RESTORATION OF CULTURAL HERITAGE: TECHNIQUES AND SUSTAINABILITY

18TH-24TH MARCH 2018

Project supported by ITA - Italian Trade Agency & Assorestauro

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The Italian Trade Agency - ICE is the Government agency that supports the globalization of Italian firms, implementing the strategies of the Ministry of Economic Development.

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The Italian Trade Agency - ICE sustains 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 attracting foreign direct investments.

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The Italian Trade Agency - ICE works closely with the Italian Regions, the network of the Italian Chambers of Commerce, business organizations and other public and private entities. The Italian Trade Agency - ICE headquarters is in Rome and its network of offices around the world act as “Trade Promotion Offices and/or Sections” of the Italian Embassies or Consulates.
WHO IS ASSORESTAUDO?
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 ASSORESTAUDO’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 ASSORESTAUDO 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.
MILAN AT THE ROMAN TIMES

Two pilot projects: Amphitheatrum Naturae and the Basilica of S. Lorenzo Maggiore

The city of Milan is famous all around: it is one of the capitals of fashion and design, the main Italian economic centre, headquarter of the Italian Stock Exchange, an important centre in publishing, theatre and music, a melting pot of cultures.

Milan is surely linked to the modernity; its skyline, the modern architectures, the efficiency, but rarely its history is mentioned and, above all, the ancient one. Founded from a Celtic tribe at the beginning of the VI century B.C., Milan gained more importance when it became the capital of the Western Roman Empire with the name of Mediolanum. This important past left in the city marks that show the stratification of its magnificent monuments, more or less visible, from the archaeological to the architectonic and artistic ones.

The management of this enormous cultural heritage has followed during the time different steps: from the end of the XIX century when studies, researches and excavations revealed, for the first time, that rests of that Roman monuments survived the spoliations and the construction overlapping; until the post-war period when, during the reconstruction works, a portion of the Imperial Palace, the “Erculee” thermal baths and early Christian episcopal complex, was recovered.

The attitude of the city towards its archaeological heritage was not always finalized to the best conservation and fruition of the assets because the interventions had to adapt to the frenetic rhythms of a city in full economic boom. As Guido Piovene said in his Viaggio
In conclusion, for a long time this heritage was not managed in the proper way or it has just been forgotten.

(1) Trad: “Milan is an utilitarian city, demolished and rebuilt according the needs of the moment, for this reason not succeeded in becoming ancient.”
Nowadays Milan is living another season, characterized by the rediscovery of its historical treasures, the so-called “Milano Romana”, thanks to the collaboration of different public and private entities coordinated by “Soprintendenza Archeologia, Belle Arti e Paesaggio per la città metropolitana di Milano” and by the Superintendent, architect Antonella Ranaldi.

This ambitious project is composed by some initiatives such as “Milano archeologia per Expo 2015. Verso una valorizzazione del patrimonio Archeologico della città di Milano” following by “Mediolanum MMXV”.

The aims of these projects are linked to the study, the relief, the conservation and the development of some Roman monuments or Archaeological rests such as S. Eustorgio, S. Lorenzo Maggiore, the Imperial Palace, the Roman Theatre, the Roman Forum, the Circus the Amphitheatre, and how to make in communication these places.

FINANCIAL SOURCES
It is important to make a focus about the kind of financing of these activities, represented by the sponsorship.

The new Italian “Codice dei Contratti Pubblici” improve the public/private partnerships, also for the protection and valorisation of cultural assets. The article 19, establish the threshold value of 40,000 euros as the limit, below which no specific formalities are required for awarding the sponsorship. Over the limit value, the procedures for accepting a private sponsorship are simplified. The Public Administration needs to give evidence of a proposed sponsorship or to the sponsorship search notice, through its official website, for a period of thirty days.

The partnership with the financial operator can be agreed after this period of time, due the financial and moral requirements given by the Law.

The article 115 of the Code refers specifically to the Cultural Assets, confirming the validity

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(2) For further information about these and other project it refers to website www.milanoarcheologia.beniculturali.it

(3) D.Lgs 50/2016.
of the article 9 and the role of the Ministry of Culture (MIBACT) to control the Sponsor from the design phases to the intervention on site. The so-called Project Financing can also be extended to the management of the cultural assets for a due period of time after the restoration, according to the agreement. The simplification of the public-private partnership originates from the necessity of managing and preserve the huge Italian Cultural Heritage, widening the participation of the private sector. (4)

Three kinds of contracts are available: the “pure sponsorship”, which refers to a direct private grant; the “technical sponsorship”, related to funding the restoration process from the design to the worksite; the “mixed” one, resulting by the combination of the previous. Among the projects suggest by the “Soprintendenza Archeologia, Belle Arti, Paesaggio”, for which are used this kind of private financing, especially the first one, are remarkable the cases of “Amphitheatrum Naturae” and the one developed on S. Lorenzo Maggiore.

AMPHITHEATRUM NATURAE

The Amphitheatre, whose ruins are accessible from the Antiquarium “Alda Levi”, is hidden in a block of buildings among de Amicis street, Conca del Naviglio street and Arena street. It was the third largest amphitheatre in the world, after the Flavian’s in Rome and the one in Capua and it was built during the I century A.C., out of the city wall. According to the reconstructions, it should have an elliptical shape of 115x125 m and an height of around 38 m, divided on 3 levels and a final attic floor.

During the V century, the monument was disassembled and part of it was used to build other constructions such as the foundation of the near Basilica of S. Lorenzo Maggiore. Nowadays, the Amphitheatre ruins are collocated in an urban park. The project proposed by the Soprintendenza, called “Amphitheatrum Naturae”, consists in recreating the shape of the missing building through vegetation, terrain modelling and green elements. It will be used trees of box, cypress, privet, and other historical species.

"The care, custody and maintenance of historic sites can find new design solutions in the symbiosis of ruins and greenery, with a landscapist, romantic, architectural approach respectful of the principles of conservation, authenticity, reversibility. While adding or integrating architectural elements is not a very convincing solution, greenery opens the way to creating overtly transient settings capable of improving the enjoyment and enjoyability of a landscape of archaeological ruins. Of course, some precautions must be taken; for instance, trees must be planted into buried vats to avoid contact and the risk of root infestation, and vestige-friendly species must be chosen... Vegetation, terrain modelling and green furniture can be designed purposefully for archaeological sites...

In line with this idea, I suggested to create a viridarium to revive the archaeological park of the Roman amphitheatre of Milan. An unprecedented Amphitheatrum naturalis of ancient topiary species (boxwood, myrtle, privet, cypress), the large elliptical garden replicating the shape of the missing amphitheatre will match and integrate the archaeological finds on site, that is, some stretches of the radial walls of the Roman monument".

From: Antonella Ranaldi, Green Archaeology. Landscapes, gardens, ruins. Integrating voids and images in archaeological sites, QA_A06_02 Lebanon

The area in which this experiment of natural reconstruction will be realized, is given in load for use from the Municipality to the Soprintendenza for 5 years, in order to realize the intervention. It will be financed thought the benefit deriving from advertisements collocated on a blind wall of De Amicis street.

This project, strictly connected to the Basilica of San Lorenzo, represents the desire of the Soprintendenza to create a unique itinerary from the archaeological park, to the church and the Park of the Basilica.
THE BASILICA OF S. LORENZO MAGGIORE

The Basilica of S. Lorenzo Maggiore is located close to the Amphitheatre and represents one of the most ancient church of the city. It was built when Milan was the capital of the Roman Empire, around the end of the IV century and the beginning of the V, in a strategic position: out of the city wall, near Porta Ticinese, the main access to the city from Pavia. The construction history of the church is very complex and a lot of details and information are unknown yet.

In front of the Basilica, The “Saint Lorenzo columns”, sixteen Corinthian columns, represent the edge of the old “quadriportico” at the entrance of the church.
Repeatedly revised to face destructions, fires, collapses(5), S. Lorenzo maintains its tetracoch central plan with an ambulatory on the ground floor, to which corresponds the matroneum on the upper level. Around this central plan, various chapels had added during the time: S. Aquilino’s, S. Ippolito’s, Cittadini’s, S. Sisto’s, S. Giovanni Battista’s and Sacra Família’s.

The restoration of the monument is necessary because of the inadequate maintenance and the dated previous interventions (Ambrogio Annoni in 1913 discovered the stone blocks deriving from the amphitheatre under the S. Aquilino’s chapel and Gino Chierici, from 1936 to 1940, coordinated the restoration of all the building).

This necessity has paved the way to the cooperation between Monsignor Gianni Zappa, parish priest of the church, and the Soprintendenza, to promote the harnessing of the

(5) The present dome was built in 1573 after the previous collapse of the vault following the design by architect Martino Bassi.
In this period, the pilot project is starting. It is based on the restoration of the S. Aquilino’s chapel with its magnificent mosaics thanks to the financing from a private sponsor through the benefit deriving from advertisement (TMC Pubblicità). The first intervention is on the mosaics, the frescos and the ancient painting in the chapel.

In conclusion, the intervention of all the church (consisting also on the restoration of the decoration elements, the resolution of the humidity problems, the illumination system and the creation of an exhibition itinerary of the finds through the matroneum will be divided in more steps, in more construction sites, for which is necessary finding sponsors and financings. One of these private sponsors will be “Fondazione Cariplo” and some of the works in the church will be realized thanks to the private fundraising.
SALA DELLE ASSE
A successful example of laser cleaning

THE SFORZA CASTLE
The constructive history of the Sforza Castle in Milan started in the XIV century when Galeazzo II Visconti ordered the construction of the first defensive core. Then the castle was transformed, renovated and enlarged, during the following centuries, by the Visconti and the Sforza's families and then by other foreign lords, until it became the square plan castle as it appears nowadays.

It was considered, at the beginning, only a defensive fortress, but with the shifts in power and the changes of the needs, the structure was enriched with new residential functions. The Sforza domination represented the golden age for the castle, in which there was an increase of the decorative system of the building: from 1450 Francesco Sforza started the reconstruction of the castle and turned it into his princely residence; his son Galeazzo Maria Sforza and his daughter-in-law Bona of Savoy, from 1466 to 1476, pursued the works increasing the decorative system. Ludovico Maria Sforza the 4th son of Francesco, better known as “Ludovico il Moro” one of the greatest sovereign of Milano and patron of Leonardo da Vinci and Bramante, presided over the final and most productive stage of the Milanese Renaissance. He developed the painted decorations, as a celebration of the power of his House, visible especially in the rooms of the Corte Ducale.

This part of the Castle, in which we can find the Sala delle Asse analysed in this article, was used on one side as residential area from the Duke and his family, on the other side for meetings and parties.

After the Sforza domination, the Castle lived an extended period of unstoppable decadence, during which it went through radical changes: it was used as a military fortress and prison and then as a barrack, during this periods many rooms had been strongly modified, without considering their historical and artistic relevance.

This status of carelessness continued until 1893 when the architect Luca Beltrami, with the help of the German art historian Paul Müller-Walde, started its restoration. The restoration was strongly wanted by the architect who fought for avoiding the destruction of the castle proposed by many locals. Milano after centuries of foreign domination wanted to delete...
its past by destroying the symbol of the old powers and replace it with a new residential neighbourhood.

THE SALA DELLE ASSE

The Sala delle Asse is located in the northern wing of the Sforza Castle, on the ground floor of Falconiera’s tower. It is a broad room, with a square plan, in which each side measures fifteen meters. It is covered by a vault moulded to sixteen lunettes, it is enlightened by two windows, one on the northwest side and the other on the northeast and it communicates with the other rooms of the ducal apartment – The Sala Verde, la Sala dei Ducali and little rooms behind the lodge of Ponticella - through three doors.

The characteristic appellative with which it is commonly known, “Asse”, from the end of XIX century, maybe derived from the wooden panels that covered, during the Sforza domination, the lower part of the walls of the room.

In the Renaissance palace is not infrequent the use of wooden panels to insulate a room from cold and humidity deriving from a north exposition to the outside. This escamotage was useful also to make a room more comfortable and decorate the space.

The most relevant characteristic of the hall is linked to its painting decoration, commissioned by Ludovico Sforza to Leonardo da Vinci in honour of his dead young wife Beatrice D’Este.

At the vault and the lunettes are decorated with paintings that represent sixteen mulberry tree trunks which are originated from the upper part of the wall and branch off along all the vault. All the branches on the Sala’s trees are rich with foliage and are cleverly intertwined to form a luxurious pergola. Among the branches there are twines of golden strings called Nodi Vinciani, that remind wicker baskets.

On the centre of the vault there is a coat of arms with the combination of the Sforza and the Este families’ one. The only non vegetables elements in the scene are four plaques, positioned on each wall and inscribed with references to historical and political events that
took place during the Ludovico Sforza sovereignty. Probably, the room decoration was not completed because of the defeat of Ludovico Sforza.

