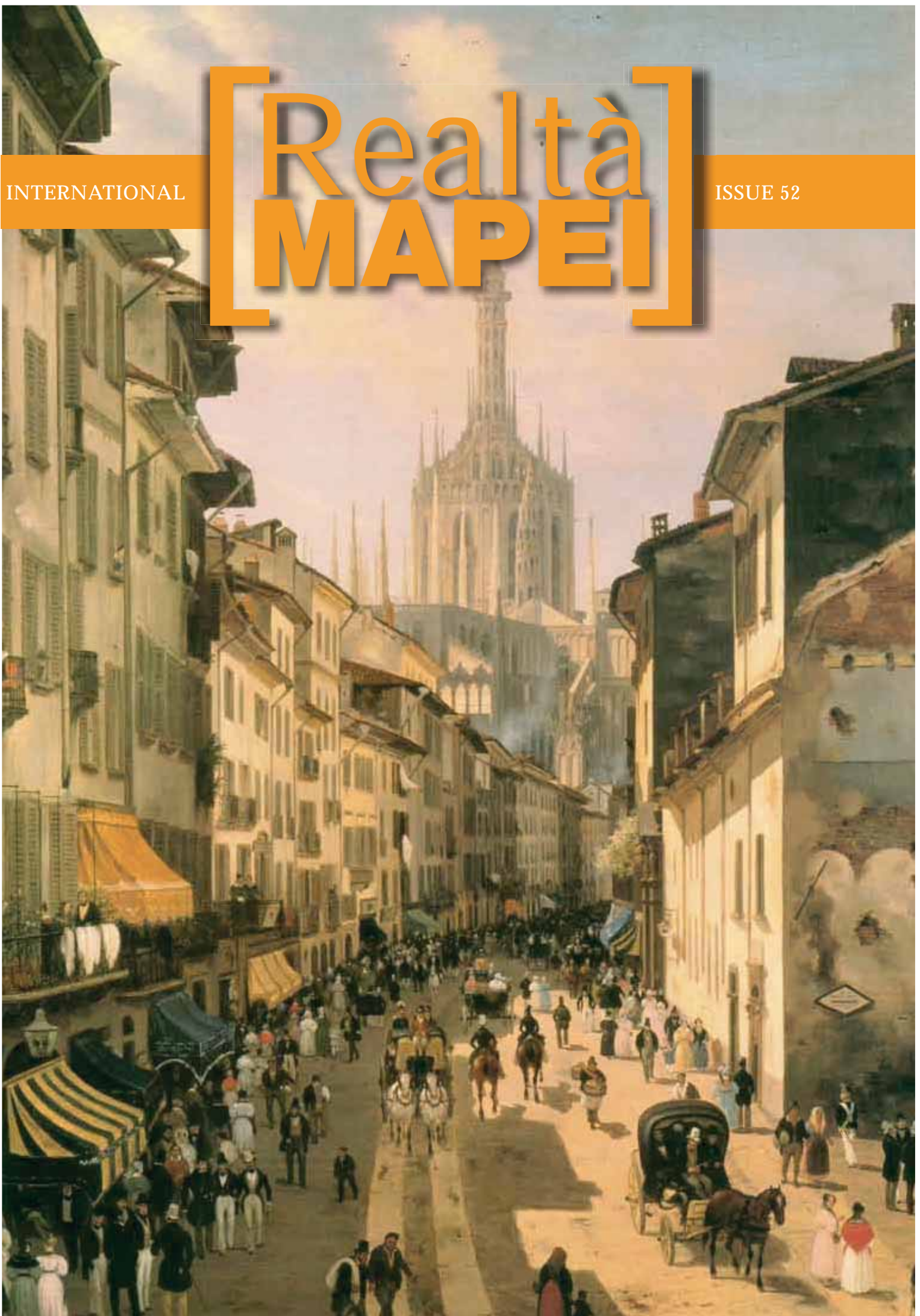


INTERNATIONAL

# Realtà MAPEI

ISSUE 52



SAVE  
THE  
DATE

# LOOKING FORWARD TO MILAN EXPO 2015

1<sup>st</sup> May | 31<sup>st</sup> October



tickets can be purchased at  
<http://www.expo2015.org/en/tickets>

The forthcoming issue of **Realtà Mapei International** will focus on **Expo 2015**, a major international event taking place in Milan from 1<sup>st</sup> May to 31<sup>st</sup> October.

**Realtà Mapei International** will be paying very careful attention to this event, partly because lots of Mapei products and solutions have been used to build the pavilions, clusters and ancillary works.

Mapei has also been involved in lots of Fuori Expo (off-the-expo) projects, supplying products or arranging sponsorships.

We will be allocating plenty of space to these projects in the forthcoming issue.

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UNTIL THE NEXT ISSUE!



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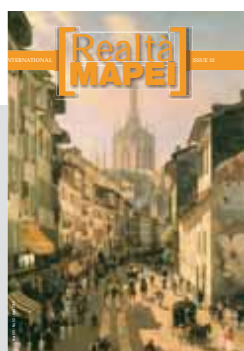
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### COVER STORY

Empio Malara's book *Landscapes in The Betrothed - The Splendours of the Great Milan* focuses on four centuries of history and landscapes in Milan and the Lombardy region. Mapei is the book's Main Sponsor. The picture shows the painting "La corsia dei Servi" by Giuseppe Cannella, 1834, Milano, Civiche Raccolte Storiche, Palazzo Ramondo.

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# THE Allianz Tower IN MILAN



From the very top of the tower, at the 50<sup>th</sup> floor to be precise, you can take in a full circle view of Milan: which makes it the highest panoramic view of the city

Milan's new CityLife district, built in the historical Milan Exhibition hub area, is one of the most impressive urban redevelopment projects in Europe (see *Realtà Mapei International* no. 46). The project extends over an area of more than 360,000 m<sup>2</sup> and is characterised by a well balanced mix of residential buildings, business units, commercial spaces and a large public garden. The M5 underground railway line has a station in the centre of the CityLife area at the foot of the three towers designed by the architects Arata Isozaki with Andrea Maffei, Daniel Libeskind and Zaha Hadid.

Alongside the Allianz tower designed by the Japanese architect, the only one as yet completed, the one designed by Zaha Hadid (170 m tall) is scheduled to be handed over at the end of 2017 and will host the new headquarters of Assicurazioni Generali insurance company, while the tower designed by Daniel Libeskind (175 m tall) is scheduled to be completed for the end of 2018. The characteristic form of the three towers have led to them earning the nicknames "The Straight" (Isozaki), "The Curved" (Libeskind) and "The Twisted" (Hadid).

