envisages on the one hand the standardization and the functional rationalization of the spaces, with a better organization of the paths and the technical and scenical rooms, and on the other hand an external architectural intervention that can give new life to an important building in the context of the city where it stands. Following a careful diagnostic campaign, conservative restoration works were also planned for the theatrical hall, foyer and entrance halls.

After the completion of the work, the Teater will be able to accommodate 500 spectators in the main hall, 424 spectators in the three orders of stall and 296 spectators in the two orders of galleries, for a total capacity of 1220 units, well-fitting all safety requirements and contemporary comfort requirements.

In addition, the building will be equipped with a brand new multi-purpose hall (suitable for chamber orchestra and conferences), a new practice room for ballet and choir, a new hall for banquets and feasts, new changing rooms for almost 200 people (among artists, background actors, choir members, musicians etc), a renewed carpentry laboratory, suitable for the production of the scenes, and new officies for the Foundation.

The external appearance of the building will be refurbished: the lateral facades and the scenic tower will be completely upholstered with a new "skin" made of coloured concrete

Longitudinal and Transversal section of the Theatre





Fotomontage of the main hall of the Theatre after the completion of the restoration

slabs, in order to better integrate and enhance the historical façade, designed by Pietro Via in 1897.

In order to meet fire safety regulations, two new stairs will be added in the area connecting the lateral wings with the main historical body. Such additions will be aesthetically mediated thanks to the new external cladding.

Almost all of the internal areas of the theatre will meet contemporary accessibility standards even for wheelchair users (both audience, artistis and workers), thanks to the construction of 5 new elevators, adequate pathways and restrooms.

All the internal systems of the theatre will be completely requalified, without altering the historical set up of the theatre. Air treating units, chillers and heat pumps will be placed on topo of the horizontal roofs of the lateral wings, hidden by a concrete curtain integrated in the design of the facades.

The stage machinery will be completely renewed and the stage will be provided with a new lifting platform for the orchestra pit.

The realization of the work has been assigned with an international tender in 2018 to a temporary association of companies composed by Fantino Costruzioni and Notarimpresa for a total amount of approximately 11 millions, due to the discount offered during the tendering process. The works supervisor is Eng. Nicola Berlucchi, supported by the same team in charge of the design.

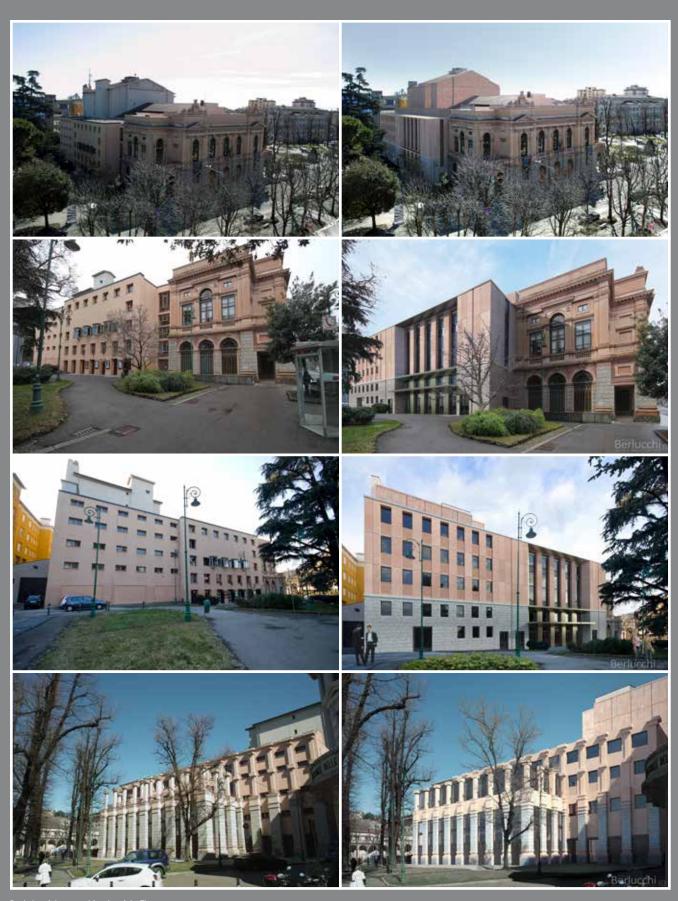
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The main hall of the Theatre during the interventions



The main hall and its decorated ceiling during the restoration





Rendering of the external facades of the Theatre

The building yard opened in February 2018 with the expected conclusion in September 2019. Soon after the beginning of the first demolitions, the unexpected presence of materials containing asbestos was identified in several portions of the building, condition that required a delicate decontamination, determinating a two months delay on the work schedule.

Throughout the following months, many unpredictable situations arised all around the historical structure of the building: during the excavations in the hall there was water infiltrating from the underground, many portions of the building resulted to be different from the as-built documentation (from the sixties) and several unexpected structural criticalities were discovered all around the building. After the construction of the internal scaffholding, the detailed analysis of the decorated ceiling of the main hall highlighted a much worse situation than expected. In addition, even because of the extreme weather conditions that occurred during the last months, the client decided to improve the project providing the complete restoration of the main roof of the hall and the scenic tower. Such situantions required the modification of the project that involved an additional delay of approximately six months and an increase of the costs of approximately two millions Euros. The new deadline for the completion of the work is now May 2020.



WORKSHOP SESSION





# EX OSPEDALI RIUNITI OF BERGAMO. NEW HEADQUARTERS FOR THE ITALIAN FINANCE POLICE NATIONAL ACADEMY

The recovery underway at Ex Ospedali Riuniti in Bergamo, being one of the biggest public retrofitting sites of Northern Italy, is an interesting case for dimensions, architectural features and public investment allocated.

Due to the huge dimensions of the site, the project has been split into lots; at the end of the renewal work, the complex will host the New Academy and the Operational Command of Italian Finance Police.

Although the original hospital unit dates back to 1400, the current conformation shows valuable architectural solutions typical of the Italian public buildings of late '800 – beginning '900,

The complex, covering an area of about 150.000 square meters, was built around 1927 as a unitary project consisting of majestic blocks of buildings aimed at forming a large central garden area between two lateral courtyards.

The retrofitting of existing buildings, aimed at adapting the former pavilions to the functional needs of the new Finance Police Academy, involves punctual changes in the layout aimed to maintain the original plans and perspectives.

From a structural point of view, because of static deficiencies revealed during a seismic vulnerability evaluation, the intervention includes also a static reinforcement and a seismic improvement of the buildings.



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WORKSHOP SESSION



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The preformed mesh made of fiberglass and thermosetting resins (99x99mm mesh) is laid on the surface and connected transversally through fiberglass connectors ensuring an excellent collaboration between reinforcement and wall support, thus improving the mechanical characteristics of the whole structure

### STATIC REINFORCEMENT AND SEISMIC IMPROVEMENT WITH FIBRE NET CRM RI-STRUTTURA SYSTEM

The retrofitting of existing buildings, and the change in the intended use, required appropriate interventions in compliance with the current law both on structure and on plant side. The works consist both in a seismic improvement of the structure and local intervention. Due to the largeness of the architectural complex, the intervention has been made through three different lots, executed in subsequent sequences. The first lot concerned the structural works on the left curtain of the complex, the second the right part and the third will be the central one.

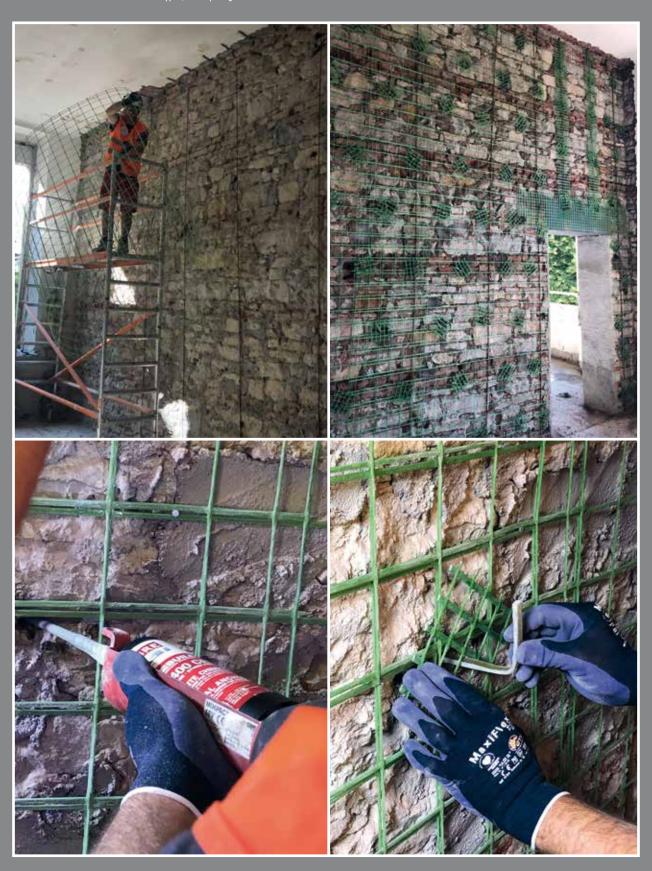
The technique of reinforced plaster CRM (Composite Reinforced Mortar) with Fibre Net RI-STRUTTURA system has been selected and applied for the seismic improvement of about the 90% of the buildings perimeter walls, amounting to a total quantity of about 30.000 sq.mt.

The three floors buildings, are arranged next to each other in order to constitute a three sides uniform facade with a common view



The two lateral buildings have a main entrance with a terraced portico, a continuous façade marked by a lower stone frame, large windows and a second jutting cornice up to the top floor

The preformed mesh made of fiberglass and thermosetting resins (99x99mm mesh) is laid on the surface and connected transversally through fiberglass connectors ensuring an excellent collaboration between reinforcement and wall support, thus improving the mechanical characteristics of the whole structure.



The GFRP connectors , applied on the entire wall surface through a specific chemical anchoring , are placed at a regular distance, according to the design prescription. The system is completed by preformed corner reinforcement which assures the suitable constancy of mechanical performances on all the masonry



RI-STRUTTURA system consists of mesh, corner elements and connectors all made of preformed fiber - reinforced materials G.F.R.P. (Glass Fiber Reinforced Polymer), applied through a lime - based mortar plaster.

The masonry surface, free from the old low-value existing plaster, is then brushed and washed in order to accommodate the reinforcing system properly; then the GFRP mesh and accessories are applied and covered through a properly dimensioned mortar. The result is a widespread structural improvement of existing masonry, which achieves high mechanical and ductile properties and a negligible increase in the structural stiffness. Even in the presence of chemically aggressive mortars such as lime based, the high durability is guaranteed. The low weight and thicknesses, as well as the high breathability and compatibility, allows RI-STRUTTURA to be used on historical and bound masonry.

#### **AKNOWLEDGMENT**

Requalification and retrofitting intervention of the Ex Ospedali Riuniti LOCATION Largo Barozzi, 1 - Bergamo Contractor C.M.B. Company Muratori e Braccianti (Carpi, MO) Executing company F.LLI B.SYSTEMS (Cadelbosco, RE)







The reinforcement is completed through a layer of plaster based on NHL hydraulic lime



TIENI COSTRUZIONI 1836

Michele Martinelli Gianfranco Zilli IBIX



# THE PROJECT FINANCING LEADING TO THE RESTORATION OF PORTA NUOVA IN VERONA

Porta Nuova is a monumental gate erected between 1532 and 1540, designed by the architect Michele Sanmicheli as part of an important renovation of the southern city walls of Verona; it was judged very positively by Giorgio Vasari, who asserts that "there was never yet another work of greater size or better understood" (1). Sanmicheli's project is primarily aimed at the urban renovation, as prominent with respect to military reasons: he set himself the goal of supporting the powerful dynamic drive of the urban organism towards the south (2). From a military point of view, Sanmicheli designed Porta Nuova as an element of the southern walls of Verona, complementary to the two bastions he built next to it, the Barbarigo bastion and the Faler bastion. Under the urbanistic point of view, the construction of the new gate was aimed at the valorization of the Arena and the rediscover the Roman roots of the city, in antithesis with the disordered constructions of the medieval era (3), favoring the commercial exchanges between the countryside and the area of Piazza Bra.





<sup>(1)</sup> Giorgio Vasari, Le vite de' più eccellenti architetti, pittori, et scultori italiani, da Cimabue insino a' tempi nostri (PDF), Edizione Giuntina, 1568, parte III, volume II

<sup>(2)</sup> Lionello Puppi, Michele Sanmicheli architetto di Verona, Padova, Marsilio Editori, 1971

<sup>(3)</sup> Annamaria Conforti Calcagni, Le mura di Verona, Cierre edizioni, 2005, ISBN 88-8314-008-7





The construction of the facades towards the city began in 1535 and ended around 1540, as reported by an inscription on the central tympanum of the elevation towards the city. The present asset of the Gate is similar to the original project of SanMicheli, although during the Austrian occupation it underwent considerable alterations, particularly in the façade facing the countryside: in 1852 the two lateral archways were added, causing a loss of rhythm between the central and the two minor lateral archways; a corridor was also opened to connect the internal rooms and, on the front facing the city, the two rectangular openings on the sides of the pediment were closed <sup>(4)</sup>. The nineteenth-century intervention, which however remains faithful to Sanmicheli's design and construction technique, is easily identifiable by the lower quality of the replaces ashlar coating.

To cope with civil traffic, in 1854 the right archway was opened (with respect to the external façade), followed in 1900 by the left. On the same occasion the double flight of internal stairs leading to the roof and to the positions of the rider was demolished.

The area in front of the gate underwent significant transformations over the centuries; in the nineteenth century, in particular, the general urban planning was influenced by the construction of the Verona Porta Nuova railway station. In the same area between 1884 and 1951 was established the terminus "Porta Nuova" of the city's tram network. The door lost its function in 1912, when part of the bastions was demolished on its sides, interrupting the continuity of the defensive walls to leave space for the traffic lanes of the incoming and outgoing traffic, cutting the gate from the city pedestrian pathway.

The municipality of Verona, promoted a public tender for the project financing for the restoration and reuse of the Porta Nuova building based on the following issues:

- The restoration of the exterior walls and rooftop according to the approved guidelines funded by the contractor through the use of advertising panel on the scaffoldings, under 20% of the surface and for maximum 4 years.
- \_ Proposal for technical improvements for the restoration and management

A Temporary Business Association between The Media, Tieni Costruzioni 1836 and Arch. Dario Masin were awarded for the restoration granting a maximum of 2 year for completing the restoration and with the implementation of the total lighting system for the exterior

<sup>(4)</sup> Pierpaolo Brugnoli e Arturo Sandrini, Architettura a Verona nell'età della Serenissima, I, Verona, Banca Popolare di Verona, 1988

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surfaces. In addition, the contractors proposed a reuse project in accordance with Local Superindency, proposing the adaptive use of the building as a multimedia info-point for the city, a gate for visiting the main city monuments and for discovering its hidden secrets and treasures.

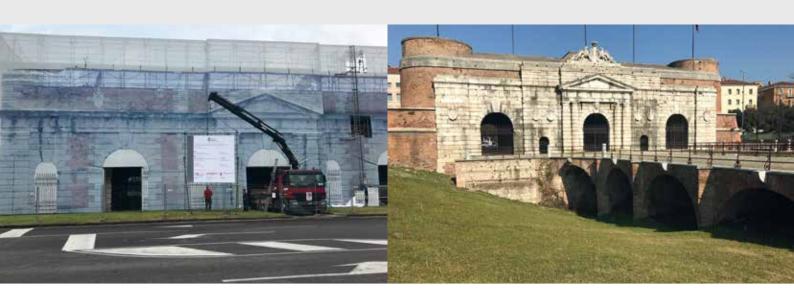
#### PRELIMINARY ANALYSES AND RESTORATION TESTS

The preventive evaluation of the state of conservation of a cultural asset, through the use of diagnostic techniques both to deepen the knowledge of the construction materials and to identify problems due to the relationship between the building and the environment, constitutes an essential component for the restoration process. In fact, on-site diagnostic techniques are essential during every work phase. The diagnostic process is mainly based on the following steps:

- 1. Preliminary phase: identification of the morphology of materials and degradation products, detection of environmental conditions, detailed photographic documentation, historic and stratigraphic research;
- 2. Design phase: identification of the links between the degradation and the environment, definition of the most suitable diagnostic tools based on both the potential of the instrument and the impact on the artwork (destructive/non-destructive analyses);
- 3. Implementation phase: sampling, identifying the most representative areas;
- 4. Conservation phase: creating the conditions that allow the work to be preserved for longer through a maintenance plan and periodic controls.

The Porta Nuova Restoration Project is a perfect case for describing the preventive analyses process. It presents a precarious state of preservation due to high exposure to the environment and lack of maintenance: presence of widespread coherent deposits and high colonization biological, as well as problems of cracking and loss of materials inherent to the nature of the stone.

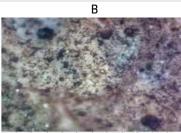
The preventive diagnostic investigation, using the IBIX Mobile Lab (A), was aimed at identifying the most correct cleaning process and calibrating the performance parameters of the selective air micro-abrasion procedure. The Cleaning process is among the most critical and consequently one of the most specialized operations in restoration. It consists in the selective removal of substances present on the surface that can cause both an intrinsic



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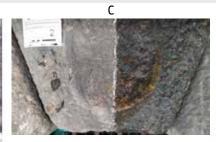




Figura 2.
Test di pulitura: A: area
prima della prova di pulitura;
B: Microscopia ottica 150X
per valutare lo strato della
patina biologica; C: Area
dopo Essenzio e dopo pulitura; D: Microscopia ottica
150X per valutare il livello
ottimale di pulitura

damage to the material and an alteration of the aesthetic aspect, without damaging the surface of the material itserl and the its interaction with the environment, the so-called patina.. For this reason, control, selectivity and gradualness in the intervention phase are fundamental aspects. To support the restorer it has been defined a metodologhy that allows, through the diagnostic process, to evaluate the effectiveness of the cleaning process, the interaction between the selective micro-abrasion systems and the IBIX mobile laboratory.

After a first decontamination of the biological patina with the Ibix Biocare Essenzio, an ecological product based on essential oils (Oregano and Thyme) (B), the cleaning samples had been performed by means of the IBIX Special Cleaning micro-aeroabrasion syestem (C). This technicology allows sampling (and later cleaning) through the low-pressure emission of inerts of natural origin with various granulometry with an operating pressure varieable from 0.2 bar, equivalent to a puff, to a maximum of 8 bar. During the tests carried out at Porta Nuova, the diagnostic phase, complementary to the sampling phase, was carried out with the Mobile Lab of Ibix Biocare, a complete and versatile portable laboratory that allows to perform diagnostic investigations on historical building materials in a simple and intuitive way.