THE RESTORATION: FROM PAST INTERVENTIONS TO LASER CLEANING

The paintings in the Sala delle Asse were discovered during Luca Beltrami’s restoration, buried beneath many layers of whitewash, and this intervention was coordinated by the painter Ernesto Rusca, who integrated large part of the deteriorated decoration. Another important discovery was done by Beltrami: a monochrome drawing in the northern corner, made in charcoal, appeared on the lower walls. This discovery confirmed that a portion of the Sala delle Asse never progressed beyond the underdrawing stage.

In the ‘50s another restoration took place, realized by Ottemi Della Rotta who removed almost all the repainting of the previous intervention.

In 2013 a new restoration project has begun and is still underway. The conservation project is supervised by Dr. Claudio A. M. Salsi, President of the Scientific Committee for Restoration of the Castle, and carried out under the direction of Dr. Michela Palazzo of the Regional Directorate for Cultural Heritage and Landscape of the Lombardy. The restoration saw the advice of the Opificio delle Pietre Dure for the development of the intervention and of conservation strategies.

During the preliminary interventions other tracks of preparatory drawings realized in charcoal and incisions on the fresh plaster have been discovered on every wall. This demonstrates that, in Leonardo’s idea of the composition, the trees had to grow from the rocks, maybe ruins, and that the decoration system had to originate from 2 m from the floor.

The relevance and complexity of the case have required the use of innovative techniques including the laser cleaning on the decoration surfaces in order to remove scialbature.
(whitewash), altered retouches and organic fixatives applied during past restoration interventions, biological infestation and soluble salts. Compared with other techniques, the laser allows more versatility, accurate control and minimum surface damage in fact it provides a selective elimination of unwanted layers without any mechanical contact with the surface and the preservation of superficial Texture.

The used lasers have been provided by the Conservation Technologies Department of the El.en. Group.

The cleaning of painted surfaces represents a big challenge for laser cleaning and three kinds of laser have been used taking into account two main parameters: the variation of the wavelength and the variation of the pulse duration.

The Nd:YAG Q-switched laser (EOS QS), with its characteristic wavelength of 1064 nm, allows to work using two different pulse durations: Q-switch pulse (15 ns) and Short Free Running (30-100 μs) and it is flexible and useful to solve many cases of cleaning on different materials.

The other Nd:YAG laser (EOS 1000 LQS) has a pulse duration optimized for the cleaning of Cultural Heritage: the Long Q-Switch one (100 ns). This laser was designed and tested for the first time on the gilded bronze of the Porta del Paradiso, by Lorenzo Ghiberti, in the Baptistery of Florence, so it is suitable for particularly accurate interventions.

The last employed system is an Erbium laser (Er:YAG – Light Brush 2). Its technology is based on the strong absorption of the wavelength at 2940 nm by surface layers that contain OH bonds. This feature makes it particularly suitable for the removal of repainting, varnishes and patinas from wall paintings, in the highest respect of the inner layers.
The Fondazione Prada - Prada Foundation was founded by the Italian fashion house in 1993 as a cultural organisation. In 2008 Prada felt the need to open a permanent establishment in Milan, its birthplace and perhaps the most metropolitan and international city of Italy. The Foundation purpose is to offer people new learning possibilities in order to develop ideas and increase art in any shape, a constantly evolving cultural programme. This vision finds a complete synthesis in the spatial composition of Fondazione Prada, the headquarter designed by OMA-office for metropolitan architecture, headed by Rem Koolhaas, and located in an former gin distillery.

The industrial complex was built in the 1910’s to house the “Italian Spirits Society” distillery - hence the name given to the golden building as “Haunted House - the house of the spirits” - and it consists of very different buildings: warehouse, silos, offices and plants for the production of liqueurs. It is located in the south-west part of Milan, in Largo Isarco, and it spreads over an area bigger than 19,000 m². This district is slowly becoming a place of emergent presences - as Smemoranda or Jannacci dormitory - but there is a lack of coordination among them so Fondazione Prada has to take the guide role in the transformation of the entire area.

OMA’s project is more than an architectural practise, it is an opportunity of urban development. The former distillery is a modest space that became the symbol of Milan transformation in the last 30 years: from a manufacturing city to a tertiary city. This is the widespread reappropriation: spaces of production must find new ways of being part of the collective city life.
In this intervention OMA approaches the theme of preservation but thinking at it more as memory than as a state of nostalgia for the past. Preservation is the chance to develop the building beyond a presumed originality. According to Rem Koolhaas “The Prada Foundation’s project is not a conservation project and not even the design of a new architecture. These two dimensions coexist while remaining distinct”. It is a process of permanent interaction, offering an ensemble of fragments that will not congeal into a single image, or allow any part to dominate the others. The most important aim of Fondazione Prada project is to create a diversity of spaces for presenting art, those spaces are meant to be “a collection of artworks that meets a collection of architectural types”. The thinking behind it is to offer everything that a contemporary museum needs, minimizing areas designed to services and collateral activities.

To the seven original buildings, the masterplan has provided the new Podium, Tower and Cinema, each one characterized by a different architectural project. The resulting outdoor space is fragmented into a series of small courtyards, some of them at the ground level and some sloping, that contribute to create an heterogeneous visit itinerary and to guide the visitors’ fluxes. “We didn’t work with contrast but, on the contrary, we tried to create a
situation where old and new can work very seamlessly together and sometimes are even
actually merged together so that you cannot tell whether you are in a new or an old situation" explained Rem Khoolas.

The project is based on a great research work, looking for both innovative and traditional solutions without preconceptions, choosing best materials for their functionality and their aesthetic performance. It creates a fragmentation of the parts in which spaces are defined by different materials.

This accurate investigation also allowed to face a complex construction-site: invasive interventions for the construction of the new buildings combined with delicate and precise operations for the protection of the existing ones. Particular attention was paid to their structural performances improvement and to the response to seismic actions. Seismic expansion joints have been inserted between buildings, keeping them separate and guaranteeing structural freedom of movement.
AS IN AN ARCHITECTURAL PROMENADE...

The buildings placed at the entrance are designated as offices and library. They have been deliberately subject to a subdued restoration which puts their Art Nouveau style provocatively in contrast with the luminous signs that shows the words Fondazione Prada. Proceeding there is the building resulting from the fusion between the Haunted House and the Podium. The first is a former industrial building which shapes are underlined by a 24-carat gold leaf cladding. The architect says: “to me the most exciting and now visible effect of it is how the gold and the reflected light of the gold contaminates the whole environment”. Here is hosted a permanent exhibition of the sculptors Robert Gober and Louise Bourgeois. Instead, the Podium is designed to house temporary exhibitions and develops around the Haunted House, defining a space completely free from structural elements and glazed on three sides.
The building hosting the Cinema is a standalone structure, it has been rebuilt in the same position and with the same volume of the previous collapsed one. The Cinema is a captivating architecture: it is partially hypogeous and its facades are camouflaged by mirrors towards the inner courtyard.

The Tower building complete the masterplan. It is a out-of-scale construction spread over eight levels, plus a terrace, done in open-face white concrete. This building is made with the only purpose of showing art, according to Khoolaas “Art feels different on the ground than it feels on the 10th floor”, so “every next floor will be one metre taller, so that will have a very varied effect on the artistic content”.

The complexity of the architectural project contributes to the development of an open and constantly evolving cultural programme, in which both art and architecture will benefit from their mutual challenges. The quality of the intervention is mainly due to the constant and accurate dialogue between old and new.
PALAZZO DELLE SCINTILLE
A connection between old Milan and the new skyscrapers city

The Palazzo delle Scintille was built between 1922 and 1923, inaugurated celebrating the annual car show and the realisation of a permanent and autonomous Fair Company. The building, also known as Sports Palace or Pavilion 3, was designed to be a link between the surrounding urban area and the new exhibition centre, nevertheless keeping its own independent drawing. It is a free-standing element inside the infrastructural modernization which has involved Milan during the 1920’s and the 1930’s and has resulted in the establishing of a sport village. Its construction was the occasion to display how the Italian building technique had reached the same level of foreign countries.

The Pavilion 3 is extended for 10.000mq on a rectangular diagram (104m x 81m with a mixed concrete-bricks structure) covered by an iron and glass dome described as an “inventive technical conception” where the iron structure was supported by a glass tambour. The dome was rebuilt after the Second World War bombing. This architecture was conceived likewise the industrial ones, based on a rigid structural grid softened with decorative cement items. Those reshaped classical forms into charming Art Nouveau tested elements. Facades were designed to be symmetrical, where windows scan a regular lands and grooves play. The interior was planned by the architect Paolo Vietti Violi to be a mul-
tifunctional space, a big empty room adaptable as showroom, racetrack but also concert and conference hall. It was a modern space, comparable to major expo spaces around the world (Paris, London, New York) sharpened full-height by a ring of slender béton fretté pillars (9,50m height and 0,50m diameter).

Over the years the Palazzo delle Scintille has been involved in several changes, addition and demolition, which changed its main aspect absorbing the building inside the neighborhood and leaving visible only the East Front, facing VI Febbraio Square.

The demolition of the exhibition centre has freed the three facades which now play a connection role between the old city and the new district of CityLife, characterized by its unbridled modernity.

To give new glory and to safeguard the Pavilion 3 inside the fast evolution of this area in March 2017 started the requalification proposal which involved Studio Berlucchi (architectural project) and Italiana Costruzioni - Arup Italia (consultancy) with the aim of a preservative project able to enhance this extraordinary architecture after years of neglect, restoring its part as active player in citizens public life.

The project focused on the four facades working on their decorative items and on the window frames, fundamental for the building compositional balance and its relation with the neighborhood.

In the first instance an experimental worksite has been realized on a 5m full-height area located on the front East side. The pilot worksite was divided into three stages:

- phase 1: investigation, mapping, generic material sampling and laboratory testing in order to understand main surface deteriorations and alterations;
- phase 2: representative samples realization on surfaces and window frames, by applying different techniques, due to ensure operations compatibility and feasibility;
- phase 3: surface cleaning and restoration, pilot worksite conclusion.

After this preliminary study the project has been developed to answer the building damage necessities, most of whom produced by anthropic activities. The different facades presented more or less the same decay typologies and a general surface degradation with deposit, biological colonization, efflorescence, staining and soiling due to metal components
presence, but also hair-crack on finishing cement plaster layer, improper grouts operations or scratches. Decorative elements have been frequently subject to missing part and disgregation, which compromised the original shapes recognizability, added to this an ochre acrylic paint had been laid out in the recent past and has quickly formed a film, boosting the decay situation. The West front presents also stains and spurts caused by bitumen application on the surfaces and degradations are marked by addition and demolition operations. In the same way fronts South and North present signs of improper anthropic action that led to a strong presence of decaying structures, loss of modeled parts and irregular grouts or shaves.

In order to begin effectively the restoration, all the past additions have been removed starting cleaning operations, articulated into three accuracy levels:

1. Plasters typing, which needed bandages using acrylic resin or animal glue and overrun micro and macro flora removal by the application of a selective action exterminator;
2. Salt extraction through compress, deposit and paint removal by using a elicoidal micro air abrasion cleaning system assisted with manual dry-cleaning;
3. Chemical cleaning by reagent application through pad or brush for oxides removal and through compress for oil, paint and wax.

The next steps of the restoration project envisaged the surfaces consolidation using ethyl silicate, applied by brush or by pad, and consolidating injection if necessary. Those preliminary proceedings have allowed the conclusive operations: material loss reintegration with compatible mortar and plaster, hair-cracks grout and decorative missing parts replacement with off-site realized new elements. New ones are characterized by a topcoat comparable to the existing finishing layer, made recognizable shaping them as simple volumes. A parallel project has involved the iron window frames which present a heterogeneous state of conservation, those have been restored or replaced with identical ones. To guarantee natural micro-ventilation and prevent the detachment phenomena acceleration the creation of specific splits have been made in proximity to lower and higher elements.
The Palazzo delle Scintille is a perfect example of how well an old building is able to innovate itself, playing a new active role as public space inside the urban contest in which it is located, thanks to an efficient restoration project.

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CARMINE WORKSITE: AN OPEN-LAB INSIDE THE SPACES OF THE EX-CHURCH OF THE CARMINE

The church was established in 1334 by the Carmelite Order in Piacenza. The complex was designed with simple shapes according to the habits among mendicant orders. After their abolition in 1805, the area had been adapted to different uses, hospital, storehouse, barrack, slaughterhouse but also as the Fascist Party Headquarters and finally as a public office. It has been definitively abandoned in 2006.

It is built near Milanesa Gate, a strategic position in proximity to Palazzo Farnese and between the historic town centre and the main city axes roads.