The Allianz Tower, designed by Arata Isozaki with Andrea Maffei Architects, will be the new home for the headquarters of the German insurance group Allianz, which has purchased the skyscraper and a portion of

the new residential buildings in the CityLife area. Being 220 m tall with 50 floors, it is the tallest skyscraper in Italy and has around 50,000 m<sup>2</sup> of office space to accommodate up to 3,800 people. Above the highest point you can reach on foot, there will be a further 38 m of antennas to transmit signals for the RAI (the Italian national television) network. In the classification of the highest Milanese and Italian buildings, the Isozaki Tower competes with Palazzo Lombardia, headquarters of the Lombardy Regional Government with its 43 floors standing at a height of 161 m (see *Realtà Mapei International* no. 35), and the Unicredit Tower (see *Realtà Mapei International* no. 49), with 146 m above ground which can be reached on foot, an 85 m spire and a total of 35 floors.

The skyscraper is well connected to the urban surroundings where it has been located through a network of underground passageways for vehicles leading to dedicated car-parks (600 spaces in all), as well a direct connection to the offices from the new station of the M5 underground railway line. The interior of the building is characterised by the modular structure of the spaces completely lightened by natural light.

#### Architectonic design

The contract to construct the building was awarded to the general contractor Colombo



**IN THE FACING PAGE.** A view of the completed tower. Above the 202 m that can be reached on foot there are an additional 38 m of television antennas.

**ABOVE.** The architect Arata Isozaki in front of the unfinished tower.

**BELOW, LEFT.** A model of the three Towers in the CityLife area.

**BELOW, RIGHT.** The four golden struts at the foot of the building have both a structural and aesthetic function.





**ABOVE.** Concrete casting by night for the Allianz Tower's foundations.

**BELOW.** The admixtures DYNAMON SP1 and DYNAMON XTEND W300 were used for the concrete mix to build the cores and floor slabs.

**IN THE FACING PAGE.** The Allianz Tower has curved glass façades made up of prefabricated "cellular" modules that allowed them to be installed and mounted very quickly.

Costruzioni SpA (see the dedicated article in this issue of the magazine). They also handled the operational design work, which involved around 1,500 people and 115 sub-contractors. Work started in July 2012 and was completed on schedule after almost three years.

The building sits on a 5,300 m<sup>3</sup> foundation slab made from reinforced concrete, which in turn sits on 62 piles planted 31 m down into the ground. It is characterised by a structure with a series of reinforced concrete cores and mixed, steel-core pillars, with tie beams at the 24<sup>th</sup> floor and at the top of the build-

ing that tie the cores together. At the Tower's feet, four golden struts that are 40-60 m tall, composed of steel elements and forged, wisely combine design and engineering, aesthetical elements with a functional mean, being provided with special devices at their feet which are able to dissipate the energy given by the wind's solicitation on the building. Thanks to the adoption of an almost industrial construction process, using an automatic climbing system designed specifically for this building site, the forecast construction cycle times were reduced considerably: in fact, the floor slabs were poured at an average of one every seven days.

The singularity of the architectonic design of the Allianz Tower lies mainly in its unique form: tall and slim, the skyscraper is a thin parallelepiped with curved, glass façades. The façades, which have a very high degree of transparency, cover a total surface area of 24,000 m<sup>2</sup> and are made from around 4,500 "cellular" elements prefabricated in a workshop, allowing them to be mounted very quickly. The design concept adopted by Isosaki and Maffei was inspired by Costantin Brancusi's sculpture "Endless Column", a kind of metaphor for a construction that does not acknowledge limits towards maximum verticality, made possible by means of a modular system of façades that, by leading into one another, give the impression of repeating themselves towards infinity. Each floor is the same size: 22 m wide and



## ADMIXTURES FOR CONCRETE

Mapei and Unical (an Italian concrete manufacturer) worked in very close partnership on constructing the Allianz Tower, where building work began in August 2012 after laying the foundations.

HSC concretes (C70/85 and C50/60) were supplied for constructing the bearing columns. C40/50 concrete was used to construct the cores and floor slabs, together with a set of other ordinary types of concrete.

Mapei supplied two additives for concrete:

- DYNAMON SP1 super-plasticizer based on a modified acrylic polymer for precast concrete. This product was chosen to obtain extremely very high mechanical strength levels, since it allows the amount of water in the mix to be notably reduced and well matches the low water/cement ratios required by this kind of concrete.
- DYNAMON XTEND W300 acrylic super-plasticiser for concrete was chosen for all the other types of concrete due to its versatility.

Mapei provided constant technical assistance through its on-site "Mobile Concrete Lab" and team of technicians, who took over 2500 concrete samples. Special attention focused on C 70/85 concrete, which is currently one of the most technologically developed concretes available on the market. The working partnership between Mapei and Unical ensured the works were completed on schedule to everybody's satisfaction.





# Andrea Maffei



Influences from the world of cinema and his love of Japan. The renowned architect Andrea Maffei talks about his very personal way of interpreting architecture and introduces his most recent projects, including the **Allianz Tower** which will be soon inaugurated in the CityLife area of Milan





Ph. Obliot

### **How did your partnership with Arata Isozaki come about?**

When I graduated from Florence University I was really interested in working abroad to gain important experience at an international level.

I was extremely fascinated by Japan because Tokyo has always represented the maximum concentration of cutting-edge, futuristic architecture from both a design point of view and a technological point of view. The city of Tokyo seems to incarnate the idea of Fritz Lang's film "Metropolis" made in 1927, the story of a multi-layered city in which trains wind their way between skyscrapers and everything flows quickly, both horizontally and vertically. This is what pushed me to relocate to Tokyo from 1997 to 2004 where I worked as an Associate Partner of Arata Isozaki.

It gave me the chance to travel all over the world, firstly to Qatar for the Sheikh Saud Al Thani projects, and then on to America for other projects. We shared and developed various projects together that went on to become reality, the first one being the ice-hockey stadium for the Turin Winter Olympics in 2006.

### **Can you single out a particular maestro or artist that has become a reference point during your career?**

I think that cinema has played a big part. I have always been influenced by the world of cinema, particularly in the images

that go through my mind while I am developing a new project. Many images from films have helped form my imagination, both consciously and subconsciously.