In the specific case the use of the Mobile Lab allowed to evaluate the optimal level of cleaning, studying the morphology of the surface with the optical microscopy (D), and the water absorption rate. The water absorption test with contact sponge (5) showed that the average levels of absorption of meteoric waters of the untreated stone is medium-high degree, thus showing a high porosity, which is the base of the degradation in progress (scaling, pulverization and erosion) as well as the widespread presence of biological patinas (powdery deposits and soil, good influx of rainwater retention). It is therefore necessary to provide a protective treatment that guarantees a significant reduction in the absorption of water at low pressure and that at the same time, given the diffusion of the treatment, provides adequate levels of protection for operators and the environment. Due to the new legislation, an ecological aqueous fluoropolymer VOC free, I.Protect impregnation was tested.

The entire diagnostic process combined with the correct restoration methodologies will provide further information and knowledge on the historical and material evolution of the building and its transformations over the centuries, as well as preserving it for the future generations.

<sup>(5)</sup> NORMAL UNI 11432: 2011 "Methodology for in-situ assessment of the effectiveness of treatments water repellent on monumental surfaces with the method of contact sponge"



SALONEINTERNAZIONALE D E L R E S T A U R O D E I M U S E I E D E L L E I M P R E S E C U L T U R A L I

18 - 20 SETTEMBRE 2019 FERRARA FIERE



# THE MEANING OF THE WORD RESTORATION AROUND THE WORLD

"What is meant by "Restoration", is any intervention aimed at preserving and transmitting to the future, facilitating its comprehension and without erasing the traces of the passage of time, pieces of historical, artistic and environmental interest; it is based on the respect for the ancient substance and authentic documentation constituted by such works, also proposing itself as an act of critical non-verbal interpretation but expressed in concrete labor. More precisely, as a critical hypothesis and a proposition that can always be modified, without irreversibly altering the original in its name" – Giovanni Carbonara (1)

Each restoration site, or rather every action aimed at restoring an historic object, constitutes a unique and unrepeatable act that is based on methodological principles, but which must necessarily privilege the object itself over the idea or our needs.

This requires that, when operating in an international context, both the nature and the history of the objects of intervention, in the first instance, and the sensitivity and significance locally attributed to the term "restoration", must be taken into consideration.

Those are the basis of the conference promoted by Assorestauro at the Salone del Restauro of Ferrara, aimed at involving the international delegates, invited as part of the Restoration Week, to create a ground for the dialogue and the debate on the different meanings of the term, on the local practices and methodologies which, increasingly, in the modern sense of the term, turn to the adaptive re-use to transmit them to the future generations, not only as a historical document but also as an active economic and social component.

Penetrating into the terminological nuances and overt then antitheses that emerge from the reading of the glossary that follows, we will therefore be accompanied by the benevolence of those who learn and by the awareness that always, and only, our work will be guided by the profound knowledge of the object with which we are going to converse.

Andrea Griletto, Assorestauro

(1) English translation by the autor of the quote: ""S'intende per «restauro» qualsiasi intervento volto a conservare e a trasmettere al futuro, facilitandone la lettura e senza cancellarne le tracce del passaggio del tempo, le opere di interesse storico, artistico e ambientale; esso si fonda sul rispetto della sostanza antica e delle documentazioni autentiche costituite da tali opere, proponendosi, inoltre, come atto di interpretazione critica non verbale ma espressa nel concreto operare. Più precisamente, come ipotesi critica e proposizione sempre modificabile, senza che per essa si alteri irreversibilmente l'originale." - Giovanni Carbonara, in "Che cos'è il restauro? Nove studiosi a confronto", (edited by B. Paolo Torsello), Venezia, Marsilio, 2005



# PAD 1 STAND A4-A12

INTERNATIONAL CONFERENCE | THURSDAY 19<sup>TH</sup> SEPTEMBER 2019 | FROM 10.00 TO 13.30

The conference aim at collect the different point of view of the expert from all over the world asking them to answer this question:

# THE MEANING OF RESTORATION: TECHNICAL AND ECONOMIC POINT OF VIEW

CONFERENCE PROGRAM	
	Moderator Andrea Griletto, Technical Director Assorestauro
INSTITUTIONAL GREETINGS	
10.00 - 10.05	Carlo Marina, Ministry of Economic Development
10.05 - 10.10	Roberto Lovato - Dirigente Ufficio Partenariato Industriale e Rapporti con gli Organismi Internazionali
10.10 - 10.20	Alessandro Zanini, President of Assorestaur
10.20 - 10.30	Andrea Griletto, Technical Director Assorestauro
TECHNICAL EXPOSITION	
10.30 - 10.45	Kitty Vieth, President of APT – North America
10.45 - 11.00	mincult, Oficina Del Historiador – Cuba
11.00 - 11.15	Tamar Tuchler, Shimur - The Society for Preservation of Israel Heritage Sites – Israel
11.15 - 11.30	Tatiana Viatchanina, Cnrpm Union of Russian Restorers – Russia
11.30 - 11.50	Coffee Break
11.50 - 12.05	Sarkis Khoury, General Director DGA Lebanese – Lebanon
12.05 - 12.20	Alaa Hammoud, Director of historical buildings della DGAM in Tartous – Syria
12.20 - 12.45	Directorate General of Foundations VGM – Turkey
12.45 - 13.00	Amanda De Giovanni, Restoration Directorate – Malta
13.00 - 13.05	Matthias Rose, LMI Leipziger Messe International GmbH – Germany
13.05 - 13.30	Boarin Paola, Internationalization of GBC Historic Building protocol



#### **B2B MEETING | 14.30 - 17.30**

ASSORESTAURO STAND | PAD1 | STAND A4-A12



#### **Fabio Grementieri**

Vocal Comisión Nacional de Monuemntos, de Lugares y de Bienes Históricos Buenos Aires

#### [...] in Argentina

In Argentina, restoration is referred to the restitution of the formal, spatial and material condition of a monument as it was at certain scenario of its history. It is only applied to architecture, landscape and art but never to city planning due to the heterogeneous nature of the urban fabric of all villages, towns and cities of the country. As a modern practice restoration emerged in the early 1940s with the creation of the Comisión Nacional de Monumentos and the rescue of Colonial architecture and Independence landmarks. At the beginning of the 1980s, restoration practices were extended to monuments of the 19th and 20th centuries and more specifically to repair of structures and finishing. There are many other terms that are used to define preservation interventions beyond strict restoration and some of them are: preservation itself, conservation, renovation, adaptive reuse, recycling. In the past decade one term seemed to have encompassed all words and actions on heritage: enhancement (puesta en valor in Spanish, coming from the French mise en valeur) whose meaning suppose different operations on any piece of heritage, all in benefit to the appraisal and conservation of the landmark.



#### Yelena Muradyan

Project Manager IdEA Foundation

#### [...] in Armenia

Armenia is one of the ancient countries in the world and has substantial cultural heritage. Both monumental and vernacular architecture is extremely important in the understanding of Armenian history as well as creating a strong sense of place.

Armenia's terminology of restoration refers to both monumental and vernacular historic structures as the same, which poses a challenge in differentiating between the two. Differentiation is important because vernacular architecture often has a lower priority in historic preservation than the iconic monumental works such monasteries, statues, and civic buildings. In Armenia, there are three methods of restoration: i) conservation; ii) fragmentary or partial restoration and; iii) complete restoration which is referred to as reconstruction. In conservation, there are two understandings, temporary conservation and basic conservation. While reconstruction should be used in specific situations and applied to specific

The goal of any organization working on projects of cultural value is to see the legitimization of cultural heritage protection to work in practice especially within the Historic District (HD). The purpose is to protect and conserve the heritage of the city and the country; to safeguard the character and heritage of the city by preserving the district as a whole and individual property therein that embodies important elements of its social, economic, political or architectural history; to promote the conservation of such district for the education, pleasure and cultural enrichment of residents of the district and the city and country; and to stabilize and enhance the property values throughout the Historic District as a whole.



#### **Donald Ellsmore**

DPhil FAPT Convenor APT Australasia Chapter

#### [...] in Australia

buildings

Australasia is a region comprising Australia, New Zealand, some neighbouring islands and some southern parts of South East Asia. The area is multi-cultural and multi-ethnic with a mix of indigenous, Asian and European cultures. The widely differing cultural beliefs of the diverse population groups make it hard to define restoration in simple terms.

For example, indigenous Australians, whose history is more than 40,000 years old, does not include permanent dwelling structures. The Maori of New Zealand have a culture dat-

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ing back 1,000 years but Maori structures are not believed to have value beyond the lives of their builders. Europeans, who colonised the area 200 years ago introduced European cultural values, which vary greatly from indigenous cultural values in the region.

In order to assimilate tangible and intangible indigenous and European cultural values regarding man-made cultural artefacts and structures today, the Venice Charter has been adapted for use in Australasia. The Australian Burra Charter, which has wide currency and has informed the development of the Hoi An Protocols for best conservation practice in Asia, defines restoration as one of the processes of conservation, with the specific meaning of returning the existing fabric of a place, or structure, to a known earlier state by removing accretions or by re-assembling existing components without the introduction of new material. Restoration is a niche activity, whereas adaptive re-use is widely practised.



Matthias Rose

Director of LMI Leipziger Messe International GmbH

#### [...] in Germany

Restoration and renovation play a major role in Germany. Since the restoration affects both the culture and construction sector, many regulations are based on the region and are determined by the respective federal state. This affects the classification of buildings as protected monuments and the building regulations. The German Confederation of Skilled Crafts (ZDH) and the Association of Restorers (approx. 3,000 members) are the most important professional unions for restorers in the handcraft and academic sector. Building owners can receive federal, regional and municipal financial support for the restoration of their buildings. The German Foundation for Monument Protection is the largest private initiative for monument conservation and supports around 400 projects annually with funds from private donations.

Internationally active manufacturers of materials for restoration, such as construction chemicals, building materials, measurement technology, pigments and instruments are also founded and established in Germany. Since 1994 every two years, 'denkmal' - Europe's Leading Trade Fair for Conservation, Restoration and Old Building Renovation (05 - 07 November 2020) takes place in Leipzig. In 2018, 448 exhibitors and 14,200 visitors from 19 countries took part in 'denkmal' and the parallel show 'mutec' - International Trade Fair for Museums and Exhibition Technology. The 'denkmal' meanwhile also has two subsidiaries in Moscow (Russia) and Shanghai (PR China).



#### **Arman Singh**

Sub-Divisional Engineer PWD (B&R) U.T. Chandigarh

#### [...] in India

India is one of the oldest civilizations in the world. It has numerous ancient monuments and sites spread across the length and breadth of the country. The conservation, restoration, repairing, reconstruction and preservation work of the buildings is a continuous and arduous task.

The restoration work needs to be patiently so as to keep intact the architectural value of the building. The restoration work of a building involves special attention to the plans, intention, materials and tools used by the original builders. In order to pass onto future generations what is currently identified as being of cultural significance today, we must imbibe good conservation practices specially for the heritage buildings in order to prevent them from deterioration and extend the life and basic functions of these buildings. The buildings need to be restored keep in mind the adaptive reuse of these buildings, as per prevalent use.

India has not only numerous ancient monuments like Taj Mahal, Red fort, Hampi Temple, Ajanta caves but it has also several modern heritage structures also. The city of Chandigarh in Northern India houses Capitol Complex which has been inscribed as UNESCO World Heritage site in 2016 for its contribution to the Modern movement. It has been planned and designed by renowned planner Le Corbusier. The city of Chandigarh is the first planned city of independent India and symbolized the aspiration of the young nation.

The Capitol Complex is living heritage as it houses the Administrative, Legislative and Judicial headquarters for the provinces of Punjab and Haryana, due to which thousands to people visit these buildings each day. The restoration of the Capitol Complex is being undertaken to preserve one of the biggest exposed concrete structures in the world which has shown signs of distress on account of natural decay due to aging, aggressive environments, improper maintenance and composition of concrete at time of casting.



#### Tamar Tuchler

SHIMUR The Council for Conservation of Heritage Sites in Israel

#### [...] in Israel

The land of Israel is located at the junction of three continents Asia, Europe and Africa. In addition to its strategic location, and its sanctity to a number of religions, Israel attracted over the years various peoples and diverse cultures who mark their cultural impact in the landscape of the country. For that reason, Israel is characterized by a wide range of archology and historical sights and by a rich variety of architectural styles and Construction technologies from ancient times to the present.

The concept of the meaning of "Conservation" in Hebrew language is often forced to be more articulate, because the field of Conservation the Heritage in Israel is quit new, both at the level of methodology and at technology level. Since more than four decade, especially at the last ten years, Israel facing lots of challenges and works under the pressure of modern development in order to save and preserved all the national and local heritage sites. On the other hand, promoting a united governmental policy of Conservation providing the local needs, but also devoted to the international convention credential such as Venice Charter, Burre Charter and UNESCO regulations.

Israel embraced all layers of its cultural diversity; Preserving and saving the past for the future generation is one of the guideline value, leading the authorizations and the organizations who are responsible to preserved, Conserved and restored the past. In Israel, we can disclaimer the field of conserving the heritage into tree main structures:



- 1. The Israel Antiquities Authority, responsible for all archeologic findings until the mid-18th century
- 2. The Council for Conservation of Heritage Sites in Israel, in charge on the Historical remains from the modern period
- 3. Israel Nature and Parks Authority, responsible for preservation of nature and heritage
- 4. "Moreshet", governmental office who coordinate many of the conservation national projects, financially and conceptually.

Each one of these organizations has its own management conservation teams, statutory unite and planning department. All assembled from architects, engineers, urban planners, historians, geographies and professional restorers. Although the teams are separate and the field of responsibility by each one is very clear, the organizations are working together on many Conservation projects, publicities, educate the public for conservation culture, providing accessibility for information and for less known sites in the country, working with the governmental offices on policy consolidation and many more. All done under the same purpose- preserving the past for the future.



#### Bekim Çeko, phd

Head of Steering Council of Kosovo Institute for the Protection of the Monuments

#### [...] in Kosovo

Referring to the regulations in Kosovo, the restoration means an activity aimed at preservation and displaying of values of the Cultural Heritage. By the law Cultural heritage includes Architectural heritage, Archaeological heritage, Movable heritage and Spiritual heritage. As it is sentenced in our law, restoration is an activity that deals with main four type of cultural heritage. So, in technical terms refers in multidisciplinary approach in every single type and subgroups of them. When we think that every single cultural property is specific and needs specific attention that makes more complex and more important the knowledge about the restoration in general and in specific too, with main aim to preserve and display the values. The contextual view, in a country such as Kosovo, that relays different stratifications of civilizations started from prehistoric, ancient, Illyrian, roman, byzantine, ottoman eras etc., and with settlements formed across the ancient military and trade roads makes the place important world-wide in wide approach and is the main tool of identity of the country in particular. So, with restoration we do not restore just the inherited one, but also built the sense of being a part of all.



#### **David Sassine**

Directorate General of Antiquities, Ministry of Culture, Lebanon

#### [...] in Lebanon

In order to fairly estimate the complexity of the word "restoration" in a country like Lebanon, we first need to know that 6,000 years of civilization and built heritage has been subject to massive destruction during 15 years of civil war from 1975 until 1990.

Since the dawn of the 1990's, the country has been contracting major reconstruction and restoration projects that needed to erase the scars of the war, satisfy the increasing need of housing and services, and create a new socio economical identity for the country, inspired by the flourishing neighbouring countries at the time.

In fact, the dilemma lied in defining what should be the purpose of restoration:

- a. to regenerate the initial aspect of the building before destruction, damage or negligence;
- b. to just preserve the remaining part and crystallize the building in time in its actual ruin state:

 to seize the opportunity and reproduce a new version of the building that satisfy the actual needs, vision and trends.

Looking closer to the projects that has been executed between 1992 and the actual date, managed by the Directorate General of Antiquities (DGA) in collaboration with the Council for Development and Reconstruction (CDR), we can say that the concept of restoration in Lebanon has been a harmonized and synergetic assortment of the three approaches mentioned here-above.



Amanda De Giovanni

DGA Malta

#### [...] in Malta

Malta is a country very rich in cultural heritage ranging across 5000 years. The architecture of the Maltese islands is a very distinctive architecture due to the soft globigerina limestone from which most of the islands' buildings are constructed from.

Restoration in the context of buildings and architecture, in Malta, is taken as getting the building/artefact/object to a previous state in order to safeguard, use integrate and pass it on for future generations. We also try to improve legibility and accessibility within these structures in order for them to be more appreciated by the general public.

Within the Restoration Directorate our main objective is to restore, conserve and rehabilitate government owned buildings, fortifications and palaces. All projects are taken from the documentation stage where drawings, photogrammetrical surveys, laser scanning and historical research and material investigation is carried out on the building prior to any intervention. Then this would take us to the site implementation phase preceded with application to the planning authority to obtain the relevant permits.

Projects vary from simple restoration projects of facades of buildings with cleaning processes, to remove deleterious materials, consolidation and stone repair, new pointing and protection processes, to more holistic and larger projects where we not only tackle the fabric but also the spaces within by rehabilitating the spaces, giving new uses, and designing even the interiors and integrating the modern services within the building.

We have also carried out restoration works on very large extents of fortification walls in instances even carrying out consolidation of the underlying rock and foundations in order to stop movement of the walls. Projects on fortifications included also rehabilitation of old city centres including paving projects, rehabilitation of ditches into gardens and new lighting system for the fortifications.



#### Salvador Guillar Jimenez

Director of Conservation and Research INAH

#### [...] in Mexico

Mexico possesses an infinity of cultural heritage throughout its territory. This cultural richness, of relevance not only for the country, but also at the international level, entails a great responsibility for its conservation. Hence, since its creation in 1939, the National Institute of Anthropology and History (INAH), assumed, as substantive tasks, the research, conservation and dissemination of the paleontological, archaeological and historical cultural heritage of Mexico, developing, over the years, a series of normative provisions to regulate its performance. Specifically, in its "General Institutional Guidelines for the Conservation of Cultural Heritage", it establishes that any conservation action must respect its integrity, material, invoice, construction systems, image, values, meanings, uses, associations and context, as well as be carried out through a methodological and interdisciplinary process that contributes to the study, understanding and transmission of its values. Within





Viatchanina
Vice Director
CNRPM
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this conception of conservation, are contained prevention, direct actions of stabilization, as well as restoration, understood as all those works carried out in a stable monument, which aim to facilitate its appreciation, understanding and use, all in close connection and co-responsibility with the society that gives meaning to this cultural heritage and which strengthens in identity and memory.

#### [...] in Russia

In the Russian sense of the word "restoration" there are aspects relevant to European concepts (primarily Italian, fixed in the "Venice Charter"), but there are - and even prevail - serious differences. This is due to the fate and state of the historical heritage in Russia, its quality, the conditions of its existence, including climatic.