The restoration of the church is part of a bigger and more complex project which involves the urban growth of the whole north sector of the city: Piazza Cittadella redevelopment with the creation of an underground parking, the creation of a new covered market and the rehabilitation of important military and public buildings. The intricacy of this project lies in finding a balance between construction peculiarities and the definition of a new urban function. The purpose of the restoration intervention must be at the same time the enhancement of the built heritage and the identification of a compatible intended use, able to restore their roles as active player in the every day city life.

It will be a complex building-site due to the built heritage prestige and strict functional restrictions to which it is subject, an ambitious and innovative project which aim is to give back to the city one of its forgotten jewels.

The redevelopment of the Church of the Carmine is articulated between two different settings: restoration and structural rehabilitation, on one side, and functional reuse, on the other. It is going to be a double project intended to understand how the construction was and how it is nowadays because the re-functioning programme can only be the natural result of intervention choices. This has to be a compromise, the optimal way to find a balance among the stakeholders. Through the years the building has changed its shapes and its intended uses according to its users’ needs, the “Cantiere Carmine” will be the next step in the factory life development.
THE RESTORATION PROJECT

The restoration project started from the laser scanner survey, necessary to study the church’s factory in each of its parts. In addition, a careful and integrated diagnostic study plan (Shave test, georadar and videoendoscope, multichannel Masw test, methodological analysis on wood species, resistographic investigations, ...) that allowed to identify precise intervention methodologies on the various building components in a timely manner: roof, vaults, elevation and foundation structures. The whole project has been elaborated taking advantage of highly competent figures such as A.T.I.Edilstrade Building SpA (parent company), IMPRESA CELLA GAETANO SRL (principal), Kairos restauri S.n.c. di Luca Zappettini & C. (principal).

The intervention concerning the structures of the former Church of the Carmine has been designed with the dual objective of: resolving building structural problems and improving its behavior towards seismic activity at the same time. This was possible thanks to a careful worksite organization and the use of innovative technological solutions and restoration techniques.

The project main operations concern both exterior and interior parts of the building and they are very specifics and differentiated: closing of the putlog holes to avoid nesting,
punctual brickwork integration and demolition of incoherent cement additions, surfaces consolidation, reopening of windows and doors, especially those that are going to serve as emergency exits, restoration or replacement of windows and frames,... Moreover, on the outside the main access stairs will be rebuilt creating a concrete structure covered with pink granite; there will be also two ramps to guarantee accessibility to people with disability too. Inside, a specific restoration project has been focused on the surfaces; the vertical stratigraphy showed many layers of plaster, that requires an integrated action plan: biocide treatment, cleaning with EDTA or ammonium carbonate, desulfitation with barium hydroxide packs and plaster consolidation (filler injections, resin pivots, mortar grouting,...) where it is necessary.

Moreover, a Scheduled Maintenance Plan has been drafted to ensure the building protec-
tion even after the restoration project because built heritage preservation is guaranteed only through a permanent attention towards the building itself. It is necessary to overcome the concept of restoration as an autonomous activity, making it instead part of the overall building life. The Scheduled Maintenance Plan is therefore divided between monitoring activities, such as routine inspection operations, and maintenance activities, like minor interventions to ensure building protection avoiding in this way the real restoration.

THE FUNCTIONAL REUSE

The Cantiere Carmine project was presented to citizen during an exhibition organized at Palazzo Farnese because their involvement during the whole transformation process is considered as essential. The Church of the Carmine is a prestigious space which offers to the city great growth possibilities most of all thanks to its strategic location and its natural aim to be a place for the community.

Past experiences have taught that a site will be able to preserve its importance as long as it can respond to its users’ needs, without being denaturalized. In this context the Church of the Carmine has been a benchmark for collective life in past centuries but now it is going to carry out its mission transforming itself into an open-lab.

The project concerns the construction of an open laboratory, a multifunctional space designed to host processes of a continuous urban transformation, a place for exhibitions, events, meetings but also mobility and logistics.

There will be shops, a bar, areas designed both to coworking and to individual activities. The creation of a loft space near the apse makes this space even more flexible.

The new Church of the Carmine will be accessible to both citizens and firms, but also people passing through. It will necessarily have to be versatile, adaptable on a case-by-case basis to single needs.
POST-EARTHQUAKE RESTORATION OF THE CLOISTER OF THE “SECOLARI” IN THE COMPLEX OF SAN BENEDETTO IN POLIRONE

PREMISE
The monastery of San Benedetto in Polirone has been the subject of a substantial restoration (2006-2012) but unfortunately a few months before the ending of the restoration works, the earthquake damaged seriously all the buildings of the monastery. Such damage has made it necessary to survey all the parts of the complex with the aid of a laser scanner technology and several analyses to further understand the conditions of all bearing structures (timber or masonry structures), achieving a high level of knowledge of the whole complex. The earthquake hit the hardest in the portions of the complex called “Ala Giorgi” and the “Secolari” cloister, where the structural situation was already critical and the restoration was not accomplished yet.

BACKGROUND HISTORY
The monastery of Polirone, from its foundation in 1007 up to its suppression in 1797, was a great centre of European religious, cultural and artistic life. The beginning dates back to the founding of the Abbey by Tedaldo di Canossa in this area of strategic importance, especially in earlier centuries, because of its position dominating the course of the river Po. In the year 1077 the pontiff Gregory VII put the abbey under the spiritual jurisdiction of the monastery of Cluny, to which the monastery of Polirone was strictly linked throughout Middle Ages. However, the life of the Abbey was initially related to the Canossa family which founded it and later to the Gonzaga dynasty, whose rise to power in these lands and exerted control also over spiritual aspects of the monastic community. The association with
the congregation of Santa Giustina of Padua in 1420 marked the beginning of a process of renewal in which there was the rebuilding of a great number of the monastery buildings, including the complex of San Benedetto in Polirone, later redesigned by Giulio Romano in 1540. Renaissance represented a new lease of life for the monastery, characterized by a lot of renown artists of the Italian Renaissance who worked at the Abbey as Correggio, Paolo Veronese or Giulio Romano himself.

THE CLOISTER OF THE SECOLARI
Cloister was among the most characteristics areas of the monastery because it served as a connecting function and it represented the place where the great part of the monks’ life took place. The majority of large monastery buildings such as San Benedetto in Polirone, had more than a cloister and each of which was used for specific activities. At present in San Benedetto in Polirone, there remain three cloisters: Saint Benedict’s cloister which is adjacent to one side of the main church, Saint Simeon’s cloister created in 1458 and the cloister known as that of the “secolari”. The third cloister was built in three different stages: the first before the fourteenth century, the second dating from 1474, characterized by the connection of the pre-existing buildings with the porticoes and the construction of corridors above the east and north sides, and finally the construction of the great staircase and the enlarging of all the cloister windows at the end of the seventeenth century. Cloister of the “secolari” is a designation which goes back to the sixteenth century when the ground floor of the east and south sides was used as a guest quarters for the poor and for pilgrims, instead the upper floor accommodated the higher ranking guests.

The cloister develops on four sides characterized by round arches supported by marble columns, masonry vaults in the porticoes, ground and in the upper floors while the attic has timber structures as roof.
CONSOLIDATION AND SEISMIC IMPROVEMENT

The earthquake of May 2012 provoked serious consequences on the cloister, in particular on the south and east wings, used as warehouse of the adjacent civic museum. The previous interventions aimed mostly to an overall re-functionalization and a seismic improvement of the bearing structures. Obviously, the first priority was to secure the structures from further decay and collapse, so the arches and the main entrance of the museum were supported with wooden provisional structures and new ties were located at the extrados of the vaults at the first floor in order to contrast the overturning of the east façade.

The next stage was the geometrical survey of: all ties in place (position, dimension and state of conservation), vaults, masonries, roof structures and the map cracking order to identify all the pre-existing weaknesses.

Such surveys regarding the cloister, have been carried out through a BIM (Building Information Modeling) approach, involving the generation and the management of a parametric three-dimensional model. Such approach has allowed to divide the building in categories of objects called “families”) and create a dynamic database of all parts of the cloister, identifying problems before executions phases.

The main structural weaknesses identified were attributable to: masonries not connected to each other’s and not toothed into the pre-existing structures as consequence of several interventions over time, insufficient number of ties that were not able to restore an effective transversal containing action and finally the presence of prompting roof structures.

Concerning the roofs, they were completely restored and seismic improved with the insertion of a new wooden curb in the south and east wings of the cloister and a metal’s one in the norther and west sides. Such intervention was necessary to connect the perimeter walls each other and with the wooden trusses of the roof and to ensure the “box behaviour” of masonries structures meaning that the building acts as a jointly assemblage of walls and roof. The whole intervention was improved by the insertion of a series of steel
cross elements under the bent tiles, working as bracing elements. Furthermore, every joint of the existing roof structures, needed to be verified and evaluated on a case-by-case basis and where appropriate, strengthened with steel elements. In case of the absence of a bottom chord in roof structures, it has been added a steel tie in order to improve the mechanical behaviour reducing acts on the masonries and preventing out-of-plane responses.

As regard the cracks on masonries and vaults, every crack was accurately opened along its entire length, trying as more as possible to preserve original plasters and decorations, then a consolidating mortar was injected through the crack in order to re-establish the continuity.

Moreover, the material filling the sides of vaults was removed and replaced with lightweight material connected to the walls and the mechanical behaviour was also improved with the insertion of new ties, working as a relevant protection element, able to restore an effective containing action.

All wooden architraves have been verified and replaced, where appropriate, by a metal element so as to increase its resistance.

In conclusion, concerning all the above mentioned works, it is relevant to highline that the complexity of the interventions was depending on the impossibility to apply a standardized approach, considering that each element is different from others and respecting in each stage the historical and artistic value of the building.

Bibliography
RESTORATION AND SEISMIC IMPROVEMENT OF
THE CHURCH OF SANTA MARIA MAGGIORE IN MIRANDOLA

PREMISE
Throughout its history, since the beginning in 1432 after the papal consent, the Church of Santa Maria Maggiore in Mirandola underwent numerous interventions and it has been restored countless times over the centuries. Built in late-gothic style, the church has three naves characterized by ribbed groin vaults and wooden roof composed of beams and binding rafters in the lateral naves and queen post roof trusses\(^{(1)}\) in the central one, above the clerestory windows.

DAMAGE CAUSED BY THE EARTHQUAKE
The earthquake of May 2012 provoked serious consequences on the structure, damaging all its parts, included the bell tower, and highlighting its intrinsic vulnerability as in the most part of historical buildings. However, most of the damage was concentrated in the central and left naves, whose roofs and vaults have collapsed completely, causing the damages of pavements, ornaments and precious artworks stored in the church. The right nave, on the other hand, underwent less damage and despite the presence of a serious map cracking, the vaults have not collapsed.

\(^{(1)}\) Queen post roof trusses are very similar in design to king post trusses except that they have two vertical “queen posts” instead of one central “king post.”
Such different mechanical behaviour of the structure can be substantiated by many reasons: first of all, the presence of the bell tower as bracing element that has improved the structural response of the whole building. The second reason would be the different quality of the various brick masonries. The brick wall on the left side of the church resulted from several interventions, mainly related to the construction of the oratory of San Rosario and its subsequent demolition. Therefore, the external wall facing was not toothed into the preexisting structure, being a remarkable inner structural weakness. This aspect must be analysed consciously, in order to understand the importance of the knowledge of historical building phasing.

Regarding the main façade, it has been severely damaged, showing a codified partial collapse mechanism: façade upper part collapse. The tympanum of the façade with its spires placed at the top, collapsed because of the inadequate connection with transversal walls, which permitted its out-of-plane deflection. Furthermore, ties helped to restore an effective transversal containing action, working as a relevant protection element, preventing a whole collapse of the façade.

Such damage is certainly due to the lack of an effective connection between walls and to the quality of brick masonries, which are constituted by non-cohesive and poor materials (visible once the ruins had been removed). In each case, failure modes depend on the mechanical properties of masonries, geometry of the walls and loads at stake.
INTERVENTION GUIDELINES, STRUCTURAL CONSOLIDATION AND SEISMIC IMPROVEMENT

Serious cracking, as already mentioned, affected almost the entire building, causing damage and leaking out of construction materials. These observations call again for a general thought, from an architectural point of view, on the main topic of the rehabilitation and reconstruction measures after earthquakes.

The aim of the restoration intervention is either a static consolidation and a seismic improvement of the church in order to increase its ductility, reducing the causes of vulnerability. Project strategy consist in different interventions, as appropriate.

Preliminary stage consists in removing ruins, disassembling and partially demolishing the unstable structures still present, taking care of keeping all the reusable components, such as bricks, decorations or bent tiles in order to conserve them as much as possible.

Next step involves reparation and consolidation works on the damaged parts (walls, wooden roofs, vaults) using, as more as possible, the original components through their repositioning and new components with the aid of a structural mortar hydraulic lime-based type. Besides, masonries and vaults consolidation has been achieved through the selected demolition and restoration technique, and through the repair of cracks with the use of reinforced filling injections based on a structural lime mortar.