Cinema has helped draw my imagination closer to the future and I believe that all architectural projects are inevitably an incarnation of our idea of the future. No project or design exists yet, they have still to be designed. They must be designed inevitably for the future.

### **How much has Japanese culture influenced your way of thinking and designing?**

Living and working in Tokyo has taught me a great deal. It was extremely interesting to come face to face with a culture and way of life that are completely different to ours. First of all because Tokyo is the most modern city in the world. Architecture is created in a very short space of time without any problems. This has allowed Japanese architects to become such an enormous success all around the world. Construction companies have a really high level of quality. This has taught me to have the ambition to achieve certain projects. I also find the Japanese approach to work interesting. Everything is based on highly organised project control systems, almost mathematical, in which the size of even the smallest detail has an influence on the overall dimensions of the building, and vice versa. In fact, classic Japanese buildings start from the *tatami* (the traditional Japanese mat for flooring) module system that dictates the size of the rooms and, as a result, the entire architectural form.

### **Where did you get the idea to create a tower for CityLife?**

It stemmed from an investors contest in 2013. The Milan Exhibition Centre wanted to use it to sell the area in the city and finance the new Exhibition Centre in Rho in the outskirts of Milan. We were invited by Generali Real Estate to take part in the contest together. Considering the size of the work, we thought it would be interesting to get other designers involved – Hadid and Libeskind – to recreate the complexity of the city in different forms and styles. The real estate investment itself required that a large park had to be created. And from there came the idea to use skyscrapers, as well as to create a new "city" that could become a new centre of attraction and development for the whole of Milan.

### **How do you think Milan, with its culture and territory, has provided design elements in the CityLife Tower?**

Firstly, with our design, we wanted to pay homage to Milan's Futurism movement. Milan developed the Futurism movement at the start of the 20<sup>th</sup> century and it has played a very important role on the international poetry, visual arts and architectural scene. Their idea of a machine-building was used in the design of the panoramic elevators on the two short sides of the skyscraper, where the lifts are lit up to express an idea of a building that is constantly moving dynamically upwards. One third of the building is stabilised against the actions of the wind by four large steel buttresses. Their presence highlights the workings of the machine-building and emphasise its mechanisms with the same appeal as Futurism.



**LEFT.** Andrea Maffei with Giorgio and Marco Squinzi.

**What does it mean to be a designer in a Milan that is going through such a marked change, so quickly?**

While other Italian cities seem to be motionless and haven't developed changes for decades, in the Milan of today you can witness, day after day, a city in constant transformation. Designers feel like they are witnessing a period of change, in which the city is constantly transforming and developing along new routes. This is taking Milan to the level of the other great European cities, such as London, Paris or Barcelona, where thousands of tourists go also to see the new designs and projects, such as the pyramid at the Louvre or the skyscrapers in the City of London. Milan is Italy's window on Europe and the rest of the world. A kind of meeting point between a classical Italian city and a European and global metropolis.

**What kind of emotion must a piece of architecture convey to people and the spaces around it?**

Firstly, architecture must convey ideas. It is the instrument that an architect uses to express his ideas on that type of building, in that particular context, on that particular city and in that particular moment in history. When a piece of architecture represents a fascinating idea then it overcomes the limits of time, it is destined to remain up to date and attract the attention of many people. Just think about the charm and modernity of the architecture by Palladio or Bernini, like that by Louis Kahn or Portaluppi. The emotion, therefore, derives from the expressive force of an idea that is translated into architecture. Ideas change along with the history of mankind and, as such, characterise the various eras. Other factors could be the proportions of space, light and shadows or materials, but these are just details that help to enrich a more generalised objectivity. For the new headquarters of the Bergamo Provincial Government we wanted to design a horizontal skyscraper. We didn't think it would be suitable to propose buildings that were too high for this city. This led us to design a horizontal skyscraper that envelops itself and looks towards the city around it through covered terraces. This new idea of a building running in a certain direction creates the form of the architecture and is not just an aesthetic or geometric choice.

**What scenarios could pave the way for architectural work in areas known as "hubs"?**

Hubs, such as the former railway or industrial areas, have always been very interesting and stimulating places. You just have to take a look at the Tortona area in Milan, for example, where old industrial buildings have been transformed into fashionable design boutiques and art galleries. They are often located in strategic areas and so allow you to carry out important work that helps change the face of the city. See the project by Herzog & De Meuron in the Porta Volta area of Milan, for example. Old abandoned areas are turned into long, symmetrical buildings that transform an historic gateway so that it becomes a new centre of attraction for the city. In such cases there is a dialogue between the projects and the complex, articulated surroundings and they represent a reaction to many different stimuli and many different messages. There may be various types of reaction, and this is exactly where the talent of the architect lies; how to interpret that area and how to transform it into stimulating architecture. With our project for the railway station in Bologna (Central Italy) we wished to close the rift between two sides of the city: the Bolognina district and the ancient town centre. This operation was performed by building a new type of station, a station not only for travel, but one that includes other activities, such as hotels, shopping, sport and entertainment.



**LEFT.** The new city library in Maranello (Central Italy).

**BELOW.** Bergamo Provincial Government's new headquarters in Bergamo (Northern Italy).



**In your opinion, in what way will the new areas designed for the general public affect the life of those people in the near future?**

The buildings and areas for public use have always dictated the way people live a city. We just have to think about the theatres, stations, museums and parks. They have always defined

# Biography



## ANDREA MAFFEI

After graduating in architecture from Florence University, Andrea Maffei worked with Massimo Carmassi in Pisa and in 1997 relocated to Tokyo to work in the Arata Isozaki studio.