In practice, in Russia it has historically developed that the concept of "restoration" in architecture usually coincides with the literal meaning of this word, meaning (translated from Latin) recovery, renewal. And unlike the Italian school, which prefers the word (and the principle) of "conservation", in Russia the word "restoration" does not bear any negative nuances. This has a definite historical justification and is associated with dramatic political and ideological changes in Russian history, especially in the 20th century, bringing unprecedented, often systematic destruction of historical heritage. In the 20th century alone, Russia goes through two World wars, revolution and two changes of ideological regimes, in which the national cultural heritage was practically taken hostage, which reduced its physical safety below all possible norms. Such a function of the historical heritage as national self-identification was revealed and came to the fore - or rather, the threat of its loss, the need for reproduction. The conservation of the ruins only exacerbated the threat. As the only possible way out in the Russian restoration, the method of scientifically credible "holistic restoration" on the initial or "optimal" date and even complete reconstruction of the object was adopted. The first industry document "Instruction ..." of 1949, enshrined it legally. At the same time started the heyday of scientific restoration in Russia.

Today is another turning point in the life of architectural heritage in Russia. The problems of incorporating it into modern life, adapting to updated functions (as opposed to the prevailing museumification in Soviet times), come to the fore and are in many ways more relevant to the European experience. On the other hand, international cooperation in the preservation of heritage, which is increasingly recognized as universal, is intensifying. Accordingly, the national concept of "restoration" evolves, absorbing new value aspects of authenticity, historical layers, inclusion in the present and the future.



#### **Alaa Hammoud**

Director of historical buildings DGAM in Tartous

#### [...] in Siria

The cultural heritage with its architectural part (monuments, archaeological and historical sites) in addition to its historical value, is one of the most important sources of the national income for the countries as it is a sustainable source of the country's economy, so it needs special attention to show that architectural heritage properly through restoration and reuse to ensure that they are primarily protected and secondly to provide a sustainable source of income. The aim of the restoration is to protect the cultural value of our heritage including the historical monuments, archaeological sites, and even the founds. Because of the importance of the restoration interventions and its seriousness for the historic monuments, the restoration must be subject to a consistent philosophy and thoughtful scien-

tific strategies, so that restoration does not lead to the loss of archaeological and historical value. Restoration does not mean beautifying, but restoration is a specialized process aimed at preserving the survival of the archaeological and historical significance of the historical buildings and sites, by respecting the originality of its materials and maintaining its traditional appearance, even though the use of modern building materials during repair operations on the entire traditional materials requirement of exhaustion, and if they had to be the use of modern materials, the process must be used very careful and be invisible.



# Gönül Akyıldız Owner and executive director

TG Expo

[...] in Turkey

We first want to examine the importance of starting from abstract concepts to be protected. Anatolia has hosted many civilizations for 12,000 years and has been home to various races, religions and political formations. The preservation of this great potential has caused the art and architectural works of civilization and states to come to the present, starting from prehistoric times. Approximately 20 civilizations settled in Anatolia, which allows the transition from Asia to Europe, are still standing on these lands as ruins.

We, as children of this ancient history, live in an age of renewal by attempting to internalize the concept of restoration within the framework of conservation plans, architectural works, which are traces of ages. The transfer of these traces to future generations is included in the content of the steps we take from abstract to concrete with the concept "securing the future for the past", which is the motto of our own organizations. Turkey is an important science country where is planned overlap with the finalized and ongoing restoration of the structure and these universal values. As a country Turkey has a great potential of art and history, along with the restoration concept in the perspective of a historical consciousness in this context, creates formations to carry our past with our future.

#### [...] in Turkey

#### Muradiye Şimşek

VGM. Directorate General of Foundations In the last fifteen years Turkey seemed a big restoration worksite; protagonist of this intervention is the rich archaeological and architectural background of the country. Different kinds of architectural heritage; palaces, industrial buildings, houses and other public edifices have been restored. As much as public institutions, private sector also has a big and rising interest in restoration. Financial and technical support by central authority and different conservative Projects of different municipalities in urban scale particularly encourages the private owners to restore their own heritage properties. There is also a big consciousness on restoring movable heritage. So many people, beyond the institutions, work to conserve their private collections, especially manuscripts, to find a way for a connection with their past. Restoration in Turkey is appropriated a sensitive, scientific and multidisciplinary







**Kitty Vieth** 

President APTI, Association for Preservation Technology International

work by experts. And there are valuable researches on modern restoration materials and techniques. I hope that numbers of skilled and qualified restorers will increase enough. It is obvious that; good restoration is the mark of a good workmanship.

#### [...] in Usa

The practice of historic preservation in the United States is guided by the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards). The Standards include four approaches to the treatment of historic properties: Restoration, Preservation, Rehabilitation, Restoration and Reconstruction. The following descriptions are based on the current Standards, which were revised in 2017. Restoration is the approach recommended when the goal is to depict the property as it existed at the point in time when it was at its most significant. Treatments under this approach may include the reconstruction of missing historic and the removal of materials and/or features from other points in time. Preservation is the approach used when the objective is to preserve the building as it currently exists. This treatment approach includes the retention of historic materials and features but also later changes and additions. In this approach, deteriorated historic materials would be repaired or conserved as much as possible rather than be replaced. Rehabilitation is the most common approach for historic buildings in the United States, especially is the property is being adaptively reused. Unlike Restoration and Preservation, Rehabilitation can include repair, alterations, and additions while preserving the historic character of the historic property. This approach allows for the most flexi

Reconstruction is only recommended when there is enough documentary evidence to ac-



Paola Boarin

#### [...] for Green Building Council - Historic Building Protocol

curately rebuild a historic property that is no longer extant.

Both the Sustainable Development Goals and the Paris Agreement recognise the strategic role of cultural heritage in guiding the built environment toward resilience and sustainability outcomes. This was recently strongly supported by the International Council of Monuments and Sites (ICOMOS) who highlighted that "[c]limate change multiplies not only threats but also the urgency of enhancing good conservation practice". To respond to this urgent need, conservationists and those operating in the building sector should seek to make heritage practices more holistic and interdisciplinary, in the attempt of a concerted global effort to creating new approaches to heritage and existing buildings that respond to the unprecedented risk to our cultural heritage. Re-interpreting restoration, intended as the "methodological moment in which a work of art is appreciated in its material form and its historical and aesthetic duality for its transmission to the future", in light of climate change and sustainable development requires an effort towards the combination of environmental, economic, social and cultural values, and tools to support this effort in its wide implementation in the built environment. GBC Historic Building® (Green Building Council, 2014) is the first and only voluntary and third-party assessment and certification tool developed to address the issues of the integration between environmental, energy efficiency and indoor environmental quality objectives within the restoration process. The tool's aim is to support and guide stakeholders in the achievement of conscious and sustainable restoration processes that will allow a historic building to remain a source of cultural identity while meeting today's needs and contribute to the fight to climate change.

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### Leonardo ADAPTIVE REUSE AND RESTORATION OF NASELLI CRISPI PALACE IN FERRARA

The undergoing restoration of the Naselli-Crispi Palace, together with C.I.M.S. s.c.r.l., is part of a wider conservative rehabilitation and restoration framework undertaken by Leonardo Srl after the heart quake that hit Emilia-Romagna in 2012.

#### HISTORICAL BACKGROUND.

The compound was built around the 1530 by Girolamo da Carpi. The current building is a result of several additions and its decorations reflect the artistic style of different centuries. An extraordinary stratification can be seen both from the outdoor masonry and from the structural and decorative palimpsest of the indoor. Important adaptations were undertaken in 1920 by the Water Cooperative, the actual owner. Among these it is relevant to mention the demolition of the original monumental staircase and the creation of a new building on the North side.

Following the earthquake of 2012, further restoration works of the facades and some interior rooms of the original building have been undertaken.







#### STATE OF CONSERVATION.

The main facade, the interior courtyard of the original building and the facades of the 20<sup>th</sup> century building are made of brick wall decorated with architectonic elements made of sandstone, Istria stone and stucco. These surfaces are characterized by soiling, discoloration, detachments, cracks and brick erosion.

In the interior, the restoration work will take place in the rooms within the original building, belonging to the renovation works of the late 19th century beginning of the 20<sup>th</sup> century. The rooms are characterized by decorated vaulted ceilings made with a masonry or "incannicciato" (river canes) structure. The deterioration relates to the damages of the earthquake, like detachment of decorated plaster, cracks and structural impairment of the vaults.

#### **RESTORATION INTERVENTIONS.**

On the external surfaces, the first intervention will be the pre-consolidation where peeling and scaling occur, followed by a mechanical cleaning of the soiling and a reinforcement with pins and resin. The sandstones of the courtyard are treated with ethyl silicate, while the decorated bricks with nanosilica, aiming at fixing the color of the architectural elements of the last restoration (end of 20<sup>th</sup> century). The irrecoverable sandstone elements will be replaced with other elements with the same material and shape.

In the interior rooms, the intervention is divided into safety measures for the elements at risk of detachment, acting with bandaging and pre-consolidation, and a restoration with cleaning, consolidation, filling and actual restoration.

The monumental staircase, the President room and the Council room, have problems related to plaster fall from the "incannicciato" ceiling. The consolidation will take place on the extrados with a steel net and plaster mortar to fix the vault at the supporting beam. In case of plaster detachment, a consolidation with a mixture of plaster and adhesives will be

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undertaken. In case of impossibility to access the extrados, the structure will be identified and a consolidation with pins and resin will be done. After the reinforcement, the surfaces will be cleaned, filled with plaster or stucco and decorated.

During the restoration work, it has been possible to discover the structure of the palace as it was before the renovation works of the end of 19th century. Stratigraphic analyzes have pointed out stratifications and decorations dated on three macro-period of activity, from the 16th to the 19th century.

The only evidence of the former staircase is the structure of the masonry vaulted ceiling which cannot be seen from behind because a countertop in river canes built during the 20th century. The vault is decorated with fake lacunars in the tones of gray-light blue and corners decorated with medallions.

The most ancient decoration of the palace (dated 16<sup>th</sup> century) with a polychrome decoration is the one found in the adjacent room, that can be seen solely from the extrados. The decoration may be part of a painted coffered ceiling, whose wooden structure has been reused for the construction of the actual vaulted ceiling. In this vault polychrome decorations can be seen, and the stylistic morphology leads to the hypothesis that the structure can be dated between the 17th/18th century. The most recent decorations of the 19th century consist in finishing layers of the masonry vault characterized by a polychrome phytomorphic decoration.

Because of these relevant discoveries, in accordance with the Archeological Superintendence of Ferrara, it has been decided to uncover part of these decorations characterized by remarkable artistic features.

The masonry countertop of the former staircase and the adjacent room will be demolished to free the previous decorations. In the room where a more complex palimpsest is evident, the decorative stratification will be respected and shown, and a restoration intervention will be undertaken.

BINARIO LAB www.binariolab.it

### THE RESTORATION OF PALAZZO GULINELLI, FERRARA

Palazzo Gulinelli, owned by the Opera DonCipriano Canonici Mattei Foundation, is located in Ferrara in C.so Ercole I d'Este 15. The building was seriously damaged from the seismic events of 2012 that involved Emilia Romagna region. This calamitous event was the reason for the property to deal with the eco-friendly restoration of the palace.

The building has a walkable area of 3,835 square meters, divided over 3 floors, with attached historic garden of about 10,000 square meters. It hosts the spaces of the peer school Smiling, as well as the headquarters of the Canonici Mattei Foundation.

The restoration project has been developed by BIM integrated design to guarantee a greater efficiency and better time control (especially during the work site) and the appropriate tool for future maintenance to be delivered to the site. The outline was made through laser scanner technology, with the creation of a point cloud. Subsequently, the three-dimensional model was processed and set up a project database were required to get to the drafting of the project. The restoration project has, in fact, payed attention to all the details, features elements and materials of the building from a diagnostic point of view. The model has also allowed to add some information about the maintenance and management of the elements, which have been delivered to the client at the end of the work.



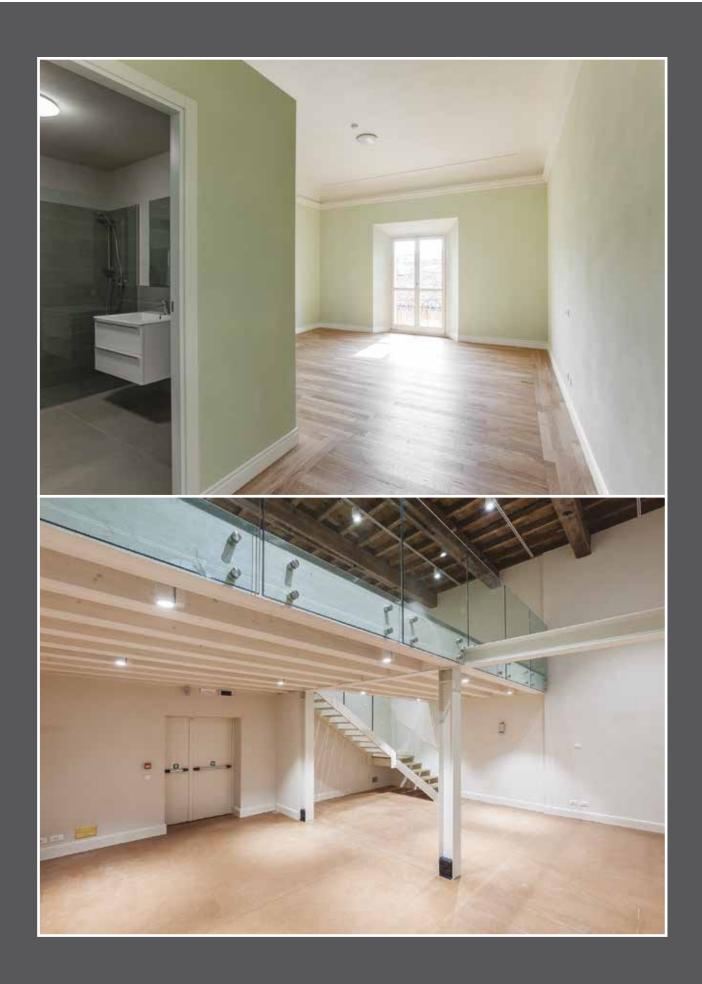
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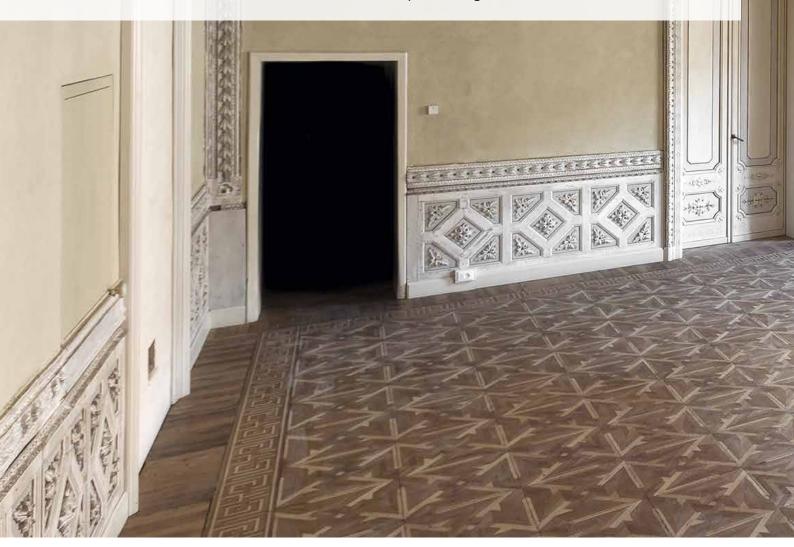
The aim of the restoration project was to better combine the use of the property, interventions for seismic adaptation and modern technologies with the historical characteristics of the building and the enhancement of its peculiarities. The everything has been carried out with an eco-sustainability perspective, including to ensure that occupants of the school an environment as healthy and safe as possible.

Structurally, existing foundations, historical vaults and floors have been consolidated of the whole building. Numerous interventions have been carried out on the masonry, operating by sewing-unsewing. The floor of the heavy structure, dating back to the 1950s, has been replaced from a lightweight XLAM wooden structure, with a green roof that can be trampled. Above this, a terrace designed as a hanging garden has been set up.

Natural materials were used, with dry laying systems, and it was predicted, reuse of material already present in the original factory where possible.

Palazzo Gulinelli has been reopened as a state-of-the-art school in autumn 2018. The criteria eco-friendly and sustainability that drove the project, made the building eligible to apply for the prestigious GBC Historic Building international certification.

The Green Building Council Italy (GBC Italia) aims to adapt to Italian and promote the independent LEED (Leadership in Energy) certification system Environmental Design), whose parameters set precise design criteria and construction of healthy, energy-efficient and a contained environmental-impact buildings.



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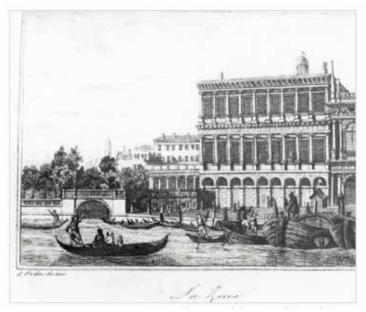
# THE RESTORATION OF THE IRON BRIDGE "PONTE DELLA ZECCA" IN VENICE

The urban area including the Zecca bridge, located on the homonymous canal, is characterized by the adjacent "Palazzo della Zecca", by the gardens and royal shores and by the San Marco basin. The urban transformation into the current structure derives from the Napoleonic Decree of the 11th January 1807 with declared the "Procuratie Nuove" building as Palace of the Crown, while the entire area, until then occupied by the ancient Granaries of "Terra Nova", was designated to the new Royal Gardens.

The layout of the area in the second decade of the 1800s is clearly represented by the planimetry published in the first volume of the Cicognara <sup>(1)</sup>, in which the Zecca bridge is depicted with the belvedere and the adjacent greenhouse. It is probable that the greenhouse is now the headquarters of the "Compagnia della Vela" and the opposite terrace is nothing but the monumental portion of the belvedere itself. A similar result emerges from the plans of the Austrian land registry and the city plan of the Combatti of 1846.

Since the public notice of the Municipal Congregation of Venice, on the 23<sup>rd</sup> of August 1857, the avenue of the garden that runs along the San Marco basin was placed in communication with the Piazzetta and opened for public use, at the behest of the Archduke Ferdinand Massimiliano.

The declaration of public use was again ratified after the entry of Venice into the Kingdom of Italy in 1867 and it was precisely the need to guarantee the connection with the Piazzetta that motivated the construction of the new iron bridge. The new bridge, built by







the Neville foundry, was thus inaugurated in 1872.

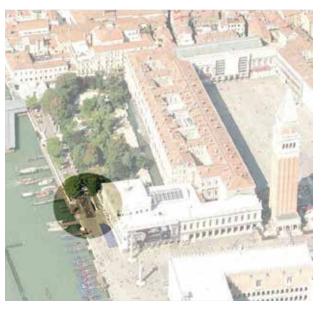
The tree plantings on the avenue on the front of the basin, delimited by the neoclassical Pavilion, the Cafehaus, were replaced several times due to the poor health of the arboreal essences. At first a row of "acacia ombrellifera", then replaced by trees of Tilia Europea and finally with plants of Robinia Bessoniana. Under the patrimonial point of view, the Zecca is regulated by a Concession of the Municipality of Venice (2) which assigns in use to the Local Authority part of the Royal Palace and the Royal Gardens, including the avenue in front of the Pier, so that the Municipality could use them for the issued purposes.