Reconstruction of collapsed parts with a view to proceeding with a global consolidation of the structures in order to achieve the seismic improvement level required. The project involves the construction of a new lightweight structure in replacement of the collapsed roofs, according to the original geometries without upsetting the balance inside the church. In the central nave’s area, the new roof is made of a steel and lamellar wood trusses, wooden binding rafters and a wooden boarding over them. The whole system is supported by the existing walls with the integration of steel plates above masonries. Instead, the vaults, made of wooden curvilinear panels, are hanging from the abovementioned roof. The whole concept is to fortify the connecting action of the roof towards the lateral walls giving a positive contribution to the global mechanic behaviour.
As regard the main façade, it has been considered as a large missing part to rebuild à l'identique, installing glass connectors between existing and new walls to restore the wall continuity and glass fibres meshes underneath the brick masonries on the interior wall of the façade.

Last but not least is the surfaces restoration: the rebuilding or the integration, as appropriate, of the indoor lime plasters and the use of a cocciopesto-based (lime mortar with crushed pottery) plaster externally.

The restoration of church aims to ensure a global seismic improvement of the structure, on one hand reducing all vulnerability elements and local weaknesses and on the other hand increasing the protection ones (transversal reaction elements, steel ties normal to the façade, application of glass fibres) paying attention to the connections between the walls.
THE BASILICA OF SAN FRANCESCO IN FERRARA

One of the finest examples of the renaissance architecture of Biagio Rossetti

HISTORICAL AND POLITICAL BACKGROUND

The Basilica of San Francesco in Ferrara has been erected in 1494 on a pre-existing Franciscan complex dated to the early forties of the twelfth century and it is a renaissance masterpiece of the architect Biagio Rossetti. His presence has been particularly relevant for the artistic development of the city, being author of a lot of works in Ferrara like Palazzo dei Diamanti, ordered by Sigismondo d’Este around 1493, currently renown as his most famous architecture.

Throughout the Middle Ages until the end of the fifteenth century, the northern boundary of the city of Ferrara was characterized by several prestigious buildings, some of which owned by the Duke of the city. In 1492 Ercole I d’Este, Duke of Ferrara, commissioned Biagio Rossetti to design a new urban plan that could include this area in the centre, making Ferrara the first modern city in Europe. Therefore, during the Erculean Addition, so named in honour of the Duke, the church of San Francesco was reconstructed in Renaissance style. Such church had barrel vaults with lunettes located in the central nave and in the transept and it was characterized by the presence of rectangular windows with round arches at the top. The main façade was different from the current one, with three round arches at the top and the central one bigger than others.

In 1515, when the church was almost completed, a ground failure provoked a serious collapse, requiring the reconstruction of masonries and columns, while the roof was repaired and the ornaments of the central nave were realized by Tommaso da Carpi between 1529 and 1532.

In 1570, an earthquake heavily damaged the church of Biagio Rossetti causing the complete collapse of the vaults (of the central nave and the transept) and the main façade, leading to its present reconstruction in which the church is arranged as a Latin cross with three naves.
After the earthquake in 1570, the building was substantially amended: the central nave was divided into bays, the windows on the lateral walls were closed and replaced by rose windows, a semi-circular choir was added and the upper part of the main façade was flanked on both sides by enormous curved volutes as in many churches all over Italy, while the bottom part remained marked by marble and terracotta lesenes dated to Biagio Rossetti’s design.

During such post-1570 reconstruction, also the masonry vaults in the central nave and in the transept were replaced by lightweight vaults, made of vegetal weaved fibres supporting decorated plasters, instead the vaults of the lateral naves and of the chapels (eight on each side) are probably attributed to Biagio Rossetti.

In the last half part of the nineteenth century, a further ground failure, leaded to relevant restoration works including the consolidation of the foundations of the transept and the reparation of the roof.

Moreover, the second world war provoked a further damage to the church, requiring, once again, new restoration works.

POST-2012 EARTHQUAKE RESTORATIONS

A second relevant earthquake, happened on May 2012, altering the static conditions of the buildings and decaying historic plasters and decorated surfaces too. Particularly, cracks appeared alongside the vaults and the perimeter walls, causing the temporary closure of the basilica.

Restoration works concern both the bearing structures and the decorated surfaces that represent a relevant part of the interventions, while concerning artworks belonging to the church, many of them were moved to the Pinacoteca of Ferrara during the previous century and replaced by copies; anyway, among the remaining ones there are a lot of famous artworks such as, for example, the Capture of Christ (1524) by Garofalo in the first chapel on
the left side or the baroque cenotaph of Marchese Ghiron Francesco Villa. Preliminary stage has been the geometrical survey of all structures and a drawing up of the map cracking in order to identify precisely the damage of the church, considering that such surveys have been constantly updated by the team of restorers, archaeologists and architects at work.

The next stage has involved reparation and consolidation works on the damaged parts through many interventions, in according to the different cases. The consolidation of the vaults of the central nave (made by vegetal weaved fibres) has been achieved strengthening the existing timber centring and using glass fibres with a product gypsum based. The domes of the left nave, instead, after the cleaning of surfaces, have been consolidated with PBO fibres (PBO is a rigid isotropic crystal polymer) while concerning cracks, they have been repaired with selected demolitions, insertion of metal wedges, mortar joints re-pointing work, creation of a structural screed and construction of low walls with a reduced thickness at the extrados in order to stabilise the whole structure.

Besides, all surveys gave surprising and unexpected results as the finding of pre-existing decorations belonging to the previous phases of the building. As known, the church of Biagio Rossetti, dated to the second part of the fifteenth century, maintained the same orientation of the previous one, conserving a wall that was included in the left nave of the
actual church. On this internal wall facing, traces of wall paintings have been found and probably they are dated to two different stages: the more ancient of two is characterized by a frieze of stars in squares and the second one by polychrome circular patterns. All the current visible finishings, are dated to 1737 by an inscription located on the internal wall facing of the main façade, instead the ones below, go back the period between Bia-gio Rossetti’s interventions and post-earthquake restoration works in the last part of the sixteenth century. Even on domes of the lateral naves, traces of wall paintings have been found and they have shown a red stars pattern on a beige background. Regarding the surfaces, the interventions have included cleaning and consolidation of all
decorated parts, mortar injections and use of acrylic resins in the parts more damaged. The church of San Francesco, therefore, shows an overlapping of prestigious historic decorations as consequence of articulated phases of the building over centuries.

In order to ensure the best quality during the restoration of the decorated surfaces, it is necessary to carry out preliminary tests and surveys as the elaboration of a material mapping and the study of the decay of each part. These methodological criteria allow to develop a focused and deep research on constitutive materials and on the adequate interventions, according to the principles of full compatibility, reversibility and respect for all different stratifications.
INTRODUCTION OF THE RECENT INTERVENTION APPLIED TO CAPPELLA DEGLI SCROVEGNI
Featuring a new roof system for heritage building

HISTORICAL BACKGROUND
The family chapel of the Scrovegni in Padova, known as “la cappella degli Scrovegni” was constructed on the ruin of ancient Arena of Padova from the year 1303 to the year 1305. The Scrovegni was the richest family of the time which ran the business of banking and usury. One of the family member Enrico Scrovegni decided to dedicate a chapel to God, after knowing that in the Dante’s story, the usurous had been sent to hell. The architectural configuration and the space of the chapel is quite simple and clean. It is composed of a nave, following with a Choir and an apse with a tower on top, to the west side of the apse locates a sacristy. The architect might not be much recognizable, however, the Scrovegnis has definitely hired the most noted artists of the time taking care of the decoration of its interior space. Among them, the Florentine Giotto who has created the fresco on the walls and ceiling should be considered as one of the most noted and innovative artists of that period. Before having been assigned the task of “la Cappella degli Scrovegni”, he has already accomplished the decoration of several building among the most well known in Italy, such as the “Basilica di S. Francesco” in Assisi and the “S. Giovanni in Laterano” in Rome.

Giotto has been commissioned to create a serials of frescoes on the inner walls of the chapel, drawn from the stories of the Old and New Testament. 38 squares filled with different scenes were placed in three stripes on both side of the lateral walls. And the famous characters representing “the seven vices and the seven virtues.” were placed on the
bottom of each wall. These drawings are supposed to arouse the desire of redemption of humanity for everyone who enters the chapel. The ceiling of the chapel has been painted entirely with vivid blue, symbolizing the existence of heaven, which is considered as the most recognizable feature of this masterpiece of art. The fresco of the chapel is recognized as one of the most important works in western art history and the only one that is comparable with the fresco of the Sistine Chapel in Rome by Michelangelo.

**INSPECTION TOWARDS THE ROOF SYSTEM AND CORRESPONDENT INTERVENTIONS**

The roof system has always been the focus of the previous conservations in the history, since it’s the most crucial aspect that prevents the fresco being affected by the natural environment. Throughout the most recent and comprehensive inspection towards every session of the roof above each space, concentrating on the efficiency of the roofing system, several existing damages and potential problems have been indicated, and according to which a series of interventions have been applied.
The Nave

EXISTING CONDITION
The originally principle structural components of the roof were wooden trusses which had been replaced by steel ones in the 1960s, providing a more stable and durable roof structure. The existing coverage consists of three layers, listed as follows, from the inside out: a tablet constructed with ceramic panels which were supported by the steel trusses, some fissures presented on the panels; the waterproof layer had been applied directly on the ceramic deck. Since it had been set in the 1960s, some certain aging and deformation phenomenon has inevitably appeared; the traditional tile coverage showed no evident damage. All the three layers work together preventing the space underneath from being affected by the natural weather conditions such as the infiltration of the rain and the direct irradiation of the sunlight and so on.

INTERVENTION EXECUTED AND THE GENERAL SEQUENCE OF THE CONSTRUCTION
1. In order to provide a protection of the space underneath during the conservation, a temporary coverage has been applied. In the meanwhile, a tablet attaching to the bottom of the trusseshas also been built to work as the passage above the vaults. All the wooden panels are pretreated with a high fireproof performance fulfilling the EU standard.
2. Demolishing the roof coverage with all three layers.
3. Reconstruction of the tablet fixed on top of the trusses, replacing the previous ceramic panels with high density plywood panels displaced in double layers crisscrossed, it is capable of providing a much more durable and resistant base for the systems above, it will maintain certain stability even when responding to deformation caused by the earthquake and the expansion and contraction caused by the temperature variation. A stripe of carbon fabric tape has been applied along the perimeter of the nave, where the tablet meets the wall summit, in order to reinforce the sealing performances of the roof and form a more reliable connection between the walls and the tablet itself. After having the old ceramic tablet demolished, all the dust and detached fragments have been thor-
oughly removed from the wall top, providing a clean supporting surface. All the wooden panels are pretreated with a high fireproof performance fulfilling the EU standard.

4. Reconstruction of the waterproof layer, introducing the most updated self-extinguish material that meets the EU anti-fire standard.

5. Reconstruction of the traditional tile coverage.

6. When the conservation of the roof system has drawn to an end, the temporary roof has been dismanteled, but some parts of the tablet that worked as passage have been kept as the structural reinforcement of the steel trusses and the maintenance passage for the future usage.

**The Choir**

**EXISTING CONDITION**
The Roof of the Choir is the same three-layered system as the nave’s, the major difference is the application of trestles as supporting components instead of trusses, and the presence of tie rods fixed on the walls for reducing the thrust caused by the roof.

**INTERVENTION EXECUTED**
The reconstruction of the principle three layers has been repeated in every session of the chapel. In order to provide a more stable supporting structure of the roof, the former trestles and ties have been replaced by a series of new steel components with a thin but resistant tie prefixed at the bottom.

**The apse and the tower**

**EXISTING CONDITION**
The tower constructed above the apes is the highest part of the whole building. From the presence of a concrete roof, we can easily deduce that its coverage has been renewed in one of the previous restoration. The roof showed no signs of damage and overall in good state. There is a wooden deck dividing the apse from the tower, located a certain height above the apse, it showed no evident sign of damage. There is an arch between the Choir
and the Apse with a remarkable scale, when observing from above, minor fissures on the plaster can be noticed, and several evident cracks were found on the wall surface on which the arch is supported. They are caused by the thrust formed by the arch.

**INTERVENTION EXECUTED**

Apart from the reconstruction of the waterproof layer and the replacement of the tiles above, the concrete roof has been kept almost untouched. The only modification made was the addition of carbon fabric along the perimeter of the wall top, in order to reinforce the connection between wall and roof. Some minor interventions have also been applied to the wooden deck, some metal bars have been inserted into both the wood and the wall, creating a more secure connection between the two. The arches have also been comprehensively cleaned. All the dust and detached materials, found between the stones of the structure of the arches have been removed and the gaps refilled with grout of natural lime. The cracks on the walls showed an evident sign of the insufficient resistance of the
walls to the thrust caused by the arches. Tie rods and a metallic bar have series of minor been inserted to stabilize the structural behavior and preventing further deteriorations of the existing cracks.