He became an Associate Partner of Arata Isozaki and was responsible for projects in Italy. He was project leader for the design of the ice-hockey stadium, a major project for the 2006 Winter Olympics, the Olympic swimming pool and the Piazza d'Armi park in Turin (2002-2006). He then founded the Andrea Maffei Architects design studio and developed various projects in Italy and abroad. He was awarded various contracts in Italy, including those for the new Bologna Railway Station (2008) and the new main office block for the Bergamo Provincial Government (2009). His name was behind the new exit for the Uffizi Museum (2007) in Florence, the new library in Maranello (2009) inaugurated in 2011 and the Imprima Buildings directional centre in Bergamo. He is currently working as a designer and signer for the CityLife project in Milan (with Arata Isozaki) to construct a large business and residential complex in the former Exhibition Centre area. Apart from his professional work, Maffei has been writing articles for the architectural magazine *Casabella* since 1997. From 2000 until 2002 he worked in the academic world as Visiting Professor of Architectural Design at the Waseda University in Tokyo and took part in conferences and seminars on the subject of architecture.

the form of cities, its main centres, its main attractions for the general public. The way people live these buildings changes according to the historical period and, as a result, our way of life. In Maranello (Italy) we tried to create a new type of library. Not a closed box concentrating just on books, but something open to the natural elements: the air, water and parks, together with a new, more engaging design. The aim of its curved, glass lines is to change the classic concept of libraries as dark, stagnant places and transform it into a dynamic space in which youngsters are drawn in to find a stimulus to be curious about culture. The library itself is surrounded by water right up to the road. This rather unconventional and more contemporary solution is attracting a lot of attention from high school and university students. Here is a concrete example of how architecture can change the lives of people.

### **Does the evolution of building materials influence your design choices?**

There has always been an evolution in materials, just as with every aspect of the story of mankind. We just have to consider how the world of ceramics has evolved, from the simple glazed tiles of yesterday to the modern porcelain tiles of today. Materials help us express the emotions given by surfaces and colours. Actually, the evolution of certain types of material has led to the use of new forms. Materials such as Corian and glass fibres allow us to create new organic, dynamic and highly complex architecture along with the use of new 3D computer graphics software, such as Rhinoceros. Other materials are being developed based on energy savings and the production of energy.

### **How did you get to know Mapei with its world of values and quality in construction work?**

I got to know Mapei for the first time when I was working on our project for a new exit for the Uffizi Museum in Florence. We designed a grand steel loggia covered with Pietra Serena stone. The idea came from our wish to create a new Loggia dei Lanzi in Piazza Castellani that enhanced the impact of the museum itself on the surrounding area. With Mapei, we studied the possibility of designing resins that contained powdered Pietra Serena stone and that could simulate artificial Pietra Serena stone. With this resin we were able to manufacture

large panels of artificial stone to cover the steel structure.

### **When and how did Mapei become partner of your project?**

Today Mapei is involved in our project for the Allianz Tower and supplied a number of products (see the previous article in this issue of the magazine).

### **Sustainability is a fundamental component in design and construction. How is it expressed in your architectural work?**

Sustainability is often another way of saying LEED certification. Firstly, this is determined by adopting energy saving measures, but there are also other factors, such as the use of locally sourced materials, recycled materials and the inclusion of green areas and cycle tracks. Nowadays, these elements have become a determining factor in projects and they have had quite an impact on how we design façades. The way they are designed has changed significantly over the last ten years. They must offer better performance levels, have less glass and have double-skin solutions with thermal insulation. Plant and service systems have also evolved considerably. For the library in Maranello, for example, we used a geothermal plant system to recover the natural heat and turn it into energy. For the new railway station in Bologna we designed a bio-mass plant that runs on recycled materials. Up until the new millennium we were not so sensitive about sustainability. Now, plant designers and architects often work together to find new solutions.

### **What do you think is the contemporary role of architecture in the world and how can architecture encourage economic recovery?**

Architecture has always played a very important role. From when man first started to build he has had to define a form for his buildings, so architecture has always defined the form in which man lives. And still today it has an influence on every building that is constructed and on the contents of today's cities. The economy has always been tightly connected to the building market. And so, as soon as there is an upturn in the market, this will be translated into architecture. Architecture, therefore, is the main driving force behind economic growth and recovery.

**IN THE SPOTLIGHT**  
**MAPEFLOOR I 300 SL**

It is a two-component epoxy formulate with 100% solid content used to create self-levelling or multi-layered resin coatings with an attractive smooth or non-slip surface. It can be used for coating floors in the chemical, pharmaceutical and foodstuff industries, as well as in laboratories, sterile rooms, hospitals, aseptic rooms, mechanised warehouses, shopping centres, and nuclear plants. MAPEFLOOR I 300 SL is highly versatile and may be applied in layers up to 4 mm thick. It is used to create seamless coatings with an attractive finish. It is strong, has good resistance to chemical products and abrasion and may be used in both self-levelling and multi-layered systems. It can contribute up to **3 points** to obtain the **LEED** certification.



60 m long. There are 14 lifts along the shorter sides of the tower, with three on each side offering panoramic views running at a speed of 7 m per second, enabling passengers to reach the top floor in less than one minute while enjoying breathtaking views of the city. The Allianz Tower has already been awarded Gold rating LEED pre-certification, confirming the objective to construct the entire City-Life district with respect for the environment and with zero emissions. The tower will be run mainly on energy from renewable sources, which includes the use of district heating and photovoltaic panels.

**From casting the foundations to the underground car-park**

Mapei was also part of this extraordinary challenge right from the very start, helping with the casting of the foundation slab in 2012. The foundation slab is rectangular and measures 63.1 by 27 m. It varies in thickness from 2.5 m to 3.5 m and sits on both the underlying ground and on 62 drilled piles measuring 33.2 m in length and 1.2-1.5 m in diameter. The piles were made from C32/40XC1 S5 concrete supplied by Monvil Beton, designers of the final concrete mix made from blast-furnace cement and the Mapei admixture MAPEPLAST PZ 300 powdered mineral additive. Other admixtures included DYNAMON SR 914 superplasticizer and VISCOSTAR 3K viscosity modifying admixture (see *Realtà Mapei International* issue no. 41).

As far as the successive interventions were concerned the contractor worked in close contact with Mapei Technical Services,

whose technicians were constantly present on site providing support for the site engineers and to propose the most suitable solutions and systems.

The road surface of the car-parks were coated with MAPEFLOOR PARKING SYSTEM RLT (dry thickness 1,0-1,2 mm) and, as for those areas built with post-tensioned concrete slabs, with MAPEFLOOR PARKING SYSTEM RHT (dry thickness 2,5-3,0 mm). These are non-slip epoxy broadcast system, specific for floors in car parks.

In some areas and in technical rooms MAPEFLOOR PARKING SYSTEM ID was applied on the floors, a system developed specifically for coating road surfaces in indoor car parks. This is a flexible, abrasion- and wear-resistant polyurethane broadcast system. It is particularly resistant to high mechanical stresses and most chemicals and builds even and antiskid surfaces with an attractive finish.