On the 16<sup>th</sup> of March 2018, the State Property Management started the implementation project for the restoration of the Bridge.

The Zecca Bridge is characterized by a metal structure built at the end of the 19<sup>th</sup> century; it consists of elements in gray lamellar cast iron or "steel cast iron", produced from the fusion of cast iron and steel scrap, with the addition of graphitizing elements. This type of material was very common and used at the time of the construction of the bridge due to its easy workability and low fusion temperature. It could however easily present defects generated during the manufacturing process, such as to expose the material to sudden breakages. In addition, the high carbon content and the quantity of silicon placed in irregular lamellas give the material a high fragility and a difficult weldability.

The main load-bearing structure, made up of cast iron balusters supported by piles and cement basements, and the 6 tripartite trusses have a state of absolute degradation due to

<sup>(2)</sup> Signed on 07/16/1921 by the State Property Office and the Municipality of Venice rep. n. 357 in implementation of Presidential Decree n. 13548 of 23.12.1920. With deed rep. n. 2192 of 08.12.1921 the assets covered by the above agreement were delivered to the Municipality of Venice, including the Zecca Bridge





<sup>(1)</sup> Cicognara, Diedo e Selva "Le fabbriche e i monumenti cospicui di Venezia" 1815-1820

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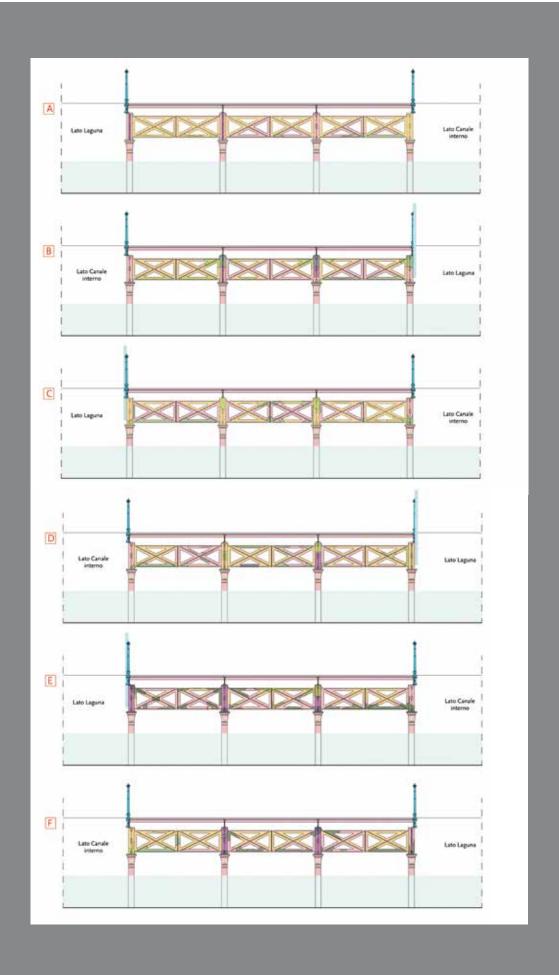


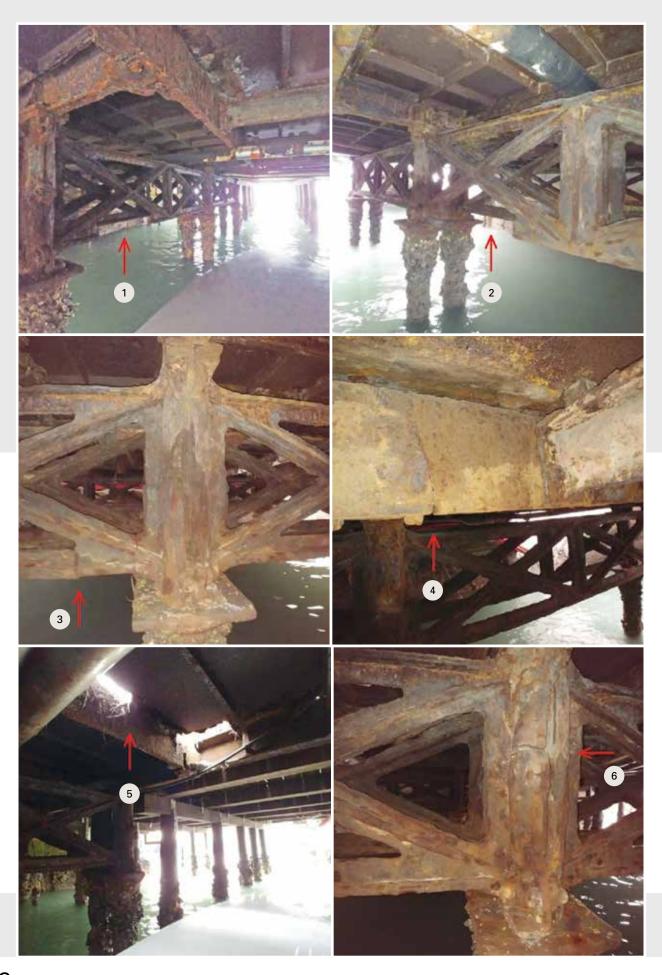
the widespread corrosion on all the elements, due to oxidation and to the effect of periodic leaching, caused by sea water.

The elements constituting the ends of the trusses, platform, bolts, columns, support brackets, at the top of the supporting columns, have been rendered almost unrecognizable by the swellings, the oxidations, the flaking, the abrasion produced by the wave motion. Some metal profiles, due to the deterioration, mainly corrosion and exfoliation, have undergone a physical decay of their technological characteristics. This means that, several structural elements of the bridge, due to the reduced cross-section, caused by the detachment of the superficial subparallel layers, no longer have a constant and reliable thickness over the entire length. This variability, combined with the characteristic low ductility of the cast iron, irreparably invalidates the original structure which becomes substantially unsuitable for its structural function due to the decay of its the physical characteristics and the loss of the minimal required sections. Some preliminary tests clarified that, in the event of a radical cleaning operation, the risk is the complete loss of significant parts of the structure.

The main purpose of the restoration is to remove the existing temporary walkway, restor-

<sup>(3)</sup> In Venice, the passage that runs along a river or canal at the foot of the buildings.







ing the original path at the floor level of the "fondamenta" (3), keeping the original cast iron structures in situ with the function of historical evidence.

Since there is no longer the need to raise the central part of the bridge, as for the historic bridge, the new one will be pedestrian with a single span supported by the creation of a new foundational system with a concrete curb and diving piles. Essentially, the area previously occupied by the secondary structure made of iron and cast iron, about 37cm in thickness, is used to create a new system of special steel beams, HEB type, able to withstand, on the span of almost 11 meters, the permanent and accidental loads of a pedestrian bridge, category 3.

The historic parapet will be entirely restored with the integration of the missing or unrecoverable parts. However, at a static and safety level, the parapet presents two critical aspects, according the local current legislation:

- 1. Insufficient height (1.10cm)
- 2. Inadequate resistance as required for a pedestrian walkway of the same category. In order to integrate the decorative structure of the historic parapet without substitutions, the project designs a counter-parapet with new metal profiles, placed at such heights to allow compliance with the norm and the minimum visual interference with the original artifact. The combination of the two structures, historical and modern, allows to satisfy the requirements of the local legislation.

Fig 01-02.
Degradation Phenomena:
Loss – complete lacking of
the lower part of the iron
beam

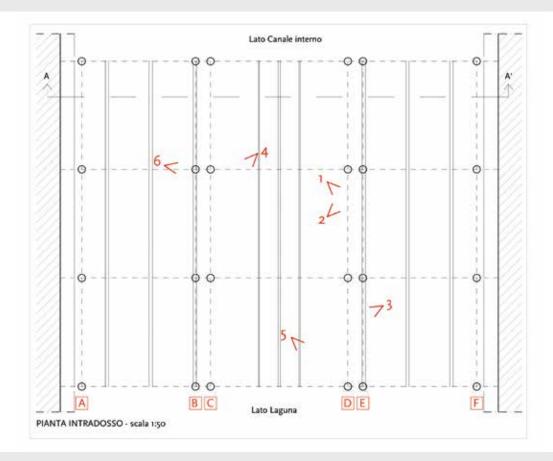
Fig O3. Degradation: Cracking or Splitting: splitting with the reciprocal movement of the parts

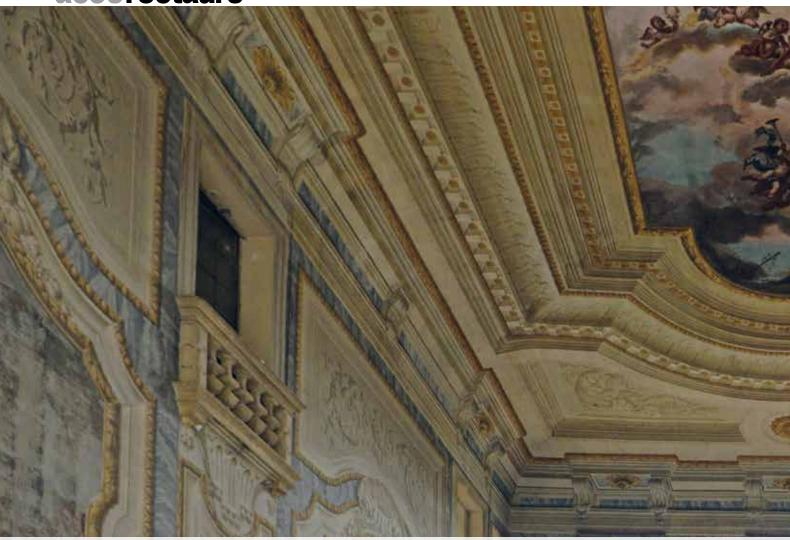
Fig O4. Degradation Phenomena: Loss: lacking of part of the iron shield

Fig O5. Degradation Phenomena: Deformation, Bowing. Bowing with the loss of part of the material

Fig O6. Swell degradation. Expansion and loss of material

Standard UNI 11182 : 2006 Cultural Heritage - Natural and artificial stone description of the alteration - terminology and definition:









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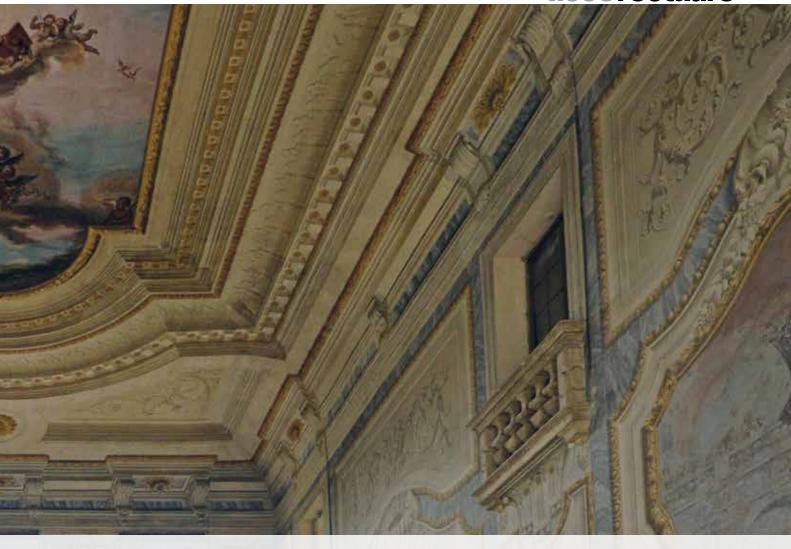
# VILLA GIOVANELLI IN NOVENTA PADOVANA. THE CONSERVATIVE RESTORATION OF THE CENTRAL SALON

Villa Giovanelli of Noventa Padovana is the last of the great villas of the Brenta canal, on the route between Venice and Padua. Of great impact for its monumental appearance and its imposing size, its construction dates back to the 17th century, at the behest of Giovanni Paolo and Giovanni Benedetto Giovanelli and designed by Antonio Gaspari, known in the Venetian environment as a pupil and continuator of Baldassarre Longhena.

The date of the construction of the villa dates back to 1668, the year in which the Giovanellis, wealthy Bergamo merchants, ascended to the Venetian aristocracy with the donation of a large sum of money in support of the Republic, economically proved by the wars against the Turks.

The main body has a rectangular plan, of about 45x20 meters, with a tripartite layout with a passing central hall (portego), modeled on the Venetian palace. In height the building

# assorestauro°



develops for about 27 meters. In the central part the building is on two levels, of which the upper one has a double height; in the side wings instead it develops on three levels.

The octagonal avant-corps, with the monumental colonnade and the tympanum, inspired from the classical temple, corresponds for width and height, to the central part of the portego.

The first layout of the villa did not include the monumental staircase, which was added in the early decades of the eighteenth century.

The rich interior decoration party, characterized by stuccoes, frescoes, wall paintings and canvases, was done in the first half of the eighteenth century. The first works consisted on a fresco squares of the hall, entrusted to the Bolognese artist Ferdinando Fochi in the spring of the 1700s, which echo longhenian architectural motifs. This circumstance, which reinforces the unified vision of architecture and its decorative cycle, suggests once again a design direction by Gaspari extended to all the components of the building. The decorations of the hall were completed only in 1747, with episodes of Roman history, by Giuseppe Angeli. At the beginning of the eighteenth century the fine stucco decorations can be ascribed, which are certainly among the most valuable works present in the villa. Among the works that adorn the villa, we must remember the four large wall paintings, placed in the

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two main rooms on the sides of the central hall, by Sebastiano Ricci and Antonio Pellegrini. In the nineteenth century began the decline of the villa, whose history was marked by some changes of ownership and various vicissitudes. The events of the 20th century were rather troubled. During the First World War it was the seat of the command of several armies, while during the Second World War it was occupied by the German command, then by the allied one, therefore it was the seat of the refugees of the bombings of Padua and military hospital of the Red Cross. In 1954 it was bought by the Friars Minor Conventuals of Sant'Antonio, who used it as an orphanage.

#### THE CONSERVATIVE RESTORATION PROJECT

The restoration project of Villa Giovanelli includes, in addition to the restoration of the external facades and interior decorated surfaces, building, structural and plant works including: consolidation work on the wooden roofing and floor structures, review of the roof covering, restoration of fixtures, structural consolidation of foundations, construction of services and facilities.

The intervention described below, related to the consolidation of the decorated plaster and the re-fitting with chromatic integration of the pictorial films, is part of this complex and wide executive project realized by Ing. Gianni Breda of W.E.I 'N VENICE s.r.l. and by the Arch. Claudio Menichelli.



### EXECUTIVE TECHNIQUES FOR THE CONSERVATIVE RESTORATION OF DECORATED PLASTERS

The central hall on the noble floor, characterized by a decorative apparatus of eighteenth-century origin, hosted the conservative restoration intervention on plaster and pictorial films.

The state of conservation of the surfaces was diversified and critical. Following close surveys and surface beating, it was possible to carry out a targeted and descriptive mapping of the various forms of degradation. In particular, various forms of plaster detachment have been detected: of a deep type, both punctual and widespread, of a milder type and limited as they are the subject of previous interventions.

The nature of the deep detachment has been identified in the inconsistency of the layer of material present between masonry and plaster. This condition was found both in the form of "pockets", particularly deep and localized punctual detachments, and widespread. The first case, mainly close to external doors and windows, was treated intervening through shoring and consolidating injections of fluid mortar specific for the re-adhesion of decorated plaster, based on natural limes, selected aggregates and without salts.

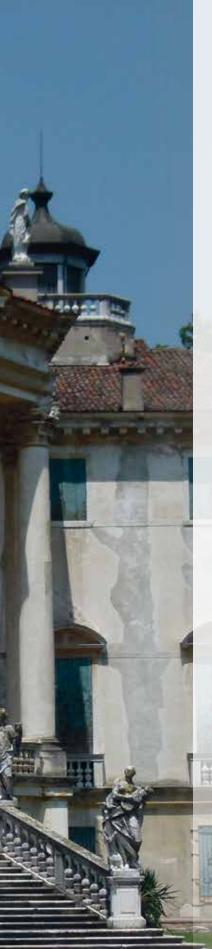
As for the widespread detachment of decorated plaster, it was possible to identify some areas subject to previous interventions aimed at containing the phenomenon. In particular, a thick mesh of nails had been applied above the interior doors, which now appeared to be oxidized and unstable. In this circumstance, considered risky for the integrity of the surfaces the removal of the nails, a fixing operation was performed by bandaging with Japanese acrylic resin paper diluted in water.

With the remaining surfaces of the hall, affected by widespread phenomena of posting but not subjected to previous consolidation, a specific intervention was developed. Here the possibility of intervening punctually through the traditional injections of mortar was excluded and a system aimed at re-establishing the re-adhesion of the plaster to the masonry support was studied, in collaboration with the Superintendency and Scientific Committee , in order to keep the plasticity of the material unchanged, thus avoiding the differential stiffening of the surfaces.





## assorestauro°



A process was then carried out consisting in the execution of a strand of basalt fiber strands, in a number equal to three per square meter of surface. Each connector was made with a diameter of 3 mm and inserted inside the walls, for a variable length of 5-7 cm depending on the depth of the detachment identified area by area. Once the hole has been made, cleaned with alcohol diluted in water, the incoherent material surrounding it has been consolidated by applying acrylic resin diluted in water. The strands, cut to size, were then waxed, positioned and "touched in the thickness of the existing plasterboard. Finally we proceeded to fix the connectors with injections of specific fluid mortar, based on natural limes, selected aggregates and free from salts.

The intervention phase was preceded by an off-site sampling, to test the actual tightness of the system and determine the methodological phases of the intervention in detail.

Similarly to the plaster, also the pictorial film showed serious degradation phenomena with non-cohesion and significant loss of material, design and original colors. This refers particularly to the four large paintings with "scenes of Roman history" by Angeli, which adorn the walls of the hall. It was certainly the decorated surfaces affected by the most serious forms of degradation. The technique, currently under study, did not resist the passage of time and the effects of heating with traditional radiators, placed immediately below the paintings. The intervention to be performed had therefore to restore cohesion to the pictorial film and give a unity of reading to the images.

Preliminary to the formulation of an adequate design hypothesis, the pictorial surface was subjected to laboratory analysis, which identified the presence of calcium stearate, stearic acid salt. This substance, often used on elastomers, could have come from previous interventions aimed at preserving surfaces. The painted surface thus treated now appeared stiff, fragile and severely decayed.

It was therefore decided to intervene, in the first phase, by reducing the rigidity of the pictorial film, and then allowing its subsequent fixing. A thermocautery was first used to reactivate the substance recovered and to soften the pictorial film, later fixed with very low percentage resin and Japanese paper.

Parallel to the problematic of material re-establishment, was studied the theme of chromatic integration aimed at reconstituting the unity of the images.

The reconfiguration started with the study of some sketches by Guardi, which depicted scenes very similar to those undergoing intervention. Through the critical analysis of the documentation, the representations were then reconstructed. In this way the chromatic integration, with subdued glazes, was carried out following a trace based on in-depth preliminary studies and samples.