The Sacristy

EXISTING CONDITION
The Sacristy was covered by the common three-layered roof system, but with a particular supporting system, composed by reinforced concrete beams. The overall stability of the structure performance was acceptable, according to the investigation, which emphasised only some reinforced steel exposure phenomenon.

INTERVENTION EXECUTED
In order to solve the reinforced exposure problem, some FRP laminas of have been used.

Kimia S.p.A. manufactures both traditional products (e.g. lime mortars) and innovative high performance materials (FRP, FRCM, CRM systems) for the recovery and restoration of historical/monumental constructions, civil works, r.c. buildings.

The strong specialization of the solutions adopted, the technical support offered in any phase of the interventions and the versatility in meeting the specific needs of complex renovation projects, enabled Kimia to carve out a reference position in both Italian and foreign restoration markets.

For this intervention Kimia provided lime-based mortars applied with alkali-resistant glass-fiber nets & FRP solutions.

FRP STRENGTHENINGS WITH FABRICS
After adequate preparation of the substrate, apply with a brush, roller or airless pump Kimicover FIX water-based epoxy primer.
Afterwords apply with a notched trowel an average 1 mm thick layer of tixothropic resin Kimitech EP-TX.
On wet, place the reinforcing fabric made out of carbon fiber (Kimitech CB) or glass fiber (Kimitech VR) with grammage, type of weaving and width requested foreseen.
Impregnate the reinforcements applying by brush the fluid resin Kimitech EP-IN (with a longer workability time) or Kimitech EP-IN/50 (faster).
In case of regular substrates and low-grammage fabrics, it is possible to use a medium-viscosity resin (Kimitech EP-IN/CMP) both to glue and impregnate the fibers.
To have a better grip for subsequent smoothing products and finishings (if foreseen), dust the surface of wet resin with quartz aggregates.

LIME-BASED MORTARS APPLIED WITH ALKALI-RESISTENT GLASS-FIBER NETS
The substrate must be clean, sound, compact with no crumbly portions and no traces of dust, dirt, mildew. When possible, hydro-clean the surface.
Apply an initial 5 mm thick scratch-coat, lay the net and fix connectors (if foreseen), lay the final layer of the mortar. If the thickness required is higher than 25 mm, apply the render in several layers without tamping.
The last coat of the render will be levelled off using a straight edge by passing over the surface horizontally and vertically until it is flat. Finish off the surface of the render with a damp sponge float.
THE CONSERVATION OF PONTE DELL’ACCADEMIA IN VENICE
How to maintain the historical appearance with updated technologies

HISTORICAL BACKGROUND
In the day of November 20th 1854, citizens of Venice have finally witnessed the inauguration of the second pedestrian bridge crossing the “Canal Granda”, which was an iron structure spanned about 50 meters, designed by the British engineer Alfredo Neville. This had been the precursor of “il ponte dell’accademia”. As a matter of fact, the iron bridge of Neville has never been fully appreciated by the Venetians. In their constant criticism, its industrial and modern configuration has been considered as dissonant element of the ancient Venice. And the outrageously high cost of maintenance made the government had no choice but to limit the use of it to decelerate its serious deterioration. In the year of 1931, a wooden bridge designed by engineer Eugenio Miozzi has been built, in order to function as a temporary solution replacing the previous bridge by Neville. At the same time, the discussion searching for an official and permanent scheme has never ceased. Contemporarily with the completion of the wooden one, a design proposed by Architect Dullio and Engineer Ottorin has been announced as the winning scheme. Unfortunately, restrained by the break out of war and financial difficulties, the official design had never had a chance to be built. Consequently, the temporary has become permanent. The name “ponte dell’accademia” derived from the fact that it locates next to “Accademia di belle arti di Venezia (now converted into Gallerie dell’accademia)”.
The principle structure consists with two Metallica arch supported by brick stacks sit on each side of the canal. The span of the both arches is around 50 meters, and the height from arch top to water is about 7 meters. Between the arches locates a metal wind resist system, it works side by side with the arches forming a solid base, on which a wooden structure of steps and platforms has been built.
As it has been designed and constructed as a temporary structure, the economically se-
lected materials, the highly simplified construction methods and the intensely compressed working duration, are bound to be problematical during the utilization of the bridge. Furthermore, the high humidity of Venice and the corrosive sea water accelerate considerably the degradation of wooden and metallic components. The constantly increased number of tourist, the damaging caused by overloaded pedestrian traffic is becoming more and more critical. The bridge has gone through several major conservations in history, the resistance of the structure has always been the main concerns of the previous interventions. Under the premise of maintaining the original exterior configuration, the majority of structural now are made of steel with a larch coating resembling the original wooden structural. The most recent conversation has been completed not long ago.

DEGRADATION PERCEPTION AND VALUATION
Before drawing to a conclusion of definite intervention methods, the perception of existing degradation and the valuation of the risk causing by the damages should be very crucial. The process of sampling study includes works as following: partial dismantling of the most representative and essential sessions of the bridge (for example the wooden trusses on each end of the bridge which bear the most load and suffer the most severe corrosion from the sea water); observation the condition of each component of various materials; mapping of the existing damages on each components; mapping of the existing connecting situations between the components, especially between those made of different materials; valuation of soldering joints between Metallica components; valuation of damage situation of wooden coating; valuation of corrosion situation of metallic components.

The foremost outcomes of the sampling study are listed as following: the most evident decay is the corruption of wooden components especially those function as coating, contacting directly with metallic materials. The stagnated sea water without being efficiently ventilated is the key factor that exacerbates the deterioration of the wood; However, the most critical damage concerns the rusting of metallic components, which occurs most frequently also on the joints where the various materials meet. For instance, the steel profiles with a C section, coated with larch panels, are the most essential structural elements of the two arches with a span of 50 meters that bear all the load of the upper structure. The sea water enters the gap between wood and steel frequently, due to its concealed
position, the serious corruption of steel revealed only after the demolition of wood during the sampling study. The concealment of degradation increases tremendously the level of potential structural risks. Another unignorable phenomenon is the severe abrasion of the wooden steps and platforms caused by the daily traverse of an outrageous number of tourists.

**THE INTERVENTION EXECUTED**

Throughout the analysis towards the existing condition and outcome of the damaging valuation, it's very obvious that the majority of the damages are caused by the corrosive seawater and the unsuitable connection between components that exacerbates the effect of corrosion. Based on the principle of reducing the risks of corrosion, a series of comprehensive and meticulous intervention have been practiced, which can be generally catalogued into three basic categories: the amelioration of the existing joints between components; the corrosion prevention intervention applied on the existing structure; the substitution of over degraded components and the adjustment on the repairable parts. The specifics are listed as following:

The amelioration of the existing joints between components: the insertion of a spacer between wooden and metallic components, made of xylene with a thickness of 1cm. This method allows the circulation of air and water between the wood and metal in order to
create a relatively dry microenvironment avoiding the corrosive effect of the stagnated sea water.

The corrosion prevention intervention applied on the existing structure: the complete removal of rust on surfaces of metallic components; two layers of Zinc phosphate coating treatment on all the accessible metallic surfaces; three layers of polyurethane enamel treatment for all the micro metallic components; Multiple layers of corrosion resistant treatment on all the wooden components.

the substitution of over degraded components and the adjustment on the repairable parts: the replacement of unrepairable metallic components follows the principle of avoiding applying the profile with enclosed section in order to avoid undetectable decay in the future; the replacement of unrepairable wooden components follows the principle of applying the larch with the similar appearance to the original one, in order to obtain the harmony between the past and the present; proper adjustments for those parts which are slightly deformed.

The conservation of “il ponte dell’accademia” respected the historical appearance of the bridge, in the meanwhile considered comprehensively the updated functional requirements of modern times and the security of structural. For the sake of prolonging the duration, regular maintenance and verification is definitely required.
A HISTORY OF LA SCUOLA GRANDE MISERICORDIA IN VENICE AND ITS CONSERVATION

HISTORICAL BACKGROUND
Founded in the Middle Ages as a secular phenomenon of devotion and solidarity, the “Scuole Grandi” played a key role in the social, political and religious fabric of the Republic of Venice. In the sixteenth century they reached a level of such wealth and influence in the community that were integrated into the social context of the Serenissima Republic, with a leading role in state ceremonies.

The original design of the Scuola was built in the Gothic style from 1308 onwards in Cam- po dell’Abbazia, where it still stands today. Expanded several times in the course of the century, in the late fifteenth century the Misericordia first proposed the reconstruction of its headquarters elsewhere, to provide a larger and more prestigious location for its ever growing number of members. The Florentine architect and sculptor Jacopo Sansovino was awarded for the project of the construction of the “Scuola Nuova”. He designed the interior referring to the layout of Roman basilicas, while maintaining the traditional model of the Venetian schools. Veronese, Zanchi, Lazzarini, Pellegrini, and last but not least Domenico Tintoretto, son of the famous Jacopo, were only some of the artists involved in the decoration of a building that still retains the splendour and prestige with which it was conceived.

The end of the Republic of Venice forced the confraternity to leave the site. Since the beginning of the nineteenth century the Scuola has been used in different ways: firstly as military lodgings, then as a warehouse, and finally hosted the State Archives. In 1914 it became home to the educational and sporting activities of the Costantino Reyer Sports Club, which in spite of many logistic difficulties managed to transform it into a temple to sports in Venice. The Misericordia was home to the Reyer Sports Club until 1991 when the City of Venice started the restoration of the building, the works finally reached completion in 2015.

THE CONSERVATION
The new architectural project revives the mystery and charm of the building, enhancing the depth of its historical traditions in every wall and decoration. The restoration aims to unearth the original painted surfaces, emblematic of the late Venetian Renaissance.
Today the Misericordia is a sustainable ongoing project for the city of Venice at this moment in history: it is a space where urban upgrading, culture and social involvement converge. A generator of business, flexible and adaptable, focused on a single goal: the promotion of excellence, cultural exchange and opportunities to meet.
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| members list

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SOCIO AGGREGATO | STANDARD MEMBER

A

SOCIO EFFETTIVO | FULL MEMBER

E

SOCIO ONORARIO | HONORARY MEMBER

O

Vedi Art. 3, Statuto Assorestauro | see Art. 3 Assorestauro’s Statute - www.assorestauro.org

INTERVENTI | TYPE OF WORKS

XILUX SRL

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www.xilux.it

La Xilux, nata a Bari, Italia, nel 2008, progetta e realizza serramenti, portoni e porte in legno, combinando l’antica sapienza artigianale con la moderna efficienza industriale. Flessibilità dell’organizzazione, qualità dei materiali e rispetto per l’ambiente sono i punti fermi dell’operato di Xilux, per garantire la massima soddisfazione ai clienti e proporsi come un partner affidabile nel mercato italiano ed estero.

L’azienda ha sviluppato esperienze e competenze specifiche nella realizzazione di serramenti nell’ambito di progetti di restauro e recupero funzionale di fabbricati di pregio, spesso interessati da vincoli storici, architettonici e paesaggistici. Lavori così complessi sono gestiti da un team composto da architetti, ingegneri ed esperti, in grado di progettare infissi coerenti con il valore storico delle costruzioni.

Assorestauro - Associazione Italiana per il Restauro Architettonico, Artistico, Urbano

www.assorestauro.org

Assorestauro

Associazione Italiana per il Restauro Architettonico, Artistico, Urbano

italian association for architecture, art and urban restoration
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premier@unicalce.it - www.premierpremiscelati.it

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VGS COSTRUZIONI SRL
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Tel. +39 02 4707700 - Fax +39 02 4707700

Certiﬁcation

EN ISO 9001:2015

Certificazione

EN ISO 9001:2008 - EMAS

Sponsor Presentation
Il marchio T ecnova Group nasce per soddisfare nel mondo dell'industria edilizia le richieste sempre più esigenti di imprenditori e progettisti, offrendo una serie di soluzioni efficaci e innovative. Il leitmotiv che ispira la nostra mission è: “non offriamo semplici prodotti, ma soluzioni”. Per la realizzazione di questo obiettivo, T ecnova Group ha ricercato le migliori tecnologie presenti in tutto il mondo, nel campo della protezione e della durabilità delle opere murarie e del calcestruzzo, del restauro, del risparmio energetico e della deumidificazione, diffondendo con successo crescente nel mercato italiano ed estero.

Creation of T ecnova Group brand meets worldwide demands in the construction industry, offering eco-friendly products, tested and verified in the laboratory as in practice. T ecnova Group is exclusive distributor in Italy of Ther.