MAPEFLOOR PARKING SYSTEM RLT and MAPEFLOOR PARKING SYSTEM RHT, both including MAPEFLOOR I 300 SL, PRIMER SN and QUARTZ 0.5, are epoxy broadcast systems used for floors in parking areas, with high resistance to chemicals, that are also waterproof to oils and aggressive liquids in general, resistant to frequent cleaning operations and heavy traffic. MAPEFLOOR I 300 SL, a two-component, multi-purpose epoxy formulate, is supplied in a neutral colour and was pigmented using MAPECOLOR PASTE in the colour chosen by the client.

MAPEFLOOR PARKING SYSTEM 31 RLT was also used on the access stairs for the car-park, while ULTRATOP self-levelling cementitious mortar, which is used to create surfaces with high resistance to abrasion, was integrated on the stairs to build them up to the thickness required.

Other works in the underground car-parks included skimming and smoothing the surfaces with PLANITOP 210 water-repellent, cementitious skimming mortar and MAPELASTIC SMART two-component, high-flexibility cementitious mortar.

To anchor the giant stakes, for which the contractor specified 30 MPa after 12 hours, MAPEGROUT SV quick-setting and hardening, compensated-shrinkage hi-flow mortar was used. This proved to be the only product available on the market able to achieve the specified performance characteristics.

MAPEGROUT BM two-component cementitious mortar with a low modulus of elasticity was used to fill the anchor pockets of the cable-stays. CABLEJET plasticizing and an-





ti-shrinkage agent was added to the anchor points for the cable-stays. To anchor metal framework in place the contractor used MAPEFILL F high performance mortar, which is used to anchor and seal metal structures in concrete.

#### Bonding ceramic tiles

The substrates in the bathrooms were treated with a coat of PRIMER G synthetic resin primer in water dispersion to improve ad-

hesion. Then they were waterproofed with MAPELASTIC two-component cementitious mortar. Ceramic tiles were bonded on around 2,500 m<sup>2</sup> of floors and walls using the cementitious adhesives KERAFLEX MAXI and ADESILEX P9 and joints were grouted with ULTRACOLOR PLUS high performance mortar chosen in its white shade to blend in with the wall and floor coverings. The expansion joints were sealed with PRIMER FD and MAPESIL AC.

**IN THESE PAGES.** The road surfaces in the underground car-parks were coated with MAPEFLOOR PARKING SYSTEM RLT, MAPEFLOOR PARKING SYSTEM RHT, MAPEFLOOR PARKING SYSTEM ID, and MAPEFLOOR SYSTEM 31 RLT.

#### Technical Data

**Allianz Tower, Milan (Italy)**

**Period of Construction:** 2012-2015

**Period of the Intervention:** 2012-2015

**Intervention by Mapei:** supplying products to build resin and cementitious floorings; levelling and waterproofing substrates; repairing concrete; anchoring works; laying ceramic tiles

**Design:** Arata Isozaki and Andrea Maffei Architects

**Design for Architectural Operational Works:** Colombo Costruzioni SpA, MPartners Srl

**Design for Structural Operational Works:** Colombo Costruzioni SpA, Studio ECSD (Prof. Franco Mola, Studio Iorio; Prof. Francesco Iorio, Studio Capè)

**Design for Plants Operational Works:** Colombo Costruzioni SpA, Studio Ariatta

**Client:** CityLife SpA

**Works Direction:** IN.PRO.SRL and Ingegneria SPM (Claudio Guido)

**Site Direction:** Gianfranco Cesana and Corrado Caldera

**Contractor:** Colombo Costruzioni SpA

**Laying Companies:** CLS Unical Pavimenti Speciali for the resin

floorings; Piastrellando for the ceramic floors

**Mapei Co-ordinators:** Massimo Seregini, Alberto Arosio, Pietro Lattarulo, Antonio Salomone, Marco Cantachin, Mapei SpA (Italy)

#### Mapei Products

Preparing the concrete mix: Dynamon SP1, Dynamon Xtend W300

Preparing the concrete for the foundations: Mapeplast PZ 300, Viscostar 3K, Dynamon SR 914

Waterproofing and levelling the substrates: Mapelast, Mapelast Smart, Primer G, Planitop 210

Building resin and cementitious floorings: Mapefloor Parking System RTL and Mapefloor Parking System RHT (Mapefloor I 300 SL, Primer SN, Quartz 0.5), Mapefloor Parking System ID, Mapecolor Paste, Ultratop

Anchoring works: Cablejet, Mapefill F, Mapegrout BM, Mapegrout SV

Laying ceramic tiles: Adesilex P9, Keraflex Maxi,

Grouting tile joints and sealing expansion joints: Mapesil AC, Primer FD, Ultracolor Plus

**For further information see [www.mapei.com](http://www.mapei.com)**

## THE INTERVIEW

The CEO of Colombo Costruzioni tells us about the challenges and rewards for a company whose trademark for more than 100 years has been quality and expertise



# Luigi Colombo

*Founded in Lecco (Northern Italy) at the beginning of the last century, over the years Colombo Costruzioni has become one of the most important companies on the Italian construction scene. Founded by Guglielmo Colombo, the company started operating in 1905 by building constructions and infrastructures in Lecco and the surrounding area and then grew over the years by building large architectural structures and collaborating with important designers such as Renzo Piano, Vittorio Gregotti and Stefano Boeri.*

*The architect Luigi Colombo, CEO of Colombo Costruzioni, is the fourth generation of the family sitting at the head of the company.*

**You have been operating for more than a century in the construction sector. How has the technological innovation that has taken place in the materials field – which sees Mapei leading the way – and construction equipment changed your way of working?**

There has been a progressive, growing trend towards technological innovation: Colombo Costruzioni was one of the first companies to use CAD software back in the 1980's. The need to monitor technical aspects more closely has led to an increase in the amount of testing carried out in the field. Apart from this, there is an increasing amount of documentation required by our clients who are demanding higher performance levels. And, as a result, materials have also had to be constantly improved to keep pace with this trend.

**With the introduction of new materials how has life changed on site?**

New materials, such as those that Mapei is capable of designing and developing for the needs of Colombo Costruzioni, ensure we can offer more guarantees for the results required. They offer better results and we can achieve targets that previously we would never have even taken into consideration.