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updating from research conducted by well qualified professors, researchers and skilled technicians,

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zioni tecniche afferenti opere ed interventi di nuova edificazione, restauro, riadeguamento, risanamento, ristrutturazione e riutilizzo funzionale di complessi monumentali, civili, pubblici, A fronte di una esperienza operativa pluriennale, lo studio si é specializzato, nelle prestaqualificati, regolarmente iscritti ai rispettivi Ordini o Collegi di appartenenza.

reuse of pre-existing ones. of new buildings as well as restoration, adaptation, improvement, renovation and functional of design and technical documentation. The expertise in this area covers both the initiation registered with the respective professional bodies. Thanks to the long time experience accumulated, CGA specializes in the all types of professional duties required for the preparation Studio Associato di Architettura Carafa e Guadagno (CGA) operates in the technical and design field, with a strong focus on the restoration area. The architecture firm is supported by a number of professional services provided by qualified technicians, who are legitimately



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#### **CARAFA E GUADAGNO** STUDIO ASSOCIATO DI ARCHITETTURA

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ti.oradil@oibutzago



#### ANNO DI FONDAZIONE: 1981

The company Berlucchi srl was established in December 1981 by the brothers Francesco and oltre che dai due soci, da un gruppo di nove collaboratori tra Ingegneri, architetti e geometri. Restauro. Lo Studio Tecnico della Società Berlucchi può contare su un organico composto, Berlucchi proseguendo l'attività professionale del padre Ing. Antonio. Oggi, la Società si occupa di Progettazione e Restauro e si suddivide in 2 settori distinti. L'Ing. Roberto Berlucchi è responsabile del settore Progettazione, mentre il figlio, Ing. Nicola Berlucchi coordina il settore La Società Berlucchi srl venne costituita nel dicembre 1981 dai Fratelli Francesco e Roberto

partner engineers and nine employees (engineers, architects and technicians). erto Berlucchi is responsible of the Designing division, meanwhile his son, Eng. Nicola Berlucchi is responsible of the Restoration division. The designing team is composed by two senior company works on new buildings and on restorations and is divided in two sections: Eng. Rob-Roberto Berlucchi, carrying on the professional activity of their father Eng. Antonio. Today, the

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tancy for the different professionals involved in conservation both in private and public sec-

SILTEA provides also services of diagnostic analysis, scientific-technical support and consul-

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sulenza alle diverse professionalità legate alla conservazione, sia nel settore pubblico che SILTEA fornisce inoltre servizi di analisi diagnostiche, di supporto tecnico-scientifico e di con-

silice basati su tecnologia sol-gel per la protezione di superfici, messi a punto per lo specifico SILTEA è specializzata nello sviluppo, nella produzione e nella fornitura di nanomateriali in

work must be an actual resource for the area in which it takes place and for this we always

We create value in the territory in which we operate. This is our mission. Because our every

increasingly more specic technological know how and experience, so that it may now be con-

over the years thanks to constant and ongoing growth, which has enabled the firm to acquire SETTEN GENESIO is a contractor that has gained a particular reputation in the building sector

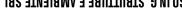
opera deve essere una risorsa reale per il territorio nel quale s'inserisce e per fare questo co-Creiamo valore nel territorio in cui operiamo. Questa è la nostra mission. Perché ogni nostra

rienze e conoscenze tecnologiche sempre più specifiche e che le permette di potersi definire dell'edilizia, grazie ad una crescita costante ancora in essere, che le ha fatto acquisire espe-SETTEN GENESIO è un'impresa che col tempo ha acquistato un valore particolare nel settore

tection, created for the specific requirements of cultural heritage preservation.

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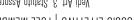
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MULIOZ IO ODITZICO AMENTE: il SISTEMA OLISTICO DI SOLUMI un'arte complessa, interessante ma anche divertente che richiede un approccio integrato e i danni provocati dall'umidità di risalita (Sali): riuscirci in maniera EFFICACE E DURATURA è del risanamento di edifici monumentali o residenziali prevenendo e curando specialmente Gli operatori di SOLUZIONI PER L'UMIDITA'- SOLUMI, lavorano da oltre 15 anni nel campo

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CERTIFICAZIONI: Ambientali: ANAB / ICEA - Natureplus

OHZYZ 18001: 5004

CEBTIFICAZIONI: 1SO 14001/2008

CERTIFICAZIONI: 1SO 14001/2004

Risanamento, restauro con un'attenzione costante per la bioedilizia, pitture, rivestimenti e sistemi di isolamento termico per esterni. Calcestruzzi, massetti e fondi di posa. FILIALI: Parcines (BZ), Prevalle (BS), Comabbio (BA), Villanova (CN), Fontanafredda (PV)

mal insulation systems for exteriors. Concrete, footing and foundations. Repairs and restoration (with constant attention to bio-building, paints, coverings and ther-



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artistiche e stucchi, combinando tecniche nuove e conoscenze antiche nel nuovo colore del SANSONE S.r.l. si propone come una solida realtà in grado di offrire un servizio del massimo spessore professionale per la realizzazione di restauri, pitture e decorazioni, pavimentazioni

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ted to restore to their original splendour the most prestigious buildings in Venice and some of the most important monuments in Italy, Great care has also been given to projects in other

its core business: conservative restoration. Over the last decades, the company has commit-

Soon after it was established in 1920, SACAIM started to excel in what was meant to become rigue, ed acquedottistiche, oltre che una forte presenza nell'edilizia civile e nelle infrastrutture. ridato splendore ai più prestigiosi palazzi di Venezia e riportato all'originale bellezza alcuni tra i più importanti monumenti in Italia. Attenzione particolare anche per le opere marittime, ir-

attività caratterizzante: il restauro conservativo. Nel corso dei decenni i suoi interventi hanno Fondata nel 1920, SACAIM si è distinta fin da subito in quella che poi sarebbe diventata la sua

SANSONE S.r.l. presents itself as a stable reality which can offer the highest professional

quality service for restorations, paintings and decorations, artistic flooring and stucco work, combining new techniques and traditional knowledge in the new color of time.



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#### **ANNO DI FONDAZIONE: 1998**

and infrastructures.

direzione lavori, sia in Italia che all'estero. Altre aree di competenza: progettazione del pae-saggio, riqualificazione aree urbane, progetti per il Fund Raising. tempi, e lo studio si avvale di collaboratori esperti e affidabili. Progettazione architettonica e nella valorizzazione di immobili di pregio, sia pubblici che privati. Ogni progetto è eseguito con la massima professionalità al fine di restituire i manufatti antichi all'uso contemporaneo salvaguardandone gli elementi originali. Il metodo di lavoro mira a qualità a al rispetto dei Marco Paolo Servalli ARCHITETTURA, specializzato nel restauro di edifici storici e di culto e

areas of expertise include: landscape design, urban regeneration, and fund raising projects. carry out architectural design and construction supervision, both in Italy and abroad. Other on quality and on timeliness, and the firm avails itself of expert and reliable collaborators. We buildings and the enhancement of prestigious properties, both public and private. Each project is executed with the utmost professionalism in order to restore the historic building to contemporary use while preserving original characteristics. Our working method is focused Marco Paolo Servalli ARCHITECTURE, specialized in the restoration of historic and religious



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**CERTIFICAZIONI:** Certificazione DNV per il sistema di gestione di qualità aziendale ISO 9001-2008

Pimar S.r.l. nasce nel 1994 come naturale continuazione dell'attività della famiglia Marrocco nel settore della pietra leccese, che affonda le radici nel secolo scorso. Il know-how aziendale maturato è assai re della pietra leccese, che affonda le radici nel secolo scorso. Il know-how aziendale del Tobanni. Gli attuali vertici aziendali, i fratelli Giuseppe, Giorgia e Daniele Marelevato e si tramanda da 150 anni. Gli attuale presidente, hanno sviluppato ed innovato l'azienda, sempicoco, insieme al padre Salvatore, attuale presidente, hanno sviluppato ed innovato l'azienda, scempicosi colli riscespna della ricerca, sperimentazione, progettazione e comunicazione, dedicano riscorseconomistico della ricerca sperimentale progettazione della ricerca sperimentale per valorizzare quella che si può proprio definire una "pietra di famiglia" affinché possa contingenta in sempre più esigenza architettonica ed essere impiegata in sempre più numerosi finnare a soddisfigre al meglio ogni esigenza architettonica ed essere impiegata in sempre più numerosi en proprio della comi organizza della comi contra controli contra c

Pimar S.r.L was born in 1994 as a natural continuation of the Marrocco family's activity in the field of the natural stone from Lecce, which has its roots in the past century. The company gained know-how isvery high and has been handing down for 150 years. The present company leaders, the brothers cluseppe, Glorgia and Dainele Marrocco, together with their father Salvatore, who is the current president, have Glorgia and Dainele Marrocco, together with their father Salvatore, who is the current president, have commany, always characterized by research, experimentation, planning and communication. They allocate financial and personal resources in order to give value to what can be readmunication. They allocate financial and personal resources in order to give value to what can be readmunication.

ANNO DI FONDAZIONE: 1982

**CEBLIEICYZIONI:** I2O 600J:50J2\ I2OJ400J:50O4\ I2OJ800J:5000

La PLANARCH S.r.L è una società privata d'ingegneria creata originariamente nel 1971 come "Studio Martuscelli" e divenuta Società a responsabilità limitata nel 1982. La PLANARCH ha più di 35 anni di esperienza di lavoro con Governi, Pubbliche Amministrazioni e Società Private soprattutto nel campo dei Lavori Pubblici, sia come responsabile della progettazione che della direzione dei lavori. Dal 1994 la PLANARCH ha più direzione dei lavori. Dal 1994 la PLANARCH ha più come responsabile della progettazione che della direzione dei lavori. Dal 1994 la PLANARCH ha più direzione dei lavori. Dal 1994 la PLANARCH programa in diversi paesi esteri tra cui Albania, Etiopia, Kosovo, Libano, Palestina, Repubblica Dominicana, Romania, Russia, Serbia e Venezuela.

assignments in foreign countries, as Albania, Ethiopia, Dominican Republic, Kosovo, Lebanon, Palestine, Romania, Russia, Serbia and Venezuela as responsible for design and construction management. From 1994 PLANARCH started to carry out PLANARCH S.r.l. is a private consulting engineering firm that was created originally in T97 as "Studio Martures and has become a limited liability company in 1982. PLANARCH has more than 35 years of experience in working with Government, Public and Private Agencies particularly in the field of public works,



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ANNO DI FONDAZIONE: 1998

CERTIFICAZIONI: ISO 9001 - SICERT SGS

murarie e opere lignee-deumidificazione e impermeabilizzazione di strutture murarie. Restauro di intonaci policromi e di decorazioni-materiali lapidei-consolidamenti strutture

structures-repairs, dehumidification and waterproofing walls. Restoration of polychrome plasters and decorations-stones-consolidation of wall and wood

#### CERTIFICAZIONI: OS 2-A

alla fine dei lavori. zione ed inquadramento territoriale, pertanto necessita di intervento mirato. Particolare attenzione è inoltre da noi posta alla redazione del libretto manutentivo del bene, consegnato al committente edile generica. Ogni edifico, palazzo, casa, monumento ha caratteristiche diverse per tipo di costru-Siamo un'impresa storica impegnata nel restauro conservativo di immobili sotto tutela della Soprintendenza Archeologica Belle Arti e Paesaggio su tutto il territorio nazionale. Effettuiamo qualsiasi indagine diagnostica e conduciamo il restauro conservativo ai più alti livelli d'eccellenza anche su grandi superifici. Con il medesimo approccio scientifico, interveniamo su edifici moderni conservativo al ma conservazione temporale fino a tre volte rispetto ad una operazione consentendo all'edificio na conservazione temporale fino a tre volte rispetto ad una operazione. Osni edifici palazzo esa monumento pa catalera diverse nei fino di costru-

erty that we provide the client at the end of work. measures. Furthermore we pay specific attention to writing the maintenance booklet of the proppared to a generic construction approach. As each building, palace, house, monument has different characteristics according to the type of construction and terriporial framework, it requires targeted approach with modern buildings to obtain a temporal conservation up to three times more comprotection of the Superintendent Fine Arts all over the national territory. We use the same scientific Riva is an historical company that works in the preserving restoration of properties subjected to





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#### CERTIFICAZIONI: 1SO 9001:2008

del restauro strutturale. 900]:2008 Collabora con uno staff altamente specializzato, con strutture d'eccellenza nei settori della diagnostica, con uno studio di ingegneria con particolare esperienza nel campo del campo settori della diagnostica, con uno studio di ingegneria con particolare esperienza nel campo del campo settori della diagnostica, con uno studio di ingegneria con particolare esperienza nel campo pinti e dorati è certificata SOA cat. OSZ-A class. IV BIS e Cat. OGZ class. III BIS e UNI EN ISO Dipinti murali; Paramenti in marmo, stucco e laterizio; Intonaci antichi; Manufatti lignei di-La MARMIROLI S.r.l., svolge da 40 anni restauro conservativo e strutturale di beni artistici:

field of structural restoration. lence in the areas of diagnostics, with an engineering study with particular experience in the UNI EN ISO 9007: 2008 Collaborates with a highly specialized staff, with structures of excelgoods: Painted murals; Paraments marble, putty and brick; Old plaster; Painted and golden wooden artefacts. It is certified SOA category OS2-A class. IV and category OG2 class. III and The MARMIROLI Srl, performs for 40 years and structural conservative restoration of artistic



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O

#### **CERTIFICAZIONI:** UNI EN ISO 9001:2008

gestione, un passato illustre e giovani professionalità si confrontano con le problematiche del restauro e della conservazione del patrimonio storico-artistico. vate. Oggi MINERVA RESTAURI rappresenta una realtà aziendale rinnovata, dove una nuova recupero e sul restauro tale da costituire un adeguato profilo per Enti Pubblici e strutture pri-Da circa 30 anni MINERVA RESTAURI si occupa di Restauro Architettonico e archeologico dei Beni Culturali di grande valore storico-artistico. Da Palazzo Reale di Napoli fino al restauro e al recupero delle Insulae di Pompei; MINERVA RESTAURI compie negli anni un arricchimento sul recupero delle Insulae di Pompei; MINERVA RESTAURI compie negli anni un arricchimento sul

profile for public bodies and private companies. the years an enrichment on the recovery and restoration capable to provide an appropriate restoration and the recovery of Insulae of Pompeii, MINERVA RESTAURI has developed over For about 30 years MINERVA RESTAURI has handled Architectural and Archaeological Restoration of historical, artistic and cultural Heritage. From the Royal Palace of Naples up to the



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## ANNO DI FONDAZIONE: 1875

application as the technical drawings provide for.

La Piacenti spa svolge attività di progettazione, conservazione e restauro di beni di interesse storico-ar-CERTIFICAZIONI: ISO 9007:2008, Certificazione SOA: OGO2-classe III-BIS, OSO2A-classe V

e diagnostico. L'azienda possiede i requisiti professionali, economici ed organizzativi che le permettono, autonomamente, l'esecuzione di grandi lavori pubblici e privati. Opera in Italia, Cina, Turchia, Moldova e laboratori, ogni competenza settoriale lavora in sinergia con le altre e viene coordinata dall'ufficio tecnico ceramici, metallici e lapidei. All'interno dell'impresa, che si avvale di attrezzature tecnologiche e di ampi ti lignei policromi, di dipinti su tela e tavola, di stucchi e pitture murali, di reperti archeologici, materiali tístico e monumentale, disponendo di personale altamente specializzato nel trattamento di manufat-

ties, performs static restoration proposals in order to check the seismic risk indicators and the possible kinematic and collapse scenarios. The building site produces artifacts steels or FRM

The computational analysis department develops modelling and structure's analysis activimobile laboratory to distinguish the architectonic element in order to check the restoration. fied technicians. The diagnosis department performs not destructive type analysis with its The company is divided by many departments and offers direct assistance through his qualivalutazione su possibili cinematismi e scenari di collasso. Reparto cantiere e officina esegue installazione di manufatti in acciaio o applicazione di FRM come da elaborati tecnici. to analisi computazionale, svolge attività di modellazione e di analisi delle strutture, esegue proposte di intervento di restauro statico, al fine di valutare gli indicatori di rischio sismico con proposte di intervento di restauro statico, al fine di valutare gli indicatori di rischio si proposte di rischio di rischio si proposte di rischio

al fine di caratterizzare l'elemento architettonico e collaudare l'intervento di restauro. Repar-

parto diagnostica esegue con il proprio laboratorio mobile analisi di carattere non distruttivo L'azienda è suddivisa in più reparti e offre assistenza diretta con i propri tecnici qualificati. Re-

The Piacenti S.p.a. carries out planning and execution activity in the field of cultural heritage restoration and conservation by his high specialized and qualified employees on wooden and polychrome objects, paintings on wood and canvas, stuccoes, wall paintings, artifacts, ceramic metallic and stone materials. Inside the headquarters, geared by technical equipment and wide workshops, every sectorial competence collaborates with the others, coordinated by technical and diagnostic offices. The firm has all professional, economic and organizational requirements which allow, autonomously, to carry out big public and private contracts for restoration and conservation works. It works in Italy, China, Turkey, Moldova, Russia.



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of floor and wall coverings. The company is also specialized in other chemical products for building, from waterproofers to special mortars and admixtures for concrete, products for the restoration of ancient buildings and special wall decorative and protective coating.

in the production of adhesives and complementary products for the installation of all types Mapei Group, 68 subsidiaries with 59 plants in the five continents, is today the world leader

meabilizzanti, malte speciali e additivi per calcestruzzo, prodotti per il recupero degli edifici posa di pavimenti e rivestimenti di ogni tipo e specialista in altri prodotti chimici come impercontinenti, è oggi il maggior produttore mondiale di adesivi e prodotti complementari per la

Il Gruppo Mapei, composto da 68 aziende consociate con 59 stabilimenti operanti nei cinque

the projects from the planning phase to the actual intervention to restore the works of art, restoration experts and conservators, architects and engineers all of whom follow through

it has also made inroads in the field of building works. The company is made up of a team of tion of cultural heritage and the handling of works of arts for more than thirty years; recently, LITHOS has been working in the field of restoration, conservation, cataloguing and consolidachitetti, ingegneri e conservatori esperti che si occupano della progettazione dell'intervento di restauro, sino alla sua effettiva realizzazione e manutenzione.

anni, anche nel campo dei lavori edili. L'azienda è composta da un team di restauratori, arne, consolidamento e della movimentazione di opere d'arte, facendosi strada, negli ultimi LITHOS, opera da più di trent'anni nel campo del restauro, della conservazione, catalogazio-

works on planning, conducting analysis on materials and on state of conservation, and on practice, restoring paintings, frescoes, statues and historical buildings, documenting opera-

Leonardo S.r.l. operates on cultural heritage from diagnostics to restoration. Leonardo is certified in SOA for categories OS2 V and OG2 IV bis, and holds quality, security and environmental fled in SOA for categories OS2 V and OG2 IV bis, and holds quality, security and environmental fled in SOA for categories OS2 V and OG2 IV bis, and holds quality, security and environmental fled in SOA for categories on cultural flower in SOA fl

mi della Qualità (ISO 9001:2008), dell'ambiente (ISO 14001:2015) e della sicurezza (OHSAS 18001:2003). Opera sia nella fase progettuale, effettuando analisi dei materiali e dello stato di conservazione, che nella fase esecutiva, realizzando restauri di beni mobili e immobili, documentazione interventi, monitoraggio operazioni effettuate.