La TECNICON s.r.l. dal 1982 opera prevalentemente in Italia. Si compone di tecnici restauratori dell'arte. Si occupa del restauro e la conservazione di dipinti murali, dipinti mobili su tela e su tavola, superfici di pregio dell'architettura, fontane, sculture, mosaici, stucchi, terracottas, manufatti lignei (sculture e soffitti policromi), manufatti metallici. Realizza calche e copie.

Tryeco 2.0 concentra al suo interno svariati tipi di attività, grazie alla presenza di collaboratori con diverse competenze, legate all'acquisizione e rappresentazione solida o virtuale di un oggetto, di un contesto o di un concept. L'azienda riunisce i servizi attorno alla prototipazione rapida in gesso, nuova tecnologia che richiede strumentazioni specifiche, acquisite dall'azienda e poco diffuse nel territorio nazionale.
ANNO DI FONDAZIONE: 1981


ANNO DI FONDAZIONE: 1987

Syremont spa nasce nel 1987 dal Gruppo Montedison da cui eredita una specifica competenza sui fluorurati. Dopo 26 anni al servizio della ricerca, diagnostica, restauro dei beni culturali in tutto il mondo, Syremont è in grado di offrire una più ampia gamma di servizi integrati focalizzati sulla gestione degli assets culturali:

I nostri servizi sono principalmente basati su: ricerca scientifica e tecnologica a supporto di prodotti per il restauro, diagnostica, conservazione e restaurazione, eventi suoni e luci, visite guidate spettacolarizzate, parchi tematici, media production, comunicazione e marketing. Ciclo produttivo. Analisi fattibilità modelli di gestione – progettazione – interventi – gestione.

ANNO DI FONDAZIONE: 2011

Studio AERREKAPPA S.R.L. progetta, dirige e realizza lavori di restauro di edifici storici e contemporanei, appartamenti, ville, case rurali, parchi pubblici, parchi di servizio, parchi di telecomunicazioni e luoghi di culto, in particolare nel campo del restauro, avvalendosi delle prestazioni professionali di tecnici qualificati, regolarmente iscritti ai rispettivi Ordini o Collegi di appartenenza.

A fronte di una esperienza operativa pluriennale, lo Studio si è specializzato, nelle prestazioni professionali, in: risanamento, ristrutturazione e riutilizzo funzionale di complessi monumentali, civili, pubblici, privati, industriali e commerciali. Il servizio di progettazione e restyling di spazi pubblici è gestito da un team di architetti, tecnici e tecnici iscritti ai rispettivi Ordini o Collegi di appartenenza. Il team è fondato su una collaborazione interdisciplinare tra architetti, ingegneri e tecnici, con un approccio progettuale che assicura soluzioni chiare e innovative per il risanamento e la riqualificazione di spazi pubblici.
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 artistiche e stucchi, combinando tecniche nuove e conoscenze antiche nel nuovo colore del tempo.

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.

ANNO DI FONDAZIONE:

Marco Paolo Servalli ARCHITETTURA, specializzato nel restauro di edifici storici e di culto 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 tempi, e lo studio si avvale di collaboratori esperti e affidabili. Progettazione architettonica e direzione lavori, sia in Italia che all’estero. Altre aree di competenza: progettazione del paesaggio, riqualificazione aree urbane, progetti per il Fund Raising.

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

SO.IN.G. STRUTTURE E AMBIENTE SRL

A provider of DIAGNOSTICS and MONITORING services applied to architecture, engineering, geology, archaeology and precision farming. Over the years, SOING has developed an INNOVATIVE APPROACH to engineering and executing monitoring services, with a special focus on indirect – and therefore non-invasive – geophysical survey techniques, where sample collection and the resulting irreversible alteration of finishes are successfully avoided.

The SPC s.r.l. has been developing a unique experience and a proprietary know-how for the past 25 years reaching the excellence in the structural engineering with worldwide recognised experience in preservation of cultural heritage structures and architectures. Partners and Legal Representative are Ing. G.Croci, Ing. A.Bozzetti, Ing. F.Croci, Arch. A.Herzalla and Ing. C.Russo. Principal activities include: analysis and strengthening design of existing buildings; design of new modern complex structures using advanced techniques and materials; consolidation and restoration of monuments; investigations and diagnostic on structures and materials, including on-site and laboratory tests; project management of civil engineering and architectural projects.

SPC SRL

Tel. +39 06 5746625 - 06 5747860
Fax +39 06 5746335
mail@spc-engineering.it
www.spc-engineering.it
ANNO DI FONDAZIONE: 1998
CERTIFICAZIONI: ISO 9001 - SICERT SGS
Restauro di intonaci policromi e di decorazioni-materiali lapidei-consolidamenti strutture murarie e opere lignee-deumidificazione e impermeabilizzazione di strutture murarie.

RESTAURI SRL
Piazza della Vittoria 6 - 16121 Genova
Tel +39 010 2462978 - Fax +39 010 2462978
restauri@panet.it
www.restaurisrl.eu

ANNO DI FONDAZIONE: 1982
CERTIFICAZIONI: Ambientali: ANAB / ICEA - Natureplus
FILIALI: Parcines (BZ), Prevalle (BS), Comabbio (BA), Villanova (CN), Fontanafredda (PN)
Risanamento, restauro con un’attenzione costante per la bioedilizia, pitture, rivestimenti e sistemi di isolamento termico per esterni. Calcestruzzi, massetti e fondi di posa.

RÖFIX SPA
Via Venosta 70 - 39020 Parcines (BZ)
Tel. +39 0473 966100 - Fax +39 0473 966150
office.partschins@roefix.com
www.roefix.com

ANNO DI FONDAZIONE: 1920
CERTIFICAZIONI: ISO 14001/UNI EN ISO 14001:2004
ISO 9001:2008
OHSAS 18001:2007
Fondata nel 1920, SACAIM si è distinta fin da subito in quella che poi sarebbe diventata la sua attività caratterizzante: il restauro conservativo. Nel corso dei decenni i suoi interventi hanno 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, irrigue, ed acquedottistiche, oltre che una forte presenza nell’edilizia civile e nelle infrastrutture.

SACAIM SPA
Via Righi 6 - 30175 Marghera (VE)
Tel. +39 041 2581911 - Fax +39 5328217
info@sacaim.it
www.sacaim.it

ANNO DI FONDAZIONE: 2000
CERTIFICAZIONI: Eccellenza artigiana Regione Piemonte
La nostra azienda è specializzata nel restauro di metalli, vetro e lampadari storici. Si eseguono lavorazioni su lampadari di qualsiasi genere, dimensione e stile, e soprattutto quelli tipici della tradizione storica italiana come ad esempio i lampadari veneziani di Murano e i lampadari in cristallo Maria Theresa o Impero. Il cliente, pubblico o privato, può contare sul nostro supporto per il restauro conservativo e museale, tutto eseguito con alti standard di qualità artigianale. Azienda accreditata presso le Sovraintendenze.

REALE RESTAURI DI FORCONI CRISTINA
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realerestauri@tiscali.it
www.realerestauri.com
PIACENTI SPA
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PESSINA COSTRUZIONI SPA
Via Manzoni 36 - 73020 Cursi (Le)
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www.pietraleccese.com

PLANARCH S.R.L.
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planarch@planarch.it
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Annuario 2008

ASSO Restauro
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INTERVENTI | TYPE OF WORKS
SOCIO AGGREGATO | STANDARD MEMBER
SOCIO EFFETTO | FULL MEMBER

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 elevato e si tramanda da 150 anni. Gli attuali vertici aziendali, i fratelli Giuseppe, Giorgia e Daniele Marrocco, insieme con il padre Salvatore, che è il presidente attuale, hanno sviluppato e reso evoluta la società, sempre caratterizzata da ricerca, sperimentazione, progettazione e costruzione. 

Le Piacenti S.p.a. esercita attività di progettazione, conservazione e restauro di beni di interesse storico-archeologico, quali le pietre lineari policrome, i dipinti su tela e tavola, gli stucchi e le pitture murali, i reperti archeologici, i materiali ceramici, metallici e lapidei. All'interno dell'impresa, che si avvale di attrezzature tecnologiche e di ampi laboratori, ogni competenza settoriale lavora in sinergia con le altre e viene coordinata dagli uffici tecnico e diagnostico. L'azienda possiede i requisiti professionali, economici ed organizzativi che le permettono, autonomamente, di affrontare grandi contratti pubblici e privati di restauro e conservazione. Lavora in Italia, Cina, Turchia, Moldavia, Russia, Romania, Serbia e Venezuela.


La Pimar S.r.l. è una società che esercita attività di progettazione, conservazione e restauro di beni di interesse storico-archeologico, quali le pietre lineari policrome, i dipinti su tela e tavola, gli stucchi e le pitture murali, i reperti archeologici, i materiali ceramici, metallici e lapidei. All'interno dell'impresa, che si avvale di attrezzature tecnologiche e di ampi laboratori, ogni competenza settoriale lavora in sinergia con le altre e viene coordinata dagli uffici tecnico e diagnostico. L'azienda possiede i requisiti professionali, economici ed organizzativi che le permettono, autonomamente, di affrontare grandi contratti pubblici e privati di restauro e conservazione. Lavora in Italia, Cina, Turchia, Moldavia, Russia, Romania, Serbia e Venezuela.

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### Interventi | Type of Works

<table>
<thead>
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<th>Service</th>
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<tr>
<td>Analisi e Progetto</td>
<td>Testing and Design</td>
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<td>Materiali</td>
<td>Materials</td>
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<td>Servizi</td>
<td>Services</td>
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<tr>
<td>Apparecchiature e Tecnologie</td>
<td>Equipment &amp; Technologies</td>
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</table>

#### L’azienda è suddivisa in più reparti e offre assistenza diretta con i propri tecnici qualificati. Reparto diagnostica esegue con il proprio laboratorio mobile analisi di carattere non distruttivo per 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 valutazione 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.

#### CERTIFICAZIONI:

Nicola Restauri Srl è una realtà d'eccellenza nel campo del restauro, riconosciuta a livello internazionale, al servizio di Soprintendenze, Enti, Musei, Università e collezionisti. Oltre sessant'anni di esperienza nel recupero, conservazione e restauro di opere antiche e moderne, su tela, legno, carta, pergamena, pietra, reperti archeologici, affreschi e stucchi in chiese e palazzi.

#### ANNO DI FONDAZIONE:


#### ANNO DI FONDAZIONE:


#### APPARECCHIATURE E TECNOLOGIE | Equipment & Technologies

Opificio della Luce is a new business network with all the necessary skills and technical resources for designing, building, programming and controlling high-quality lighting systems in the art world and museum systems. At Opificio della Luce we study and apply the innovations made possible by electronics, chemistry and SSL (solid-state lighting) as well as the opportunities offered by the most advanced digital light management.
<table>
<thead>
<tr>
<th>Elenco dei Soci</th>
<th>Members List</th>
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<tbody>
<tr>
<td>**Socio Aggregato</td>
<td>Standard Member**</td>
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<tr>
<td>**Socio Effettivo</td>
<td>Full Member**</td>
</tr>
<tr>
<td>**Socio Onorario</td>
<td>Honorary Member**</td>
</tr>
</tbody>
</table>

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**MELLONCELLI SRL**
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Tel. +39 0386 960004 - Fax +39 0386 960335

**ASSO Restau**
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www.assoarte.it

**MAPEI**

**Certiﬁcazione UNI EN ISO 9001:2008**

**Certiﬁcazione UNI EN ISO 14001, OHSAS 18001**

Il Gruppo Mapei, composto da 68 aziende consociate con 59 stabilimenti operanti nei cinque continenti, è oggi il maggior produttore mondiale di adesivi e prodotti complementari per la posa di pavimenti e rivestimenti di ogni tipo e specialista in altri prodotti chimici come impermeabilizzanti, malte speciali e additivi per calcestruzzo, prodotti per il recupero degli edifici Mapei Group, 68 subsidiaries with 59 plants in the five continents, is today the world leader in the production of adhesives and complementary products for the installation of all types 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.

La MARMIROLI Srl, svolge da 40 anni restauro conservativo e strutturale di beni artistici: Le Murali di Archimede; Paramenti di Mostre; Diverse pitture; Paramenti marmorei; Puttu e intonaco; Lavati e dorati è certificata SOA cat. OS2-A class. IV BIS e Cat. OG2 class. III BIS e UNI EN ISO 9001:2008 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 restauro strutturale.

The MARMIROLI Srl, performs for 40 years and structural conservative restoration of artistic goods: 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 UNI EN ISO 9001:2008. It collaborates with a highly specialized staff, with excellence structures in the field of diagnostics, with an engineering study with particular experience in the field of structural restoration.