**Next June will see the inauguration of the Allianz Tower designed by Arata Isozaki for the City Life area in Milan. During the press conference to present the building, you pointed out that in just 800 days you had gone from “ground zero” to completion of the tallest skyscraper in Italy. How did you face up to the challenge of such a complex and prestigious operation?**

Completing such a complex building as the Allianz Tower, and at the same time meeting scheduling, budget, construction quality and safety targets, requires a building site to be engineered down to the smallest detail. In the past, the entire structure was built before going on to complete the external details and finishing operations, with the final phase being the installation of the internal plant service systems. Nowadays the entire process is more like a constant flow: while we work upwards, thanks to the technology offered by the slip-form construction technique, at the same time we can work on the external finishing works and install the internal plant service systems. This is why careful programming is absolutely essential so that all the work, supplies and site scheduling is perfectly synchronised and progress in harmony.

**There is a long-standing and mutually successful collaboration between Colombo Costruzioni and architectural design studios. How has the relationship between architects and contractors changed over the years, between theory and life on the building site?**

An architect's idea is like a challenge that an architect presents to Colombo Costruzioni: we are asked to make an intuition become something concrete, to interpret a dream. The engineers and architects from our design team transform the thoughts of an architect into reality. How? By developing executive and construction drawings that represent the passage

of an intuition and a dream into the reality of a construction. And sometimes we go even further: during the actual construction work a project may have requirements or characteristics that were not foreseen during the preliminary phases. In such cases we extend our team to involve centres of excellence, such as the Polytechnic University and the most highly qualified suppliers, then together we develop specific interventions. I have used the words “requirements” and “characteristics” rather than the word “problem”, because we look at such challenges positively: they offer a chance to learn, to search and experiment with solutions, an opportunity to pick up something new and, therefore, grow.

**From Renzo Piano to Stefano Boeri, passing through Vittorio Gregotti and Antonio Citterio: the Italian “star” architects are at home in your company. How is the collaboration organised between the big names in architecture and a successful company such as yours?**

I like to think that it is a decision taken with both eyes open by both parties: we have learned something from every architect we have met and I believe that each one of them has found us to be good listeners, reliable, proactive and enthusiastic.

**What kind of relationship is there between construction companies and manufacturers of building materials?**

We are in contact on a daily basis with consultants from Mapei to discuss various aspects of construction: from the fluidity of concrete to the resistance of certain materials and their performance characteristics. With certain interventions we are supported constantly by Mapei Technical Services department, especially when we are working on solutions regarding concrete combined with steel. In these cases the collaboration of the Mapei staff is invaluable. For some pours of concrete we have used Mapei admixtures that have considerably improved the plasticity and strength of the concrete. And again, we have been pouring concrete at height using Mapei admixtures. When anchoring steel columns to the concrete floor slabs for the Allianz Tower, Mapei materials played a fundamental role.

**You have been Chairman of the Lombardy section of ANCE (the Association of Italian Building Companies) for a number of years and during the most recent assembly of the association, on the subject of the current, difficult situation, you declared “we need new answers to new needs”. Which ones in your opinion?**

ANCE is the system that represents the interests of Italian building companies. Its various institutional, central, regional and provincial levels have two main functions: as a lobby group to protect the interests of this industry and to provide a service for its members. Apart from the traditional ones, such

» THANKS TO MAPEI PRODUCTS WE CAN ACHIEVE TARGETS THAT PREVIOUSLY WE WOULD NEVER HAVE EVEN TAKEN INTO CONSIDERATION



**ABOVE.** The Allianz Tower, designed by Arata Isozaki and Andrea Maffei Architects for the CityLife area in Milan.

as trade union, urban planning and public work services, others have been added over the years which are connected and complementary to the first ones related to the environment, technology, technical standards and so on. This is just to underline how it is a rather complex body that nowadays has numerous functions and tasks.

The world, and so the market, have changed considerably over the last decade. We just need to think about all the new technologies and the impact they have on everybody’s lives, with considerable potential also for the workings of the Association that must adapt to the times that are changing, just like any other economic body.

Apart from reducing costs, the priority today is to offer better performing and more specialised services by constructing a network of those specialities at the service of companies, and through this new offer increase our membership base.

The system is organised to meet the needs of a sector that, number wise, will probably never go back to the levels of the past; and even if it did go back to those levels, it would be



**ABOVE.** The Muse Science Museum in Trento (Northern Italy)

**FACING PAGE, RIGHT.** The UniCredit complex surrounding Piazza Gae Aulenti in Milan.

**BOTTOM OF THE PAGE.** Luigi Colombo with his father Antonio Colombo and Giorgio Squinzi, CEO of the Mapei Group (in the middle).

working in a completely different business context.

I am convinced that the Association is an important player in today's increasingly complex market and that it must continue to be an authoritative interface for the institutions it has to talk and deal with. I also believe that building companies, for sheer numbers and the importance of the sector for the general economy, cannot do without somebody to represent them, but I also believe that this body must quickly adapt to the numerous changes that take place one after the other in order to meet the growing needs of companies.

It must help encourage its members to grow from a cultural point of view when it comes to quality, safety and legality. Apart from what we were discussing earlier, the Association must construct a kind of guarantee for the reliability and reputation of its members.

**On the same occasion you also stated that the driving force behind the few small, positive signs that are being registered in the renovation and mortgages market, project financing and the earth-moving equipment market was the next edition of Expo. On the subject of this event, will it be an opportunity or another missed chance?**

Expo will certainly be an opportunity. Apart from accelerating the completion of a series of infrastructure projects that are strategic for the Lombardy region – first of all the major infrastructure works and underground rail network mentioned in the bid dossier for Expo – the stimulus to put on the best event possible has encouraged a series of positive signals that make us hope for the future.

Apart from the initial problems that caused more than a slight delay to the start of work on the exhibition site, and not only there, work is now being carried out at such a pace that everything will certainly be completed for the start of the event. In Italy we are really good at making life difficult for ourselves, but we are even better at solving problems when the chips are down.

**Over the last century you have gone from constructing in your home territory and then in the whole of Italy. Which projects have represented a real and concrete change in pace for the story of your company?**

In the 1990's we started our collaboration with Renzo Piano, right in our home town Lecco, with the Meridiana Centre. It has been an important partnership that continued with other interventions, such as the Auditorium Parco della Musica in Rome, the new head offices of the Banca Popolare di Lodi bank in Lodi (Northern Italy) and the Le Albere complex in Trento (Northern Italy). With these interventions we started to deal with highly complex projects, both for the number of operations carried out on site and for the number of people actually working on site on a daily basis, sometimes more than 400 people on a three-shift basis. From 2000 we started working on projects for large companies dealing with real estate investment funds such as Hines Italia, City Life and Castello SGR: with constructions such as the Unicredit Tower, the Allianz Tower and the Le Albere complex we dealt with new levels of complexity regarding building site management and new engineering problems. I think that both periods proved to be decisive in the development of Colombo Costruzioni.