Possiede le certificazioni SOA categoria OSZA V e OGZ IVbis, oltre alle certificazioni dei siste-

FILIALI: Sede del Gruppo: Milano, 68 consociate in 44 paesi, 59 stabilimenti in 28 paesi.

storici, finiture murali speciali.

ANNO DI FONDAZIONE: 1937

ANNO DI FONDAZIONE: 1985

tions, monitoring restorations.

their completion and maintenance.

CERTIFICAZIONI: 1SO 9001, 1SO 14001, OHSAS 18001

**CEBLIEICAZIONI:** ISO 9001:2015/ ISO14001:2004/ ISO18001:2007

Leonardo S.r.l. interviene sui beni culturali dalla diagnosi al restauro.



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**CERTIFICAZIONI:** UNI EN ISO 9001: 2008 ANNO DI FONDAZIONE: 1997

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relazioni con enti pubblici e privati. stesso. Alti standard qualitativi nel rispetto dei tempi di esecuzione hanno caratterizzato le no ogni aspetto dall'analisi dell'opera, l'individuazione di tecniche e materiali, all'intervento ri (CNR) e di laboratori privati. Competenza ed esperienza permettono di affrontare a piediagnostiche con la collaborazione di consulenti scientifici avvalendoci di centri universitalapidei e fittili,intonaci,stucchi,manufatti metallici,dipinti su tela. Eseguiamo campagne ne e restauro di beni artistici e culturali sottoposti a tutela: dipinti murali, affreschi, materiali Kairos Restauri S.n.c. opera nella progettazione e realizzazione dell'intervento di conservazio-

private and public customers. quality standards and compliance with delivery times characterize our relations with both ing the most convenient techniques and materials, executing the work. Commitment to high us successfully deal with all steps of the process, including analysing the artwork, identifytific advisers, university centres (CNR) and private laboratories. Our skills and experience help metal objects, paintings on canvas. We carry out diagnostics with the contribution of scienand cultural heritage, including murals, frescoes, stone and clay artefacts, plasters, stuccoes, Kairos Restauri S.n.c. design and execute conservation and restoration works of listed artistic

di Luca Zappettini & C.

#### DI LUCA ZAPPETTINI & C. KAIROS RESTAURI SUC

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ta, dalle elevatissime prestazioni e sempre conforme alle più recenti normative. zia, isolamento e deumidificazione: una gamma di soluzioni per il restauro e recupero complenaturali, soluzioni per impermeabilizzazioni, pavimentazioni, trattamenti protettivi e di pulilenti, ma non solo... Kimia è anche malte preconfezionate ad alta durabilità, calci idrauliche e vetro, ora anche in acciaio con matrici inorganiche), applicati con risultati di durabilità ecceltecnologia dei materiali compositi per il consolidamento strutturale (inizialmente in carbonio per il restauro e recupero edilizio. Siamo stati i primi in Italia (inizio anni '80) a credere nella leader riconosciuto nella produzione e commercializzazione di materiali ad alta tecnologia La lunga esperienza alle spalle e la continua ricerca e miglioramento rendono Kimia SpA un

dehumidifications, complying to the latest building regulations. hydraulic limes, steel composite and FRP systems for the reinforcement of existing structures, solutions for waterproofing and floorings, protective & cleaning treatments, insulation and rials for building recovery and restoration like: high durability prepackaged mortars, natural Great experience leading company operating in the production and trading of hi-tech mate-

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attività di studi e di sperimentazione allo scopo di approntare tecniche sempre più perfezionate atte ad arrestare il crescente degrado del patrimonio artistico esposto all'aggressione degli agenti inquinanti. Lares è impresa di fiducia di numerose Soprintendenze, degli Uffici Unesco, nonché di importanti fondazioni e centri culturali in Italia e in Europa. di opere d'arte in pietra, marmo e cotto, di dipinti murali e su tela, di stucchi, di opere d'arte in legno e in metallo. Nella sua opera, Lares si avvale di personale particolarmente qualificato ed esperto ad intervenire nelle diverse tecniche artistiche. Fin dalla sua fondazione, la Società ha svolto un'intensa Lares - Lavori di Restauro - S.r.l. opera da oltre cinquant'anni esclusivamente nel campo del restauro

ers in Italy and in Europe. numerous Superintendencies, Unesco Offices, as well as important foundations and cultural centniques to stop the growing degradation of the artistic heritage. Lares is a trustworthy business of carried out an intense activity of studies and experiments in order to prepare more and more techenced personnel to intervene in various artistic techniques. Since its foundation, the Company has and metal. Lares is today the largest restoration company in Italy and employs skilled and experiof art in different materiales: stone, marble, terracotta, wall and canvas paintings, stuccos, wooden Lares – Lavori di Restauro - S.r.L. It has been active for over fifty years exclusively in restoration works



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<u>SCYNCYBELLO</u> IMPRESA

in riferimento ai diversi settori in cui opera, ottenendo riconoscimenti, qualifiche ed iscrizioni per molteplici domotica, energie rinnovabili e molto altro. L'impresa si caratterizza quindi per una particolare poliedricità tecnologie, tra cui rilievi fotogrammetrici con occhio 3-D e analisi del degrado dei materiali, impiantistica, quali il restauro lapideo, delle superfici affrescate e dei paramenti musivi, e sull'impiego delle più recenti di intervento, puntando al contempo sulla specializzazione delle proprie maestranze in specifici settori pubbliche e dell'edilizia privata. Nei quasi quarant'anni di attività l'impresa ha diversificato i propri ambiti L'impresa Scancarello Gaetano nasce nel 1979 come ditta individuale operante nel settore delle costruzioni

realization of hydraulic and electrical installations: they are the areas of our competence.

institutions. Restoration, construction of buildings, renovations, archaeological excavations, The company was founded on August 8, 1986 by Ing. Antonio Buono, in the respect of the earth, his men and his story. For 30 years we have been working with quality and safety procedures. We work with competence, reliability and availability to the needs of public and private dures. We work with competence, reliability and availability to the needs of public and private

qualità e sicurezza. Lavoriamo con competenza, affidabilità e disponibilità alle esigenze degli enti pubblici e privati. Restauro, costruzione di edifici, ristrutturazioni, scavi archeologici, realizzazioni di impianti idraulici ed elettrici, sono gli ambiti di nostra competenza. la terra, i suoi uomini e la sua storia. Da 30 anni operiamo nell'osservanza delle procedure di L'azienda è stata fondata l'8 Agosto 1986 dall'Ing. Antonio Buono, all'insegna del rispetto per

CERTIFICAZIONI: Certificazione SOA, Certificazione ISO 9001:2008

metric surveys with 3-D eye and analysis of material degradation, plant engineering, home automation, restoration, frescoed surfaces and mosaic, and the use of the latest technologies, including photogramareas of intervention, while focusing on the specialization of its workers in specific sectors such as stone construction and private building sector. In almost forty years of activity, the company has diversified its The Scancarello Gaetano company was founded in 1979 as a sole proprietorship operating in the public

## CEKLIEICAZIONI: ENI EN ISO 9001:2008 ENI EN ISO 14001:2004

soffitti fino ad arrivare a quelli più complessi come il restauro di fregi, statue fontane, piazze, colonnati, chiese, centri storici, castelli e monasteri. Disponiamo di attrezzature che ci consentono di risolvere qual-siasi problematica giazie all'utilizzo delle più innovative tecnologie per la pulitura, la conservazione ed il logie di Javoro dalla realizzazione di grandi superfici monumentali e civili, quali facciate, ponti, pavimenti, dalla consulenza tecnica all'esecuzione di lavori su tutto il territorio nazionale. Eseguiamo molteplici tipotiva e le nostre attrezzature ci consentono di fornire alle imprese pubbliche e private un servizio completo in collaborazione e sotto la supervisione delle Sovrintendenze. La nostra esperienza, la struttura organizza-L'Impresa Violi è da anni fortemente attiva nel settore del restauro conservativo. Il nostro lavoro è eseguito

through the use of innovative technologies for cleaning, conservation and ecological restoration. The Company Violi has long been very active in the field of conservative restoration. Our work is performed in collaboration and under the supervision of the Superintendence. Our experience, the organizational structure and our equipment allows us to provide the public and private companies a complete service from technical advice to the execution of works on the whole national territory. We realized many types of work from the construction of large areas such as rivil and monumental surface like facades, floors, work from the consplex ones such as the restoration of friezes, statues, fountains, squares, ceilings, until get to the more complex ones such as the restoration of friezes, statues, fountains, squares, clouns and statues, churches, castles and monasteries. We have equipment that enable us to solve any problem choices are the supervision and ecological restoration. risanamento ecologico.

#### ANNO DI FONDAZIONE: 1976

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l'Arte e il Restauro quale centro di eccellenza del settore, a livello nazionale e internazionale. attivati, oltre 7.500 studenti diplomati e 18.000 interventi effettuati, definisce l'Istituto per pubblici e privati. L'esperienza accumulata in quasi 40 anni di attività, con più di 4.800 corsi del patrimonio culturale mondiale, sia come centro di consulenza e restauro per conto di enti cializzazione e aggiornamento professionale nel settore della conservazione e del restauro L'Istituto per l'Arte e il Restauro nasce nel 1976 ed opera sia come centro di formazione, spe-

defines the Institute for Art and Restoration as a centre of excellence in the industry. It is both 4800 postgraduate programs, more than 7500 graduate students and 18000 restorations, and private companies. The experience gained from over 40 years of activities, with more than tural heritage worldwide. It is also a consultancy and restoration centre for public authorities for specialisation and professional training in the field of conservation and restoration of cul-The Institute for Art and Restoration was founded on 23 March 1978 and operates as a centre

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nationally and internationally.



*PALAZZO SPINELLI* 

**CERTIFICAZIONI:** UNI EN ISO 9001:2008

materia prima, dell'ambiente e del lavoratore. rivolta all'utilizzo di tecniche poco invasive e ad alto grado di sostenibilità, nel rispetto della nufatti in pietra, legno e materiale ceramico. In ogni intervento grande attenzione è sempre ta in restauro di beni architettonici, di opere pittoriche realizzate su diversi supporti e di madall'ing. Giuseppe Archivolti, è attualmente guidata dal figlio Raffaele. Graphite è specializzadi materiali e tecniche costruttive. L'azienda, con sede nel centro storico di Napoli, fondata Graphite S.r.l., dal 1946, è sinonimo di professionalità, esperienza e profonda conoscenza

materials, the environment and the worker. work the use of not invasive and sustainable techniques has great relevance, in respect of the novation and restoration of paintings, stone sculptures, wood and ceramic material. In every by Giuseppe Archivolti and currently led by his son Raffaele, is specializes in architectural restruction techniques. The company, headquartered in the historic center of Naples, founded Graphite, from 1946, means expertise, experience and deep knowledge of materials and con-

**CERTIFICAZIONI:** Codice AMSE e UE PED 97/23/CE **ANNO DI FONDAZIONE:** 2000

dei Beni Culturali le tecniche di base per la caratterizzazione dei materiali lapidei naturali e artificiali e dei relativi fenomeni di degrado. Le metodologie analitiche impiegate sono conformi alla normativa italiana (UNI-Beni Culturali) ed europea (EN—Conservation of Cultural Property). niera semplice ed intuitiva, rendendo accessibili a tutti coloro che operano nel campo della conservazione laboratorio portatile che consente di eseguire indagini diagnostiche sui materiali dell'edilizia storica in ma-HELIX® a secco e a umido. La tecnologia IBIX®, sviluppata in collaborazione con specialisti del restauro, utilizza specifici inerti selezionati per le puliture artistiche. IBIX Mobile Lab® 5T0] è un completo e versatile IBIX® è leader tecnologico per la pulitura a bassa pressione mediante micro-aero-abrasione. È specializza-ta nella realizzazione di sistemi di pulitura selettiva a bassa pressione con tecnologia a vortice elicoidale FILIALI: IBIX Norway, IBIX USA

IBIX® is a leader in developing technology and materials for low-pressure micro-aero-abrasive cleaning and designs and manufactures HELIX® low pressure dry or wet vortex cleaning systems. IBIX Mobile Lab® 5T01 is a comprehensive & versatile portable laboratory to analyse and diagnose historic building materials in an easy and clear manner. The methods of analysis used comply with both Italian and European regulations by UNI-Beni Cultural Heritage) and EN-Conservation of Cultural Property respectively.

2001 dall'accorpamento dei tre Centri di Studio del CNR sulle "Cause di Deperimento e Metodi di L'Istituto per la Conservazione e la Valorizzazione dei Beni Culturali (ICVBC) del CNR, nasce nel



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and public or private bodies involved in the protection and conservation of Cultural Heritage.

extensive national and international network of cooperation with research Institutes, universities

anteed not only by the presence of different professionals, but also through the development of an ICVBC include research, coordination, consultancy and training. One of the essential assets of the ICVBC is its multi-disciplinary character, promoting an interdisciplinary approach to research, guaranteed so the search of the

founded in 2001 and is located in Florence with units in Rome and Milan. The institutional tasks of The Institute for the Conservation and Valorization of Cultural Heritage (ICVBC) of the CNR, was di una rete consolidata di collaborazioni nazionali e internazionali con altri Istituti di Ricerca, con Università e con Enti pubblici e privati preposti alla tutela ed alla conservazione dei Beni Culturali. le problematiche, resa possibile dalla molteplicità delle competenze in esso presenti e dallo sviluppo e Milano. Compiti istituzionali dell'ICVBC sono: attività di ricerca, coordinamento, consulenza e formazione. Caratteristica essenziale dell'Istituto é la multidisciplinarietà con cui vengono affrontate Conservazione delle Opere d'Arte", istituiti nel 1970. L'Istituto ha sede a Firenze con Sezioni a Roma

CULTURAL HERITAGE Certify, sometries are the specific of the spe (CNR), which is the main public organisation pursuing research and innovation in Italy. IFAC The "Nello Carrara" Institute of Applied Physics (IFAC) is part of the National Research Council



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La società eredita l'esperienza acquisita dai suoi ideatori nel corso dell'attività professionale. nuove tecnologie e metodologie informatiche nel campo dell'architettura e della topografia. nel 2001, dall'iniziativa di tre professionisti da anni impegnati nel settore dell'applicazione di Rilievi architettonici, laser scanner, elaborati grafici e fotografici. La società geomar.it nasce

quired by its founders during their professional career. IT methods applied to architecture and land survey. The company has inherited the skills actablished in 2001 by three experienced professionals in the field of the new technologies and Architectural surveys, laser scanners, graphic printouts and photographs. Geomar it was es-



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ratori e architetti che collaborano per la messa a punto e la realizzazione del progetto di restauro manutenzione di edifici storici. Il nostro organico aziendale è composto da tecnici qualificati, chimici, restauportoni e finestre) restauro mosaici; dal restauro pittorico agli interventi di messa in sicurezza, monitoraggio e mento, cotto, etc.); restauro di intonaci monocromi o decorati; restauro di supporti lignei e serramenti (porte, restauro monumentale (che comprende restauro lapideo: pietra, marmo, calcare naturale o artificiale (ceventi di conservazione e restauro: da analisi diagnostiche, propedeutiche a qualsiasi intervento di restauro, al importanti di restauro conservativo, restauro pittorico ed architettonico. Le nostre attività riguardano intermerose collaborazioni con Comuni, Enti pubblici e istituzioni Ecclesiastiche. All'attivo abbiamo molte opere Geostrutture Restauri è presente nel settore del restauro dal 1994, operiamo in ambito nazionale e con nu-

toring and maintenance of historic buildings Our company staff is made up of qualified technicians, chemists, restorers and architects who collaborate for the development and implementation of the restoration project. dows (doors, doors and windows) restoration mosaics; from the pictorial to the purposes of the safety, moniterracotta, etc.); restoration of monochrome or decorated plasters; restoration of wooden supports and winnumerous collaborations with municipalities, public bodies and ecclesiastical institutions. We deal with important works of conservative restoration, pictorial and architectural restoration. Our activities involve conservation and restoration of different types: from diagnostic, preparatory to any restoration work, to the monumental event (which includes stone restoration: stone, marble, natural or artificial limestone (concrete, Geostrutture Restauri has been in the field of restoration since 1994, we work in the national field and with

La G.E.R S.r.l. è stata protagonista di interventi di restauro e conservazione estremamente impegnativi e complessi, che ne hanno confermato la straordinaria capacità organizzativa e

edifici di alto valore storico e architettonico. prescrizioni ed indicazioni. Notevole la nostra competenza ed esperienza riguardo restauri di di Roma, mettendoci a totale disposizione degli enti comunali e pubblici, rispettando le loro La nostra impresa ha eseguito restauri e conservazione di edifici all'interno della Città Storica

CERTIFICAZIONI: 150 9007:2008 - 150 14001:2015 - 0HSAS 18007:2007

costante dell'impresa e soprattutto di soddisfazione del cliente.

degli "Appalti pubblici"; le certificazioni ottenute per i lavori eseguiti sono segno tangibile di crescita trattati nei lavori dell'impresa. L'impresa opera ormai da anni sull'intero territorio nazionale nel settore ciali - Progettazione, realizzazione e manutenzione di impianti tecnologici. Sono i campi maggiormente mobili sottoposti a tutela - Lavori di ingegneria civile, opere di consolidamento, opere strutturali speprettamente dalla realizzazione di lavori privati. Ristrutturazione, restauro e manutenzione di beni imdell'edilizia, precisamente nel settore dei lavori pubblici, sebbene i suoi esordi siano stati caratterizzati L'attività dell'impresa GIAFRA ha avuto inizio nel dicembre 1996 e da oltre venti anni opera nel campo

accomplishments are a tangible sign of a steady growth and, most importantly, customer satisfaction. for years throughout the country in the field of "public tenders"; the certifications obtained for these Design, implementation and maintenance of technological systems. The company has been operating private works. Buildings (such as hospitals, schools, churches, barracks), including those of historical value - Civil engineering works, consolidation works and geological surveys, specialstructural works the field of public works, although its beginnings were characterized by the implementation of purely GIAFRA was bornin December 1996, and has twenty years experience in construction, specifically in

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## assorestauro<sup>\*</sup>

culturali-monumentali e sacrali in tutta Italia. effettuare molte opere di restauro e rifacimento dei pavimenti storici di ville e palazzi storicodel legante, alla fase del trattamento finale. Le nostre maestranze arrivano dalla passione e dall'insegnamento familiare tramandato fin dai nostri trisavoli che ci hanno permesso di importanza è la nostra ricerca scientifica che accompagna il lavoro e approfondisce lo studio chimico-fisico dei materiali e del loro comportamento, dalla fase della selezione dell'inerte e pletamente a secco ed immediata aspirazione delle polveri dei pavimenti. Di fondamentale all'epoca rinascimentale e con sistemi all'avanguardia, con la nostra esclusiva levigatura comprestigiose e svariate terre naturali presenti al mondo. L'azienda opera con prodotti risalenti saici con riproduzione storica degli stessi e nella stesura di pavimenti con qualsiasi tipologia di marmo e pietre di nostra lavorazione. Utilizziamo prodotti naturali e lavoriamo con le più di terrazzi e pastelloni alla veneziana, in particolare di cotto e calce, nella creazione di mo-La nostra azienda Fratelli Feltracco di Asolo (VT) è specializzata nella realizzazione e restauro



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ternazionale dei GBC presenti in molti altri paesi; è membro del World GBC e partner di United -Green Building Council Italia (GBC Italia) è un'associazione no profit che fa parte della rete in-

tems with high mechanical and chemical resistance, suitable for structural reinforcement of Design and manufacturing of low weight and thickness FRP (Fiber Reinforced Polymer) sys-

ta resistenza meccanica e chimica, basso peso e spessore, per recupero e consolidamento di Progettazione/costruzione di sistemi di rinforzo in F.R.P. (Fiber Reinforced Polymer) ad eleva-

del sistema di certificazione LEED e dei propri sistemi di certificazione espressamente mirati States Green Building Council (USGBC). Promuove un processo di trasformazione del mercato edile italiano attraverso la promozione

storici: GBC Historic Building. GBC Italia ha elaborato inoltre un sistema di rating specifico per la certificazione degli edifici alle specificità del mercato di riferimento.

profitability, and improving building occupants health and well-being. Green Building Council Italia (GBC Italia) is a non-profit association bringing together the most competitive companies and the most qualified Italian associations and professional communities active in the sustainable building industry.