Melloncelli srl è una società fondata 170 anni fa. L'attività principale è la progettazione e la realizzazione di sistemi meccanici speciali, dopo le soluzioni meccaniche avanzate applicate ai campanili, opera per decenni nella realizzazione di soluzioni elettroniche ed elettriche. Oggi, lungo l'evoluzione del settore elettronico, presenta le sue realizzazioni nel campo dell'amplificazione, riproduzione del suono e video sorveglianza. Grâce alla propria tecnologia illuminazione milita con le loro proprie progettazioni e installazioni come un architetto di luce, a rispetto dell'ambiente. Grazie al sec. Melloncelli srl, fa il suo cammino il settore ecclesiastico al quale Melloncelli si rivolge da decenni, questa propria soluzione per il problema dovuto all'umidità di risalita.

MINERVA RESTAURI SRL ha risolto il problema storico-artistico da anni. Da Palazzo Reale di Napoli fino a Pompei, MINERVA RESTAURI tiene in anni un'importante attività nel campo di recupero e restauro di beni culturali di grande valore storico-artistico. Oggi MINERVA RESTAURI rappresenta una realtà aziendale rinnovata, dove una nuova gestione, un passato illustre e giovani professionalità si confrontano con le problematiche del restauro e conservazione del patrimonio storico-artistico.
La lunga esperienza alle spalle e la continua ricerca e miglioramento rendono KIMIA SPA un leader riconosciuto nella produzione e commercializzazione di materiali ad alta tecnologia per il restauro e recupero edilizio. Siamo stati i primi in Italia (inizio anni '80) a credere nella tecnologia dei materiali compositi per il consolidamento strutturale (inizialmente in carbonio e vetro, ora anche in acciaio con matrici inorganiche), applicati con risultati di durabilità eccellenti, ma non solo... Kimia è anche malte preconfezionate ad alta durabilità, calci idrauliche naturali, soluzioni per impermeabilizzazioni, pavimentazioni, trattamenti protettivi e di pulizia, isolamento e deumidificazioni: una gamma di soluzioni per il restauro e recupero completa, dalle elevatissime prestazioni e sempre conforme alle più recenti normative.

Leonardo S.r.l. interviene sui beni culturali dalla diagnosi al restauro. Possiede le certificazioni SOA categoria OS2 III e OG2 I, oltre al Sistema di Certificazione della Qualità (UNI EN Iso 9001:2008). 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.

Lithos ha operato per più di trent'anni nel campo del restauro, della conservazione, catalogazione, consolidamento e della movimentazione di opere d’arte, faticando, negli ultimi anni, anche nel campo dei lavori edili. L'azienda è composta da un team di restauratori, architetti, ingegneri e conservatori esperti che si occupano della progettazione dell’intervento di restauro, sino alla sua effettiva realizzazione e manutenzione.
<table>
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<tr>
<th>INTERVENTI</th>
<th>TYPE OF WORKS</th>
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<tr>
<td>SOCIO AGGREGATO</td>
<td>STANDARD MEMBER</td>
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<tr>
<td>SOCIO EFFETTIVO</td>
<td>FULL MEMBER</td>
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<tr>
<td>SOCIO ONORARIO</td>
<td>HONORARY MEMBER</td>
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Kairos Restauri S.n.c. design and execute conservation and restoration works of listed artistic and cultural heritage, including murals, frescoes, stone and clay artefacts, plasters, stuccoes, metal objects, paintings on canvas. We carry out diagnostics with the contribution of scientific advisers, university centres (CNR) and private laboratories. Our skills and experience help us successfully deal with all steps of the process, including analysing the artwork, identifying the most convenient techniques and materials, and executing the work. Commitment to high quality standards and compliance with delivery times characterize our relations with both private and public customers.

Kairos Restauri S.n.c.
Tel. +39 02 36682135 - Fax +39 02 66228032
info@kairosrestauri.it

www.kairosrestauri.it

The Institute for the Conservation and Valorization of Cultural Heritage (ICVBC) of the CNR, was founded in 2001 and is located in Florence with units in Rome and Milan. The institutional tasks of 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 not only by the presence of different professionals, but also through the development of an extensive national and international network of cooperation with research Institutes, universities and public or private bodies involved in the protection and conservation of Cultural Heritage.

La società è un’impresa edile con sede in Bari (la più antica della città), che opera prevalentemente per conto terzi nel campo del restauro, delle manutenzioni e delle nuove costruzioni che di restauro artistico. La committenza del settore di restauro è quasi esclusivamente pubblica in particolare Ministero dei Beni Culturali.

The Garibaldi, is a construction company registered in Bari (the oldest one of the town), which operates mainly in the restoration field on behalf of third parties, maintenance and new building constructions all over the national sphere. The restoration, regards the architectural and artistic operating to the monumental assets of interest. Our restoration customers, belongs almost exclusively to the public sphere, especially the Ministry of the Cultural Heritage.
ANCHE LE NOVITÀ DI ASSORESTAUDO | NEW NEWS FROM ASSORESTAUDO

**GEOMAR.IT SNC**
Via Matteotti 5 - 12084 Mondovì (CN)
Tel. +39 0174 45920 - Fax +39 0174 45920
amministrazione@geomar.it
www.geomar.it

**GRAPHITE SRL**
Via R. Bracco 45 - 80133 Napoli
Tel. +39 081 5521385 - Fax +39 081 2307410
contact@graphite.ae
www.graphite.ae

**IBIX SRL**
info@ibix.it
www.ibix.it

**ASOLO RESTAURO**
L’elenco dei soci | members list

**INTERVENTI | TYPE OF WORKS**

**SOCIO AGGREGATO | STANDARD MEMBER**

**SOCIO EFFETTIVO | FULL MEMBER**

**SOCIO ONORARIO | HONORARY MEMBER**

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**ANNO DI FONDAZIONE:**

**CERTIFICAZIONI:**

**FILIALI:**

IBIX®

- **INTERVENTI:**
  - Archeometry. Stereophotogrammetry Photogrammetry Ortophoto.
  - Topography and GPS. Bathymetry. Traditional Surveys.
  - Graphic and Photographic information processing.

IBIX SRL

- **INTERVENTI:**
  - IBIX® designs and manufactures HELIX® low pressure dry or wet vortex cleaning systems.
  - IBIX Mobile Lab® ST01 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 Culturali (Cultural Heritage) and EN-Conservation of Cultural Property respectively.
  - The Mobile Lab® ST01 is a leader in developing technology and materials for low-pressure micro-aero-abrasive cleaning and is a leader in developing technology and materials for low-pressure micro-aero-abrasive cleaning and is leader tecnologico per la pulitura a bassa pressione mediante micro-aero-abrasione. È specializzato in la realizzazione di sistemi di pulitura selettiva a bassa pressione con tecnologia a vortice elicoidale HELIX® a secco e a umido. La tecnologia IBIX®, sviluppata in collaborazione con specialisti del restauro, laboratorio portatile che consente di eseguire indagini diagnostiche sui materiali dell’edilizia storica in maniera semplice ed intuitiva, rendendo accessibili a tutti coloro che operano nel campo della conservazione 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).

**ANNO DI FONDAZIONE:**

**CERTIFICAZIONI:**

**FILIALI:**
ANNO DI FONDAZIONE: 2007
CERTIFICAZIONI: UNI EN ISO 9001 : 2008
SOA OG2 III
Restauro e Conservazione di edifici monumentali ed ecclesiastici.

ANNO DI FONDAZIONE: 2008
Green Building Council Italia (GBC Italia) è un’associazione no profit che fa parte della rete internazionale dei GBC presenti in molti altri paesi; è membro del World GBC e partner di United States Green Building Council (USGBC).

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

EL.EN. ELECTRONIC ENGINEERING SPA
Via Baldanzese 17 - 50041 Calenzano (FI)
Tel. +39 055 8826807 - Fax +39 055 8832884
conservazione@elen.it
www.elengroup.com

EL.EN. has developed and implemented laser systems for the conservation of cultural heritage. It has sponsored the restoration of the reliefs of the Holy Sepulchre in Jerusalem, David by Verrocchio and David by Donatello at the Bargello Museum.
CRISTELLOTTI & MAFFEIS SRL
Via Cesare Abba 2 - 38122 TRENTO
Tel. +39 0175 219040 - Fax +39 0175 5219040
m.cristellotti@libero.it - www.cristellottiemaffeis.it

ANNO DI FONDAZIONE: 1999
CERTIFICAZIONI:
- UNI EN ISO 9001-2008
- UNI EN ISO 14001-2004
- UNI EN BS OHSAS 18001-2007

Miglioramento e adeguamento in funzione antisismica di Edifici. Posa FRP. Demolizioni controllate con utensili diamantati, perforazioni speciali e taglio cemento armato. Risanamento delle murature umide con barriere e chimica per l’edilizia. Micro sabbiatura ecologica per pulizia di marmi, graniti, materiali lapidei, murature faccia a vista, legno, ferro. Installatore certificato Bossong per sistemi di ancoraggio iniettati in murature storiche.

Structural strengthening buildings with innovative systems and well-advanced technology. 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 blasting ecological cleaning of marble, granite, stone, masonry face brick, wood, iron. Bossong certified installer for anchoring systems injected into historic masonry.

The company Cristellotti & Maffeis LTD works for over 20 years. The corporation operates in the setting of diagnostics and of restoration, from the realization of the projects of work to the operational steps, up to the documentation and dissemination through conferences and publications. The company is able to carry out every task in the field of diagnostics, restoration and archeology, by means of the study of materials and degradation causes, also run in collaboration with university and research facilities.

La De Marco S.r.l. può contare su una consolidata esperienza nel restauro dei beni immobili sottoposti a tutela e nel settore specialistico delle indagini archeologiche. In più di venticinque anni di attività, l’impresa ha operato con successo in tutto il territorio nazionale, costruendo giorno dopo giorno un bagaglio di competenze tecniche e di soluzioni progettuali utili al patrimonio culturale.

De Marco s.r.l. has a consolidated experience in the field of cultural heritage restoration and archaeological survey. For more than twenty-five years the company has worked successfully in the whole country, establishing and developing day by day the core expertise to take on consciously and competently any kind of restoration.
La prima associazione delle imprese private gestori dei servizi museali. Fondata nel 2001, Confcultura è l’unica organizzazione in Italia rappresentativa delle imprese private che gestiscono i servizi per la valorizzazione, fruizione e promozione dei Beni Culturali. La missione che ispira l’azione dell’Associazione è la convinzione che i beni culturali siano fattori di sviluppo e di progresso per l’intera società e che si debbano promuovere in maniera sostenibile per una sempre maggiore e migliore fruizione con l’incentivazione di forme ottimali di gestione dei beni culturali. A questo fine Confcultura rappresenta le esigenze e le proposte delle “imprese della cultura” nei confronti delle principali istituzioni politiche ed amministrative, incluse le 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.
Anno di Fondazione: 1980

Vede Art. 3, Statuto Assorestauro - www.assorestauro.org
BOSSONG SPA
Via E. Fermi 49/51, 24050 Grassobbio (BG)
Tel. +39 035 3846011 - Fax +39 035 3846012
consolidamento@bossong.com
info@bossong.com - www.bossong.com

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

ANNO DI FONDAZIONE: 1962
CERTIFICAZIONI: ISO 9001 : 2008
CE-ETA 11/0396   CE-ETA 09/0140   CE-ETA 09/0246   CE-ETA 11/0344
CE-ETA 11/0345   CE-ETA 08/0208   CE-ETA 11/0377

BUILDING IMPROVING SRL
Via MM Boiardo 33 - 20127 Milano
Tel. +39 02 26111920 - Fax +39 02 26891321
info@buildingimproving.com
www.buildingimproving.com


ANNO DI FONDAZIONE: 1994

BOSCH SRL
Via Rho 56 - 20020 Lainate (MI)
Tel. +39 02 93799240 - Fax +39 02 93301029
info@boviar.com
www.boviar.com

Fornitura, assistenza, noleggio di strumentazione geotecnica e geofisica-apparecchiature per controlli non distruttivi del costruito-diagnostica del calcestruzzo, delle murature e del legno.

ANNO DI FONDAZIONE: 1969
CERTIFICAZIONI: ISO 9001 : 2008 QUALITY MANAGEMENT SYSTEM
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 dalle Norme UNI EN ISO 9001:2000.

La società B5 Srl engineering achieved a great experience and known-how in architectural and urban restoration and conservation works throughout the country and in foreign lands, 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 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 UNI EN ISO 9001:2000.

ATE è nata nel Dicembre 1990 sulla spinta di diversi operatori nel campo dell'edilizia, è stata rifondata nel 2000 e nuovamente nel 2010. L'Associazione si propone di sviluppare e approfondire il patrimonio culturale con un approccio tecnologico e tecnico tramite uno scambio di esperienze e notizie operative.