**The Vertical Wood is a unique feature amongst the new skyscrapers in Milan, with design working alongside the rules of eco-compatibility.**

**A kind of construction you have already experimented with, for example, for the new Le Albere district in Trento designed by Renzo**



**Piano. What does it mean for a contractor to construct according to eco-compatible criteria? Is this a choice that will be rewarded by the buyer?**

Colombo Costruzioni is a historic company: it has been around for 110 years and is at its fifth generation. The level of experience and skill we have accumulated over the years allows us to constantly test our ability and accept more interesting challenges regarding both technological innovation and cutting-edge works management systems.

The work we have carried out over the last few years in particular have allowed us to accumulate an exceptional level of technical expertise based on men and technology that guarantee the highest levels of quality and safety. These characteristics, together with the originality and architectural research by great professionals, are fundamental nowadays to meet market demand. In fact, constructing buildings using eco-compatible criteria is, first and foremost, the right choice as far as saving and using resources efficiently is concerned, which is something we should all think about, but secondly it is the only route to follow to satisfy the new markets which now, unlike the past, are looking undoubtedly for quality. The Vertical Wood and Le Albere projects demonstrate what we mean by quality in the widest sense of the word, from both a design point of view and a construction point of view. The market will always pay more and more attention to these choices.

**Colombo Costruzioni has been in business for many years. What would you like to maintain from the original imprint of its founder Guglielmo Colombo and what, on the other hand, do you hope to change in the years to come?**

The tradition for quality and professionalism that have been a trademark of the company right from the very start are elements that have been essential characteristics of the history

**BELOW, LEFT.** The Vertical Wood building in Milan in the Porta Nuova district.

**BELOW, RIGHT.** The Auditorium Parco della Musica in Rome.



of Colombo Costruzioni for more than a century. Another vital element is the human factor: those who work with us at every level within the company (which has 180 direct employees) are people we believe in, people that we train, nurture and involve in our growth and objectives. Lastly, the family: apart from the third and fourth generations of the family, the fifth generation is also working for the company to guarantee the continuity of our values. We have built more than a century of history on these firmly planted roots.

Change – a constant evolution in knowledge, challenges and markets – has always been in our DNA and is one of the features that characterises us. The fifth generation of the Colombo family can look beyond the national boundaries that are already acting on our wish to do business and that will put our passion for challenges to the test. This is what we at Colombo Costruzioni mean by change.





# Empio Malara

A chat about the landscapes of the Lombardy Region, from echoes of the poet and novelist Alessandro Manzoni to the necessities of the present

*The renowned architect Empio Malara is the name behind various projects and urban redevelopment schemes in the area stretching from the River Ticino to the River Adda in Northern Italy. He is also founder, President and driving force behind the Friends of the Navigli Canals Association. The story of his professional career has been published in a book entitled "Malara Associati, Urban Planning and Architecture" (published by Skira in 2007). He published another book in 2014 entitled "The Landscapes of The Betrothed" (published by Chimera Editore), to which the previous article is devoted.*

**Arch. Malara, you took the great novel by Alessandro Manzoni as an example for a discussion on landscapes. I'm curious to know why you chose *The Betrothed*.**

After carefully reading the novel, and at the same time scrutinising the landscape and reading the research into the life of Alessandro Manzoni and his role as a grower and lover of plants, I became convinced that he was a truly great landscape architect. In his novel he evoked and described the Milanese landscapes from the seventeenth and nineteenth centuries and, as a lover of plants, he worked to make the most of the agricultural landscape and created the gardens around his homes like a true architect. He deserves to be awarded a posthumous degree in landscape architecture.

Having said that, to approach Manzoni and take on the challenge of writing a book about the landscapes of *The Betrothed* was not a simple task. I received a lot of help from Dr. Jone Riva and Prof. Angelo Stella from the National Manzoni Study Centre, and it was Giorgio Squinzi himself who helped me decide to put it into practice and

publish the book. In fact, during a convention on the renovation work carried out on the Duomo Cathedral in Milan, he imagined the main character from the novel, Renzo, returning to the Milan of today.

**You didn't limit your discussion about the landscape to the past and its mutation between the seventeenth and nineteenth centuries; you scrutinised it right up to the present.**

The aim of the book is to rekindle the care that the people of Milan have for the landscape, to make them more sensitive and appreciate the landscape they have inherited from the past, which is an absolute necessity if we want to understand our identity. To conserve and appreciate the landscape and restore our attention for those works and places evoked and described by Manzoni means, for example, to carry on admiring the cultural value of the Duomo Cathedral (Veneranda Fabbrica del Duomo) just as Renzo once did, from the highest vantage point of our territory, fully aware of the exemplary, perennial renovation work on "The Eighth Wonder" which, as Giorgio Squinzi said, will be there to see for the tourists who come to Milan for the Expo, "as an emblem and the very essence of those great values that are deeply rooted in Milan".

**In presenting your Manzonian landscapes, with a rich iconography and photographic analysis of today by Andrea Micheli, you are suggesting, by casting one's eye further, urban renovation to bring new life to some of those neglected corners of Milan.**

I do admit that I have used Manzoni to suggest certain actions with the aim of reappraising works and places

in Milan and its surroundings, as well as in Monza, in the Brianza area and Lecco, places that have a rich history. To reappraise, for example, what remains of the wonderful fifteenth century architecture of Lazzaretto (quarantine station): the small building in Via San Gregorio, made up of three of the “Small rooms that were”, noted Manzoni, “Two hundred and eighty eight, or thereabouts, in our times”, would be necessary. This porticoed building, which nowadays is used inappropriately, could show in the three small rooms a testimony to the pain it felt as the centre of the plague, the festive inauguration of the Cisalpine Republic and the foolish demolition of the Lazzaretto. This is an important story of the mutation of the landscape and of savage real estate speculation, something that shouldn't be allowed to happen if you want continuity between the past and the future if, as Angelo Stella wrote in his brief essay on the sentiment of landscapes – published in the book – you wish to conserve “A Milan that remains culturally its own”.