GBC Italia was founded in January 2008, with the objective of promoting sustainable design and construction practices in order to reduce negative environmental impact while increasing and construction practices in order to reduce negative any increasing and construction practices in order to require megative any increasing and construction practices in order to require any any and improving building occupants both and well-being any any and improving building occupants begins and well-being.



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**VANO DI EONDAZIONE: 1994** 

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reofotogrammetria Fotogrammetria Ortofoto. Topografia e GPS. Batimétria. Rilievi di interni. Elaborazioni grafiche e fotografiche. Laser Scanning 3D (Architettura, Archeologia, Infrastrutture, Industriale). Archeometria. Ste-000.2f2 orus a onif II shoitsongosginigabni 8-02 20

3D Laser Scanning (Architectural, Archeology, Infrastructures, Industrial). Archeometry. Stereophotogrammetry Photogrammetry Ortophoto. Topography and GPS. Bathymetry. Traditional Surveys. Graphic and Photographic information processing.

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CERTIFICAZIONI: Procedura in corso per ISO e OG2

certificato Bossong per sistemi di ancoraggio iniettati in murature storiche. pulizia di marmi, graniti, materiali lapidei, murature faccia a vista, legno, ferro. Installatore to delle murature umide con barriere e chimica per l'edilizia. Micro sabbiatura ecologica per trollate con utensili diamantati, perforazioni speciali e taglio cemento armato. Risanamenforazioni lunghe speciali. Installazione di ancoraggi e incatenamenti per rinforzo di murature. Miglioramento e adeguamento in funzione antisismica di Edifici. Posa FRP. Demolizioni con-Consolidamento strutturale edifici con sistemi innovativi e tecnologie all'avanguardia. Per-

certified installer for anchoring systems injected into historic masonry. blasting ecological cleaning of marble, granite, stone, masonry face brick, wood, iron. Bossong concrete cutting. Renovation of damp walls with barriers and construction chemicals. Micro Long special drilling. Installation of anchors and heavy duty anchors for masonry reinforcement. Seismic retrofitting of buildings and structural improvement and adaptation. Installation of FRP. Controlled demolitions with diamonds tools; special drilling and reinforced Structural strengthening buildings with innovative systems and well-advanced technology.

agnostic thesis on Roman paintings, will continue to carry out consultations and diagnostic

The company was founded, after more than thirty years of Luigi Soroldoni's activity in the diagnostics for Cultural Heritage, also with direct assignments of the Lombard and Venetian Superintendencies as well as with Municipal, Regional and Religious Administrations. The new company with the collaboration of Sara Soroldoni, graduated in Chemistry with a dinew company with the collaboration of Sara Soroldoni, graduated in Chemistry with a dinappression of Sara Soroldoni, graduated in Chemistry with a dinappression of Sara Soroldoni, graduated in Chemistry and disappression of Sara Soroldoni, graduated in Chemistry and Sara Sarak disappression of Sarak S

a svolgere consulenze e indagini diagnostiche nel restauro e nella conservazione delle opere Sara Soroldoni, laureata in Chimica con una tesi di diagnostica su pitture romane, continuerà Amministrazioni Comunali, Regionali ed Enti religiosi. La nuova ditta con la collaborazione di

La ditta nasce, dopo oltre trenta anni di attività di Luigi Soroldoni nella diagnostica per i Beni Culturali, anche con incarichi diretti delle Soprintendenze Lombarde e Venete oltre che con











info@diamantech.it - www.diamantech.it Tel. +39 030 6915222 - Fax +39 030 6915222 Via A. Gramsci 10 - 25080 Nuvolento (BS)



## **BALTAAIO**

## DIARTLAB DI LUIGI SOROLDONI & C SAS

fi.dalfraib.www f.soroldoni@diartlab.it 761. +39 0331 883064 Via Oleggio 36 - 2002 - de oiggalo aiV



#### ANNO DI FONDAZIONE: 1987

CERTIFICAZIONI: in corso - Qualità ISO 9001

investigations in the restoration and conservation of works of art.

continui piani di miglioramento in materia di qualità e sicurezza. processo che segna lo stile di tutta l'azienda. Edil Tecnica adempie alle prescrizioni e segue laborare con un unico referente dagli elevati parametri qualitativi in un'evidente economia di Il cliente ottiene così tutti i benefici della specializzazione e al tempo stesso i vantaggi di colri settori di intervento in un processo che va dalla progettazione alla consegna, chiavi in mano. proprie del settore edile creando sinergie tra imprese specializzate nei diversi e complementatura che punta sull'integrazione verticale di tutte le necessarie professionalità e competenze biente e di un'elevata qualità della vita. Il consorzio Ediltecnica nasce nel 1987 con una strutper conservare il patrimonio storico e architettonico del nostro territorio nel rispetto dell'amall'improvvisazione e alla frammentazione ma richiedono ricerca, competenza ed esperienza integrità e funzionalità- il recupero e il restauro, sono specializzazioni che non lasciano spazio nibilità Ambientale ed Energetica. La manutenzione di un edificio –mantenerne efficienza, mediante la Manutenzione e il Restauro e la Creazione di Valore in una prospettiva di Soste-La Conservazione e la Valorizzazione del Patrimonio Edilizio, in particolare se di valore storico,



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EDILTECNICA

CERTIFICAZIONI: ISO 9001 ANNO DI FONDAZIONE: 1981

impiegati nei più importanti cantien di restauro. La Società. El En. ha sponsorizzato i restauri dei bassorilievi del SS. Sepolcro a Gerusalemme, David del Verrocchio e David di Donatello al Museo Nazionale del Bargello. artistici, monumenti e edifici storici, potendo operare su supporti lapidei, stucchi, superfici affrescate, metalli di cui in particolare bronzo e bronzo dorato, argenti e oreficerie, manufatti in legno anche dipinto. I sistemi laser del Gruppo El En. sono presenti in numerosi laboratori europei e nel mondo e sono stati utilizzati o vengono adesso del Gruppo ELEn. , ha messo a punto e detiene il brevetto della Black Box per l'arte, dispositivo per il monitoraggio and del crisporte daser sono la puitura di manufatti alla funda di oroz rasporto delle opere d'arte, I campi di applicazione della strumentazione laser cono la pulitura di manufatti di Ranging) per il monitoraggio in remoto di monumenti e diagnostica composizionale della carta. L'Actis, società di sistemi laser per i Beni Culturali, tecnologicamente d'avanguardia e costantemente validati dal mondo della conservazione. La soc. E.Len. ha messo a punto anche alcuni dispositivi e sistemi optoelettronici ed elettronici per la diagnostica e il monitoraggio. Sistemi di diagnostica laser LIBS (Laser Induced Breakdown Spectroscopy) per indagini composizionali su metalli e autentificazione di opere d'arte e F.LIDAR (Flourescence Light Defection And l'esperienza maturata da Vaz mer y A.A.P. mazienda del gruppo tra le prime e prime e gamma disporibile solizza-sione de la prime de la cier scientifici. In questo modo il Gruppo fornisce attualmente la più ampiri gamma disponibile stemi laser per le applicazioni nella conservazione dei Beni Culturali. Dal 2005 l'attività di El.En. si è integrata con Il Gruppo EL.En., fondato nel 1991, è stato il primo in Italia ad aver sviluppato, nella prima metà degli anni

## EL.EN. ELECTRONIC ENGINEERING SPA

ELECTRONIC ENGINEERING

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moo.quorgnala.www ti.nələ@ənoizavıəzno







#### CERTIFICAZIONI: ISO 9001:2015

nel recupero del patrimonio architettonico. Conta inoltre l'Area di Ingegneria del Restauro per valorizzare le competenze dell'ingegneria analisi del valore, cantierizzazione e progettazione operativa, facility&building management. tata dal Project & Construction Management, verifica di progetti terzi, controllo tempi-costi, Contec Ingegneria opera con un approccio integrato e BIM oriented nei campi dell'urbanistica, architettura, edilizia civile-industriale, infrastrutture e impianti. La Progettazione è comple-

of engineering in the refurbishment of architectural heritage. projects, time-cost control, value analysis, construction and operational planning, facility & building management. It also counts the Restoration Engineering Area to enhance the skills urban planning, architecture, civil-industrial constructions, infrastructures and plants. This main competence is completed by Project & Construction Management, verification other's Contec Ingegneria operates with an integrated and BIM-oriented approach in the fields of



gruppo contec NGEGNERIA

#### CONTEC INGEGNERIA

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E

#### ANNO DI FONDAZIONE: 1981

#### CERTIFICAZIONI: UNI EN ISO 9001- UNI EN ISO 140001- OHSAS

intervento e affiancati da consulenti scelti fra ricercatori altamente qualificati. vengono eseguite con un organico di oltre 200 operatori specializzati nel proprio settore di alla qualità dell'intervento e all'unicità e importanza sociale dei beni su cui agisce. Le attività Cooperativa Archeologia nasce a Firenze nel 1981 per operare nell'ambito della ricerca, della conservazione e della valorizzazione dei beni culturali. E' attiva, per mezzo di sedi distacca-te, su tutto il territorio nazionale e in alcuni paesi esteri. Cooperativa Archeologia da priorità

field of intervention and supported by consultants selected from among highly qualified reit acts. The activities are carried out with a staff of over 200 professionals specialized in their tion and enhancement of Cultural Heritage. It operates through branch offices, all over the country and in some foreign states. Cooperativa Archeologia focuses his attention to the country of the intervention and the uniqueness and social importance of the goods on which is easy to extract a surface of the goods on which is easy to extract a surface of the goods on which is easy. Cooperativa Archeologia was funded in Florence (Italy) in 1981 to work in research, conserva-



#### cooperativa archeologia

#### GOOPERATIVA ARCHEOLOGIA

info@archeologia.it - www.archeologia.it Via Luigi La Vista 5 - 50133 Firenze



Tel. +39 055 576944 - Fax +39 055 576939



#### ANNO DI FONDAZIONE: 1980

## CERTIFICAZIONI: Varie certificazioni tecniche rivolte al prodotto

lenza, formazione ed assistenza tecnica". CIVILE. L'offerta dell'azienda prevede, inoltre, una competa linea ANTIGRAFFITI ed una per il trattamento delle PAVIMENTAZIONI. CIR offre alla sua clientela un valido supporto di consumici ad alto contenuto tecnologico (prodotti nano-tecnologici, foto-catalitici, bio-degradabi-li, ecc.), studiati per le applicazioni nei settori del RESTAURO MONUMENTALE e dell'EDILIZIA "CIR - CHIMICA ITALIANA RESTAURI è un apprezzato e conosciuto produttore di formulati chi-

consulting, trainingand technical assistance". line and a specific FLOORING product line. CIRoffers to its customersa valuable support of STRUCTION. The offering of the company also provides a complete ANTI-GRAFFITI product "CIR- CHIMICAITALIANARESTAURIIs a well-known and popular manufacturerofhigh-tech chemicalproducts (nano-technological, photo-catalytic, bio-degradable products, etc..), designed for the application in the sectors of RESTORATION OF MONUMENTS and CIVIL CON-



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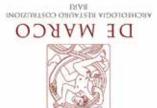


#### ANNU DI FUNDAZIONE: 1999

dosi giorno dopo giorno un bagaglio di competenze tecniche e di soluzioni progettuali utili anni di attività, l'impresa ha operato con successo in tutto il territorio nazionale, costruensottoposti a tutela e nel settore specialistico delle indagini archeologiche. In più di venticinque La De Marco S.r.l. può contare su una consolidata esperienza nel restauro dei beni immobili CEBLIFICAZIONI: UNI EN ISO 9001-2008/ UNI EN ISO 14001-2004/ UNI EN BS OHSAS 18001-2007

ad affrontare in maniera consapevole e qualificata le esigenze legate alla conservazione del

consciously and competently any kind of restoration. in the whole country, establishing and developing day by day the core expertise to take on archaeological survey. For more than twenty-five years the company has worked successfully De Marco s.r.l. has a consolidated experience in the field of cultural heritage restoration and



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CONSORZIO PONTEGGI SRL

regulations.

complex structures, propping and especially for the monument's restauration. Temporary structures as facades of buildings. Multidirectional, particulary suitable for the realization of The Consorzio Ponteggi SRCL is specialized in the design, installation and rental of prefabricated scaffolding. We have various types of scaffolding: Frames, particualry suitable for linear

provvisiorie, per proteggere il cantiere di lavoro dalle intemperie. Operiamo nel pieno rispetto di strutture complesse, puntellazione e soprattutto per il restauro monumentale. Coperture lineari come le facciate degli edifici. Multidirezionale, particolarmente idoneo per realizzazioni fabbricati. Disponiamo di vari tipi di ponteggio: A telai, particolarmente idoneo per strutture La Consorzio Ponteggi srl è specializzata nel progetto, montaggio e noleggio di ponteggi pre-

Soprintendenze, le Direzioni Regionali, il Ministero per i Beni e le Attività culturali, il Parlamento, il Governo e le forze sociali che operano nello stesso ambito dell'Associazione.

della cultura" nei confronti delle principali istituzioni politiche ed amministrative, incluse le

raggiungere forme più mature di collaborazione fra le istituzioni pubbliche e il settore privato specializzato. A questo fine Confcultura rappresenta le esigenze e le proposte delle "imprese privato può dare alla valorizzazione del nostro patrimonio storico e artistico con l'obiettivo di sempre maggiore e migliore fruizione con l'incentivazione di forme ottimali di gestione dei servizi culturali e turistici. Confcultura, sulla base di quanto scritto nel suo Statuto, si pone al centro del dibattito culturale in atto per l'affermazione del sostanziale valore aggiunto che il di progresso per l'intera società e che si debbano promuovere in maniera sostenibile per una ispira l'azione dell'Associazione è la convinzione che i beni culturali siano fattori di sviluppo e Confcultura è l'unica organizzazione in Italia rappresentativa delle imprese private che gesti-scono i servizi per la valorizzazione, fruizione e promozione del Beni Culturali. La missione che

La prima associazione delle imprese private gestori dei servizi museali. Fondata nel 2001,

covers, to protect the worksite from the wheather. We operate in full compliance with all di tutte le normative.

**ANNO DI FONDAZIONE:** 2002

CONSORZIO PONTEGGI

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CONFCULTURA

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**ILOOZIONE:** SOLL

application and Formulators sectors.

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CEMENTI CENTRO SUD SPA - VICAT



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VICAT) nei settori del Restauro, della Bio Edilizia, dei lavori in Acqua e della Formulazione in generale. viene commercializzato in Italia attraverso la Cementi Centro Sud (partecipata interamente dal Gruppo Il gruppo possiede l'ultima cava di Cemento Naturale presente in Europa; il Cemento Naturale Prompt

Italy through Cementi Centro Sud (fully owned by VICAT Group) in the Restoration, Eco Building, Water and aggregates sectors. The group owns the only European Natural Cement quarry; Prompt Natural Cement is distributed in Vicat is an international company operating in 12 countries, and mainly involved in the cement, concrete

mento, del calcestruzzo e degli inerti.

Vicat è un gruppo internazionale operante in 12 nazioni, e coinvolto principalmente nei settori del ce-

ciplines and skills constitute the work methodology of the Centre, involved in highly complex projects, which are placed at the service of cultural institutions in strict accordance with the training guidelines. Cultural Heritage offered by the University of Torino. The interaction and exchange between various disservation of cultural heritage. The Centre hosts the Master's Degree in Conservation and Restoration of

The Conservation and Restoration Centre is a no-profit foundation opened in 2005 by the will of its foundation and Restoration and solvanced training and research institute for restoration and confounding members to establish an advanced training and research institute for restoration and concipazione a programmi internazionali di ricerca e conservazione.

Fondazione per l'Arte (oggi Fondazione 1563 per l'Arte e la Cultura) della Compagnia di San Paolo e la Fondazione, gli scopi del Centro risiedono nello studio e nella sicerca sperimentale, nel promuovere lo sviluppo delle imprese sul territorio e nella partestudio e nella ricerca sperimentale, nel promuovere lo sviluppo delle imprese sul territorio e nella partestudio e nella ricerca sperimentale, nel promuovere lo sviluppo delle imprese sul territorio e nella partestudio e nella parte vincia di Torino, il Comune di Torino, il Comune di Venaria l'Università di Torino, il Politecnico di Torino, la culturale. I Soci Fondatori sono il Ministero per i Beni e le Attività Culturali, la Regione Piemonte, la Proistituto per l'alta formazione e la ricerca nell'ambito del restauro e della conservazione del patrimonio Centro per la Conservazione e il Restauro dei Beni Culturali "La Venaria Reale" nasce nel 2005 quale

CERTIFICAZIONI: certificazione ISO 9001:2000 OS2-A

**ANNO DI FONDAZIONE:** 2005

LA VENARIA REALE CENTRO CONSERVAZIONE E RESTAURO

(T) Piazza della Repubblica - 10078 Venaria Reale

Tel. +39 011 4993 011 - Fax +39 011 4993 033





di fattibilità, progettazione e direzione lavori di opere di architettura e ingegneria civile CERTIFICAZIONI: UNI EN ISO 9001:2008 – Erogazione di servizi di ricerca storica, consulenza, studi

La società B5 Srl indirizza e promuove l'esperienza e la specializzazione in progettazione architettonica e strutturale, consolidamento e restauro degli edifici, direzione lavori in Italia e in Europa, di uno studio professionale di tradizione più che trentennale, con le competenze in materia di innovazione tecnologica e metodologica di giovani professionisti affermati (arch. Francesca Brancaccio, ing. Ugo Brancaccio), attraverso i contributi e le specificità dei singoli soci. La B5 Srl opera nell'ambito di un Sistema di Qualità, adottando al suo interno e nei rapporti con i Committenti i criteri espressi adalle Norme UNI EN ISO 9001:2000.