ATE has been founded on December 1990 on the suggestion of several enterprises operating in the building sector. It has been renewed in 2000 and again in 2010. The Association intends to develop and deepen the cultural heritage with a technological and technological overview by means of an exchange of expertise and operative updates.

AN.T.A.RES srl offre un'ampia gamma di prodotti, attrezzature e servizi per la conservazione ed il restauro dei beni culturali. La qualità dei prodotti, garantita da test sul campo e di continuità, è affidabile. Lo staff tecnico di AN.T.A.RES ha una lunga e consolidata esperienza. AN.T.A.RES offre inoltre un servizio di analisi diagnostica.

AN.TARES srl offer a wide range of products, equipment and services for the conservation and restoration of cultural heritage. The quality of products, pre-launch field tests and continuous application monitoring ensure that the products and equipments meet the needs of a careful, conscious and focused restoration. The technical team of AN.T.A.RES srl have a long and consolidated experience in the conservation field. AN.T.A.RES srl perform chemical, biological and imaging analysis applied to cultural heritage.

L’idea imprenditoriale dell’archeoRes prevede la fusione delle logiche imprenditoriali con la passione per il restauro e la conservazione del patrimonio architettonico, artistico e archeologico, utilizzando le competenze e le conoscenze dei soci fondatori. La società opera su tutto il territorio italiano e in specialistiche aree: consolidamento di edifici storici, del restauro artistico e nel settore archeologico comprensivo di tutti i servizi di indagine conoscitiva. La società possiede un know how di assoluto valore, con riconosciute specialità di tecnici del restauro, esperti nelle loro discipline specifiche che le permettono di offrire un prodotto di alta qualità finalizzata.

The 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 in the following specialistic areas: renovation and consolidation of historical buildings, art restoration and in archaeological sector including all services of fact-finding investigation. The company 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.
dispone di uno staff interno che si occupa di Ricerca e Sviluppo in collaborazione con varie Università. Ogni anno la Segreteria organizzativa di RESTAURO Salone dell’Arte e della Conservazione dei Beni Culturali e Ambientali; la prima importante rassegna in Italia per la conservazione, la tutela e la valorizzazione del patrimonio artistico e monumentale, organizza una serie di conferenze, 40 convegni internazionali; 110 incontri tecnici organizzati dagli espositori; 10 mostre tematiche.

CERTIFICAZIONI: "Certificazione in Risparmio Energico" e "Certificazione in Gestione Ambientale".

L’Associazione Italiana per il Patrimonio Archeologico Industriale (AIPAI), la sola operante in questo campo a livello nazionale, è stata fondata nel 1997 da un gruppo di specialisti del patrimonio industriale e da alcune tra le più importanti istituzioni del settore del Paese. L’AIPAI, articolata in sezioni regionali e commissioni di settore nazionali, conta oggi oltre 300 soci attivi e interagisce proficuamente con università, centri di ricerca, fondazioni, musei, organi centrali e periferici dello Stato.

The Italian Association for Industrial Archaeological Heritage, the only one of its kind in Italy, was established in 1997 by a group of specialists in industrial heritage and some of the most important institutions in the sector of the country and it cooperates with universities, research centres, institutions, museums, central and peripheral State organs. It has more than 300 active members and interacts profitably with universities, research centres, foundations, museums, central and peripheral State organs.


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 consulting services, in the fields of structural and seismic engineering. The firm is capable of carrying out services of design, management and coordination of work for new buildings, as well as structural investigations, safety and seismic evaluations for strengthening and consolidation of existing buildings. The use of innovative materials is an integral part of the design approach. The in-depth knowledge of materials, techniques and traditional structural types, especially of those with a historical-monumental character, allows working without difficulties on the restoration and seismic retrofitting of the cultural heritage assets.
Elenco dei soci

rappresentazione nella pubblicazione dei QA_QUADERNI DI ASSORESTARO e nella comunicazione attraverso il sito internet.

Dal 2017 siamo attivi sui maggiori social (Facebook, Twitter, Linkedin) per facilitare la comunicazione con i nostri soci e condividere attività comuni nell’ambito dei beni culturali.

I QA, QUADERNI DI ASSORESTAURO sono la rivista ufficiale dell’Associazione e presentano i cantieri, i progetti e le attività svolte dai soci nell’ambito di specifici progetti. Disponibile in lingua italiana (edizione stampata) e in lingua inglese (edizione online) il sito associazione www.assorestauro.org è disponibile il servizio di consulenza legale gratuita riservata agli associati. Il servizio consente di inviare personalmente i richiami al servizio di consulenza legale alla Sguerso.

STUDIO LEGALE SGUERSO
info@studiosguerso.it - www.studiosguerso.it

AON
www.aon.it

Rec Magazine
info@recmagazine.it - www.recmagazine.it

La rivista digitale periodica dedicata agli operatori del mondo del restauro e del risorse, è uno strumento di aggiornamento e di approfondimento per chi si occupa di beni culturali e in particolare di patrimonio artistico e architettonico. La rivista è alla disposizione di tutte le aziende, professionisti, enti, musei, e aziende che operano nel settore del restauro e dell’edilizia.
La nostra attività di comunicazione

L’attività promozionale e di internazionalizzazione svolta da Assorestauro in rappresentanza delle proprie aziende associate e del comparto del restauro avviene attraverso molteplici azioni di coordinamento che trovano la loro espressione nella partecipazione a fiera e mostre teatri internazionali.

TRADE SHOWS IN 2018

FIRENZE - Salone dell’arte e del Restauro - 16/18 maggio

Due giorni di conferenze tecniche con esperti di tutto il mondo, Assorestauro dedicherà ai soci partecipanti un pomeriggio dedicato alle nuove tecnologie e metodi di restauro.

USA - APTI annual conference Buffalo - 22/27 settembre

Rinnoviamo l’amicizia con i nostri partner d’oltre oceano con la partecipazione di una collettiva del restauro made in Italy. I soci potranno partecipare a conferenze, business lunch e dinneer, incontri e workshop.

TURCHIA - Heritage Istanbul - 12/14 aprile

Assorestauro è stata invitata a partecipare esponendo le eccellenze dei soci e presentando al pubblico internazionale le attività dei presenti alla collettiva.

GERMANY - Denkmal Leipzig - 8/10 novembre

In collaborazione con ICE-agenzia, Assorestauro proporrà una grande esposizione a beneficio del nuovo anno europeo del patrimonio culturale.

TRADE SHOWS IN 2018

CUBA - Fecons - La Havana - 3/6 aprile

Assorestauro parteciperà alla Fiera leader del settore delle costruzioni con una collettiva dedicata al progetto REDI e ai soci interessati al mercato cubano.

CINA - FeCons - La Havana - 19 aprile

Assorestauro sarà presente con la sua collettiva all’evento leader del settore delle costruzioni.

TURCHIA - Heritage Istanbul - 12/14 aprile

Assorestauro è stata invitata a partecipare esponendo le eccellenze dei soci e presentando al pubblico internazionale le attività dei presenti alla collettiva.

GERMANY - Denkmal Leipzig - 8/10 novembre

Assorestauro parteciperà con la sua collettiva alla grande esposizione a beneficio del nuovo anno europeo del patrimonio culturale.
CHI SIAMO
ABOUT US

Heritage & Sustainability: sustainable restoration and reconstruction of Italy’s cultural heritage.

The session of conferences is organized in collaboration with GBC Italia. The close collaboration with the Green Building Council on the issues of energy performance certification of historic buildings will be continued in 2018.

ICE WORKSHOP

A training action aimed at promoting abroad and internationalizing Italian companies is held annually by Assorestauro on behalf of ICE. The action includes the coordination and scientific management of a Course in Italy for foreign specialist restorers from countries of primary importance in the conservation market. The workshop is traditionally held at the same time as the Salone del Restauro in Ferrara and is centred on a different topic each year. “Restoring historic buildings between technology and sustainability” is the title of the workshop of 2018, which will be attended by professionals from Iran, Russia, the US, Kosovo, Albania, Lebanon, Cuba, Turkey and Bulgaria. For the last two years, by virtue of an agreement signed with the Post-graduate course of architectural and landscape heritage of the Politecnico University of Milan, 4 post-graduate students have joined the workshop with the task of organizing and drawing technical reports about the site inspections included in the programme of the workshop.

CUBA

The project started with a mission organised by ICE in 2009. The project has developed over time into two different working paths, in Italy and Cuba, respectively. A Memorandum signed between Eusebio Leal, Historiador de la Ciudad de La Habana, on behalf of the Cuban government, and Carlo Calenda, Vice-Ministry of MISE, on behalf of the Italian government, represents the institutional deed and first formal step to found the Italian Technological Centre for Restoration and Design in Cuba. The site was opened in November 2018 and the shipping of Italian materials to Cuba continued from 2018 to 2019. The project aims to lay the groundwork for a long-term collaboration, having as a goal the exchange of knowledge and skills on the protection of cultural heritage. This is achieved through the sharing of technical knowledge and expertise, and the organisation of joint workshops, seminars, and study visits. The project is managed by the Cuban Institute for the Protection of Cultural Heritage and the Italian Technological Centre for Restoration and Design in Cuba.

IRAN

For a long time, the Association has organised and coordinated a number of exchanges with Iran in the field of cultural heritage. A key aspect of these exchanges is the promotion of sustainable and environmentally friendly practices in restoration and conservation.

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IRAN

For a long time, the Association has organised and coordinated a number of exchanges with Iran in the field of cultural heritage. A key aspect of these exchanges is the promotion of sustainable and environmentally friendly practices in restoration and conservation.
The project, started with a mission organized by ICE in 2009, has respect. A Memorandum signed between Eusebio Leal, Historiador Technological Centre for Restoration and Design in Cuba. The site was started to continue the joint training sessions and restoration works carried out by the companies involved in the project and to all Assores-

Green Building Council on the issues of energy performance certification of historic buildings will be continued in 2018. A training action aimed at promoting abroad and internationalizing Italy's restoration and conservation market includes the coordination and scientific management of a Course in Italy for foreign specialist restorers from countries of primary importance in the conservation market. The workshop is traditionally held at the same time as the Salone del Restauro in Ferrara and is centred on a different topic each year. "Restoring historic buildings between technology and sustainability" is the title of the workshop of 2018, which will be attended by professionals from Iran, Russia, the US, Kosovo, Albania, Lebanon, Cuba, Turkey and Bulgaria. For the last two years, by virtue of the ARAFRICA Network, 4 post-graduate students have joined the workshop with the task of organizing and drawing technical reports about the site inspections included in the workshop.
CHI SIAMO
Commissione Comunicazione e MKT
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 conservazione del patrimonio materiale. Assorestauro è il punto di riferimento sia nazionale sia internazionale per chi voglia affacciarsi al mondo della conservazione italiana, intesa nel modo più ampio possibile, come sintesi delle svariate discipline che 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.

QUALI SONO GLI OBIETTIVI DI ASSORESTAURO?
I n 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 alle diverse anime del settore sia a livello nazionale che internazionale.

Come Associazione di Categoria Nazionale per il comparto del Restauro, Assorestauro coordina, tutela e promuove gli 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 propongono al settore del restauro una serie di soluzioni che vanno dall’analisi e progettazione a quella della gestione e manutenzione dei siti archeologici, attraverso i supporti tecnologici e informatici, e il coordinamento di progetti di ricerca e sviluppo.

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.

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 available technology and of the growing entrepreneurial 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 restoration industry at national and international level.

As a National 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 about image, by carrying out targeted activities in such relevant fields as information 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 scope of the Association. They include diagnostic analysis, design and on site execution, producing technology and materials, as well as contributing to technological innovation, with the support of Institutions, Universities, Agencies for the protection of cultural heritage and the promotion of Italian culture abroad.

Cosa fa l’Associazione?
La Commissione Comunicazione e MKT ha come obiettivo principale la promozione del nostro settore e la sua immagine nel contesto nazionale e europeo. Attraverso la realizzazione di eventi, la partecipazione a conferenze e la diffusione di materiale ostativo, l’Associazione cerca di rendere visibili i tuoi lavori e ti supporta nella tua presenza nel mercato. La tua partecipazione non è solo un beneficio per te, ma anche per tutti quelli che lavorano nel settore del restauro e della conservazione del patrimonio materiale.

Chi è Assorestauro?

Che cosa fa Assorestauro?
La Commissione Comunicazione e MKT fornisce ai suoi associati un supporto tecnico e assistenziale di rilievo, oltre che di supporto economico e legale. Ogni anno organizza un convegno dedicato alla comunicazione e al marketing del settore, e un incontro con i giornalisti per presentare le attività e gli obiettivi dell’Associazione. Inoltre, è attiva nella tutela degli interessi del settore e difende le cause delle imprese del restauro e della conservazione del patrimonio.
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MEMBERSLIST
2018
associazione italiana per il restauro architettonico, artistico, urbano
Italian association for architecture, art and urban restoration
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