MA in architecture and Ugo Brancaccio, engineer, both specialized in the restoration of monuments. B5 Srl engineering operates in a Quality System, adopting in the relationship with customers, the criteria expressed by the regulations IVII EV ISO 9001:2000. abroad, which comes from a successful long-term tradition, thanks to forty-year professional tradition with the innovative contributions and abilities of Francesca Brancaccio, Ph.D. and planning, in restoration of civil and monumental buildings, supervision of working in Italy and B5 Srl engineering achieved a great experience and known-how in architectural and urban



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JAS AAIVOA

CERTIFICAZIONI: UNI EN ISO 9001: 2008 ANNO DI FONDAZIONE: 1988

ANNO DI FONDAZIONE: 1969

FILIALI: Roma

CERTIFICAZIONI: ISO 9001: 2008 **VANNO DI EONDAZIONE: 1962** 

gnostica, gli arredi museali. Progettazione e realizzazione di laboratori ed attrezzature per l'analisi e per il restauro del patrimonio culturale. Società certificataUNI EN ISO 9007:2000 Commercio e produzione di materiali ed attrezzature per il restauro, la conservazione, la dia-

checks on constructions, diagnosing concrete, masonry and wood.

CERTIFICAZIONI: 15O 9001: 2008 QUALITY MANAGEMENT SYSTEM

for masonry structures and in particular for historiscal buildings.

CE-ETA 11/0345 CE-ETA 08/0208 CE-ETA 11/0377

furniture museum. Design and construction of laboratories and equipment for analysis and Trade and production of material and equipments for restoration, conservation, diagnostic,

Supply, assistance, rental of geo-technical and geoph ysical instrumentation for non-invasive controlli non distruttivi del costruito-diagnostica del calcestruzzo, delle murature e del legno.

Fornitura, assistenza, noleggio di strumentazione geotecnica e geofisica-apparecchiature per

ditional mechanical and chemical anchors is integrated with technologies specially designed

industry for simple fixing applications to complex strengthening intervention. A range of tra-Since 1962 design, manufacturing and selling of fixing and strengthening systems for building

ra specifiche per interventi su manufatti di particolare interesse storico-architettonico. abitualmente utilizzati in edilizia si affiancano tecnologie per il rinforzo di strutture in muratuconsolidamento per l'edilizia per applicazioni che vanno dal semplice ancoraggio ai più complessi inferventi di consolidamento strutturale. Ai tradizionali ancoranti meccanici e chimici Dal 1962 progettazione, produzione, commercializzazione di sistemi di fissaggio e sistemi di

CE-ETA 11/0396 CE-ETA 09/0140 CE-ETA 09/0246 CE-ETA 11/0344

restoration of cultural heritage. The Company is certified UNI EN ISO 9001:2000



#### **BRESCIANI SRL**

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CATEGORIE | CATEGORIES

in the field of building construction. It has been re-founden on 2000 and again 2010. The main purpose of the Association is to develop and read the Cultural Heritage with a technical and technological overview by meand of an exchange of expertise and operative updates. ATE has been founded on December 1990 on the suggestion of several enterprises operating

fondire il patrimonio culturale in ambito tecnologico tramite uno scambio di esperienze e rifondata nel 2000 e nuavamente nel 2010. L'Associazione si propone di sviluppare e appro-ATE è nata nel Dicembre 1990 sulla spinta di diversi operatori nel campo dell'edilizia, è stata

the coordination of safety on construction sites and management work, design in the field of building construction and electrical energy production plants. for the purposes of validation, verification of the seismic vulnerability, activities concerning

consultancy, such as verification of the technical design documents produced by third parties Archliving is an engineering and architecture company that deals with research activities,

sicurezza nei cantieri e direzione lavori, progettazione in materia di costruzione edile e di imsulenze, quali verifica degli elaborati tecnici progettuali prodotti da soggetti terzi ai fini della validazione, verifica della vulnerabilità sismica, attività in materia di coordinamento della Archliving è una società di ingegneria e architettura che si occupa di attività di ricerche, con-

pany has a "know-how" of absolute value, with recognized expertises of its own technicians, experienced in their specific disciplines that allow to provide up a high quality final product.

in the following specialistic areas: renovation and consolidation of historical buildings, art resto-ration and in archaeological sector including all services of fact-finding investigation. The com-

The archeoRes business idea foresees the merger of entrepreneurial logic with a passion for restoration and conservation of architectural, artistic and archaeological heritage, using the skills and the knowledge of the founding partners. The company operates on throughout the country

di tutti i servizi d'indagine conoscitiva. La società possiede un know how di assoluto valore, con competenze riconosciute dei propri tecnici esperti nelle specifiche discipline che consentono di poder fornire un prodotto finale di altissima qualità. consolidamento di edifici storici, del restauro artistico e nel settore archeologico comprensivo torio nazionale nei settori specialistici del restauro monumentale, della ristrutturazione e del utilizzando le competenze e le conoscenze dei soci fondatori. La società opera su tutto il terri-L'idea imprenditoriale dell'archeoRes prevede la fusione delle logiche imprenditoriali con la pas-sione per il restauro e la conservazione del patrimonio architettonico, artistico e archeologico,

notizie operative.

ANNO DI FONDAZIONE: 1990

pianti di produzione di energia elettrica.

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PER L'EDILIZIA Per l'edilizia

ASSOCIAZIONE TECNOLOGI PER L'EDILIZIA

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offre inoltre un servizio di analisi diagnostica. laboratorio ed il continuo monitoraggio applicativo, assicura interventi di restauro attenti e rispettosi. Lo staff tecnico di AV.T.A.RES ha una lunga e consolidata esperienza. AV.T.A.RES AA.T.NA offre un'ampia gamma di prodotti, attrezzature e servizi per la conservazione e di restauro dei beni culturali. La qualità dei prodotti, garantita da test sul campo e di Pessaterio dei beni culturali.

consolidated experience in the conservation field. AN.T.A.RES arl perform chemical, biological restoration of cultural heritage. The quality of products, pre-launch field tests and continuous application of cultural heritage. The quality of products dequipments meet the needs of a careful, conscious and focused restoration. The technical team of AN.T.A.P.E.S srl have a long and ful, conscious and focused restoration. The technical team of AN.T.A.P.E.S srl have a long and ful, conscious and focused restorations. ANTARES of offer a wide range of products, equipment and services for the conservation and

and imaging analysis applied to cultural heritage.

CERTIFICAZIONI: SOA: OGOI-classe I, OGO2-classe V, OSO2-classe II, OS25-classe IV

ANNO DI FONDAZIONE: 1995

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turali e Ambientali; la prima importante rassegna in Italia per la conservazione, la tutela e la Segreteria organizzativa di RESTAURO Salone dell'Arte e della Conservazione dei Beni Cul-

(conferences, theme exhibits) and technical meetings with exhibiting companies, in what can be considered the European capital of Culture and Restoration. Show figures: 16.000 sqm in 6 modern and functional halls; more than 300 exhibitors; 30.000 visitors; 40 international 6 modern and functional halls; more than 300 exhibitors; 30.000 visitors; 40 international vation Salon", the premier Italian event concerned with the conservation, protection and yalontzation of architectural, artistic and monumental heritage. Four busy days full of events Organizational office for Restauro, the "Art and Cultural and Environmental Assets Conser-



della Conservazione dei Beni Culturali e Ambientali ACROPOLI SRL - Salone dell'Arte del Restauro e

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tematiche. tatori, 40 convegni internazionali; 110 incontri tecnici organizzati dagli espositori; 10 mostre Salone: 16.000 mq in 6 padiglioni moderni e funzionali; più di 300 espositori; 30.000 visiin quella che può considerarsi una capitale europea della cultura e del restauro. I numeri del nate ricche di eventi (convegni, mostre tematiche) e incontri tecnici con le aziende espositrici, valorizzazione del patrimonio architettonico, artistico e monumentale. Quattro intense gior-

conferences; 110 technical meetings organized by exhibitors; 10 theme exhibits.

#### ANNO DI FONDAZIONE: 1965

**CERTIFICAZIONI**: ISO 9001:2008 - Italiana ed Inglese. Certificazione SOA: OG01-classe IV-BIS, OG02-classe I, OS07-classe I, OS27-classe III

proprietation decide and supplies famon del restauro parte rilevanite del proprio DNA professionale. AFR-COS® dispone di uno staff interno che si occupa di Ricerca e Sviluppo in collaborazione con varie Università Italiane. La conoscenza di tecniche tradizionali, unitamente alla costante ricerca e sperimentazione di più ag-giornate modalità di intervento, ci consente di lavorare nel pieno rispetto della natura e della conservazione delle strutture, consci delle responsabilità e dell'impegno del nostro lavoro. diante l'utilizzo delle tecnologie più avanzate, operando con sistemi multipli e brevettati, riconoscendo tra i propri valori quello dell'arte dal sapore antico, che insieme alla conoscenza dei materiali e delle tecnologie di ANPCOS® è azienda leader per il restauro conservativo ed il consolidamento di strutture edili e storiche me-

tation of more developed intervention methods, allows us to work while fully respecting the nature and preservation of structures, and remaining conscious of the responsibility and commitment we devote to our work. tures. Using the most advanced technologies, operating with multiple and patented systems, and recognising that, among its own values, the art of antique taste together with advanced knowledge of instruments and consolidation technology, AhRCOS® makes restauration a key part of its own professional DNA. AhRCOS® has at its disposal a strong team that is in charge of Research and Development in cooperation with vanious Italian universities. Our knowledge of traditional techniques, together with committed research and experimentan universities. Our knowledge of traditional techniques, together with committed research and experimentant of a straditional techniques, together with committed research and experimentant in the professional profe -DNACAS" is a leading firm involved in conservative restauration and consolidation of civil and historic struc

#### ANNO DI FONDAZIONE: 1997

suo nuico rappresentante in Italia. ficuamente con università, centri di ricerca, fondazioni, mussi, organi centrali e periferici dello Stato (Ministeri, Soprintendenze, Regioni, Province, Comuni, Comunità montane, Agenzie di promozione turistica e di sviluppo, ecc.). L'Associazione ha firmato nel 2008 un protocollo d'intesa con il TICCIH (The International Commettee for the Conservation of Industrial Heritage) che la riconosce come (The International Commettee for the Conservation of Industrial Heritage) che la riconosce come sezioni regionali e commissioni di settore nazionali, conta oggi oltre 300 soci attivi e interagisce proindustriale e da alcune tra le più importanti istituzioni del settore del Paese. L'AIPAI, articolata in L'Associazione Italiana per il Patrimonio Archeologico Industriale (AIPAI), la sola operante in quest'ambito a livello nazionale, è stata fondata nel 1997 da un gruppo di specialisti del patrimonio

local State bodies (Ministries, Superintendencies, Regional and Provincial Authorities, Municipalities, Mountain Communities, Agencies for the promotion of tourism and local development, etc.). In 2008 AIPAI signed an agreement with TICCIH (The International Committee for the Conservation of Industrial Heritage), thus AIPAI became the official representative of TICCIH for Italy. country and it cooperates with universities, research centres, institutions, museums, central and The Italian Association for Industrial Archaeological Heritage, the only one of its kind in Italy, was founded in 1997 by a group of industrial heritage experts and some of the most important Italian institutions in this field. It has over 300 members working in its regional sections spread all over the

#### **ANNO DI FONDAZIONE:** 2008

mente gli interventi di consolidamento e adeguamento sismico del costruito. tradizionali, in particolare di quelle a carattere storico-monumentale, consente di risolvere agevolcio progettuale. L'approfondita conoscenza dei materiali, delle tecniche e delle tipologie strutturali consolidamento di edifici esistenti. L'utiliszo di materiali innovativi è parte integrante dell'approcper i nuovi edifici, nonché indagini strutturali,valutazioni di sicurezza e sismica per gli interventi di nei campi dell'ingegneria strutturale e sismica. Svolge servizi di progettazione, di direzione dei lavori Aires Ingegnerią è stata fondata nel 2008 da tre ingegneri: Pasquale Crisci, Gennaro Di Lauro e Gian-franco Laezza, E uno studio specializzato nello sviluppo di progetti, nonché in servizi di consulenza,

tion and seismic retrofitting of the cultural heritage assets. to all types of traditional and ancient structures, allows working without difficulties on the restora-Aires Ingegneria was established in 2008 by three engineers: Pasquale Crisci, Gennaro Di Lauro and Gianfranco Laezza. It is an Italian firm highly specialized in the development of projects, as well as in consulting services, in the fields of structural and seismic engineering. The firm is capable of carrying out services in planning and in the supervision of works for new buildings, as well as structural investigations, safety assessments and testing services for rehabilitation interventions on existing structures. The latest generation of anti-seismic technologies and strategies are an integral part of structure. The latest generation of anti-seismic technologies and strategies are an integral part of the design approach. The in-depth knowledge of materials and constructive techniques, extended the design approach. The in-depth knowledge of materials and constructive techniques, extended the all tynes of traditional and ancient structures, allows working without fulficulties on the restonational traditional and ancient structures, allows working without fulficulties on the restonation of the services.

🔢 CONGOSCEIXZY: RIMENZI, KITIENO E DIAGNOSTICK | PROJECT AMALYSIS AND ENGINEERING 📝 PROGETTAZIONE | DESIGN 🛂 MATERIALI E TECNOLOGIE | RESTORATION MATERIALS AND TECHNOLOGY

## assorestauro<sup>\*</sup>

#### WHO IS ASSORESTAURO ?

Established in 2005 as the first Italian association of manufacturers of materials, equipment and technology, suppliers of services and specialized companies, Assorestauro represents the Italian sector of restoration and internation of material heritage. It is a reference in the domestic and international market for any business wishing to work in the conservation sector in Italy, to be intended in its broadest sense, that is, as a synthesis of the various disciplines involved, of the professional specialists, of the avail-

able technology and of the growing business community. If examined as a whole, the sector accounts for a large market share and has a meaningful impact on tourism, industry and green restoration.

#### WHAT ARE ASSORESTAURO'S GOALS ?

Representing manufacturers of materials, equipment, technology, specialist companies, designers and suppliers of services for analyses, surveys and diffusion, Assorestauro offers its members information, assistance, advice and training both directly and through its partners, with a view to building a consistent and unitary orientation to the different sectors of the restora-

tion industry at national and international level. As a Mational Trade Association for the Restoration Sector, Assorestauro is aimed at coordinating, protecting and promoting the interests of the restoration sector and it represents before the outer market, in Italy and abroad, shared views about technical and economic issues, as well as image, by carrying out targeted activities in such relevant fields as information and communication, protection of common interests (economy, imation and communication, protection of common interests (economy, image, reference standards), research and development, promotion.

#### WHAT DOES ASSORESTAURO DO?

Several activities aimed at promoting the professional skills in the restoration sector fall in the scopes of the Association. They include diagnostic analysis, design and on site execution, producing technology and materials, as well as contributing technological innovation, with the support of Institutions, Universities, Agencies for the protection of cultural heritage and ICE, the Agency for the internationalization and the promotion abroad of Italian businesses. This class of actions includes both promotion in Italy (conferences and training seminars, trade exhibitions, courses and similar initiatives) and abroad (foreign missions, training, bZb encounters, similar initiatives) where member companies are directly involved and offered the chance to study and penetrate foreign markets through projects oc-sponsored by national and international bodies.

#### CHI E' ASSORESTAURO ?

È la prima associazione italiana tra i produttori di materiali, attrezzature e tecnologie, e i fornitori di servizi e imprese specializzate, nata nel 2005 per rappresentare il comparto nazionale del restauro e della conservaziona de patrimonio materiale. Assorestauro è il punto di riferimento sia nazionale sia internazionale per chi voglia affacciarsi al mondo della conservazione italiana, internazionale per chi voglia affacciarsi al mondo della conservazione italiache in esso convergono, delle professionalità specializzate, delle tecnologie e della crescente imprenditorialità. Un comparto che, se analizzato nel suo complesso, rappresenta una forte componente di mercato ed ha importanti ricadute nel settore turistico, dell'industria e della Green Restoration.

#### OAUALI SONO GLI OBIETTIVI DI ASSORESTAURO ?

In rappresentanza di produttori di materiali, attrezzature, tecnologie, imprese specializzate, progettisti e fornitori di servizi per l'analisi, il rilievo e la divulgazione nel settore del restauro, Assorestauro fornisce alle imprese associate servizi di informazione, assistenza, consulenza e formazione sia direttamente, sia attraverso i propri partner, al fine di dare coerenza e unitarietà di indirizzo sia attraverso i propri partner, al fine di dare coerenza e unitarietà di indirizzo

alle diverse anime del settore sia a livello nazionale che internazionale. Come Associazione del Sestauro, Associazione di Categoria Mazionale per il comparto del Bestauro, Associazione di Categoria Mazionale per il interessi del settore produttivo di competenza e rappresenta, in Italia ed all'Estero, le posizioni comuni sul piano tecnico, economico e di immagine attraverso attività mirate nell'ambito degli obiettivi di inquadramento di comparto, informazione e comunicazione, tutela degli interessi (sui piani economico, dell'immagine, dell'evoluzione normativa del Settore) ricerca e sviluppo, promozione.

#### **COSA FA ASSORESTAURO ?**

Le finalità associative si esplicitano attraverso molteplici attività che promovono le professionalità nel settore del restauro, dalla fase diagnostica e progettuale a quella dell'esecuzione in cantiere, passando per la produzione di tecnologie e materiali, anche con forti connotazioni tecnologiche innovative, e con il supporto di lstituzioni, Università, Organismi di Tutela dei Beni tive, e con il Supporto di Istituzioni, Università, Organismi di Tutela dei Beni Culturali e ICE Agenzia per la promozione all'estero e l'internazionalizzazione

delle imprese italiane.
Rientano in questa tipologia di azioni sia attività promozionali nazionali Rientano in questa tipologia di asioni sia attività promozionali sia iniziative (convegni e seminari formativi, fiere di settore, corsi e similari) sia iniziative promozionali (missioni all'estero, formazione, incontri b.Zb, cantieri di restauro) che vedono in prima fila le aziende associate, alle quali sono offerte opportunità di internazionaliszazione e de associate, alle quali sono offerte opportunità di internazionali resteri attraverso progetti cofinanziati da enti nazionali e studio dei mercati esteri attraverso progetti cofinanziati da enti nazionali e





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