**The subtitle of your book is “The beauty of the Great Milan revealed by Alessandro Manzoni”. Could visitors to the Expo travel back in time and could they appreciate what has survived of Manzoni?**

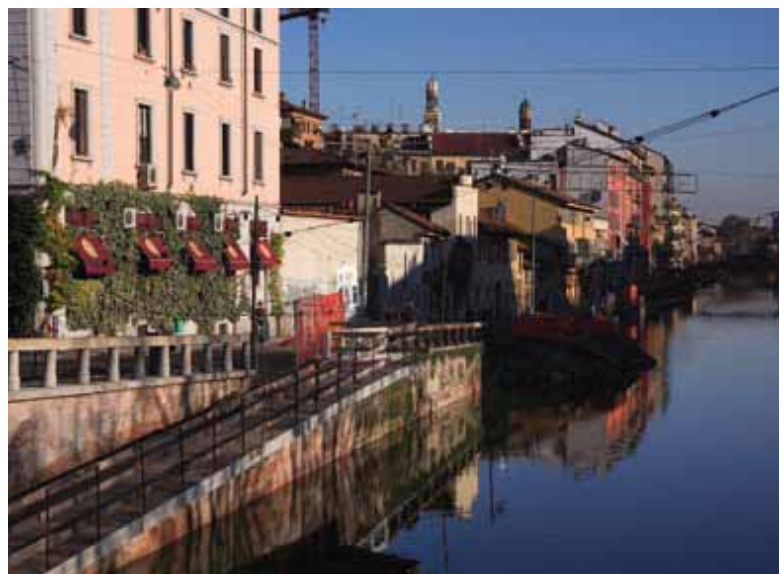
Thanks to a suggestion from Adriana Spazzoli the book, published by Chimera, has been written in Italian and English and may be used by readers that are interested in seeing those places through Manzoni's “responsible eyes”. In fact, each chapter of the book opens with a passage from his book to enable the landscapes evoked or described by Manzoni to be read and, as such, to see the places again; for example “That branch of the Lake of Como...” while reading the description by Manzoni.

**You are an architect committed to the rediscovery and restitution of the Lombardy landscape and you have taken part in the preparation of plans for several regional parks, development plans and general planning outlines. You have been awarded for your constant work to promote the utilisation of the Navigli Canals in Milan for leisure activities and the generation of renewal energy. Amongst all the cultural activities you have promoted recently, which one have you taken most to heart?**

I would dearly love to make further progress with the added value that renovation work brings. The suggestion I initially proposed to the mayor of Milan received further backing from a group of professionals who presented the idea to the Urban Planning Councillor for Milan who is now Deputy Mayor, Ada Lucia De Cesaris, who introduced the added value of renovation work into the local government's urban development plan, albeit limited to buildings listed by the Milan's Archaeological Heritage Department and buildings of public interest. The idea is consistent with the “Milano Nei Cantieri dell'Arte (Milan in the sites of art)” initiative which was proposed together

with the architect, Libero Corrieri, to Claudio De Albertis. De Albertis has been excellent in involving Assimpredil Ance (the Association of the construction and complementary companies belonging to the Milan, Lodi, and Monza and Brianza provinces), the Milan Chamber of Commerce, the Milan's Head of the Archaeological Heritage Department and the Diocese of Milan in organising the annual “Milano nei cantieri dell'arte” event, with us sitting on the technical-scientific committee chaired by Massimiliano De Adamich. This event has been held annually from 2009 to 2015 to present and promote the excellent renovation work that has been carried out, or that is currently ongoing, to the people of Milan, to Italy and to the world of Expo. To present and promote the work and products of Italian companies that have the most intense research activities, professionalism and craftsmanship, as well as innovative materials for restoring buildings and works of art. Apart from Milan and the surrounding province, the events have also involved the cities and provinces of Monza and Lodi, and, as you well know, Mapei is “Main Sponsor”. That experience has led to more awareness of the importance of renovation work; not only of buildings, but also of town piazzas and pavements, such as the work carried out on Piazza Duomo in Milan using Mapei products (see *Realtà Mapei International* no.50). From these brief considerations it is easy to use the relationships, between the suggestions in the book *The Landscapes of The Betrothed*, renovation work presented in some of the “Milano Nei Cantieri dell'Arte” events and the “added value of renovation work”, to encourage their circulation. I would dearly love to take the latter one even further as a contribution to the renovation of not only our city of Milan and the Lombardy region, but also of Italy, the land of the hundred cities.

**BELOW.** The Naviglio Grande Canal in Milan. Empio Malara is founder, President and driving force behind the Friends of the Navigli Canals Association.






# Mapei for the Great Milan

## ON THE WAY TO EXPO 2015

Mapei is the Main Sponsor of *Landscapes* in *"The Betrothed"* – The splendours of the Great Milan revealed by Alessandro Manzoni written by Empio Malara



**THIS PAGE.** A view of Piazza Mercanti square near the Duomo Cathedral in Milan, above, in a recent photo and, bottom of page, in Angelo Inganni's painting "L'angolo tra piazza dei Mercanti e piazza Duomo" (1844, Milan, Civiche Raccolte Storiche, Palazzo Morando).



**ABOVE.** A view of the Porta Venezia tollhouses in Milan in Giuseppe Elena's painting "Milano Porta Orientale" (1840 circa, Milan, Civica Raccolta Stampe Bertarelli) and, right, in a recent photo.



Culture, work and a love of Milan, the land where it came into being and then grew worldwide. These are the underlying reasons why Mapei decided to help sponsor the book entitled *Landscapes in The Betrothed – The Splendours of the Great Milan Revealed* by Alessandro Manzoni written by Empio Malara and published by Chimera in partnership with the Italian National Centre for Manzoni Studies.

The bonds between Mapei and Milan have very deep roots that emerged in full force during the book's presentation at Manzoni's house in Milan on 10<sup>th</sup> November last year, which was attended by Mapei's CEO, Giorgio Squinzi.

"This is the city where I grew up", so Giorgio Squinzi has pointed out several times "and also where Mapei came into being and developed, the company founded by my father Rodolfo over 75 years ago".

"I cannot help wondering what Renzo would stop and admire today if he found himself in front of Milan Cathedral", so Squinzi stated in an article of his that was published in the Italian newspaper *Corriere della Sera* on 23<sup>rd</sup> April 2013 in conjunction with a meeting about "Building work on Duomo Cathedral, an example of how to develop the city" held at Palazzo Giureconsulti during the "Ad Usum Fabricae" exhibition sponsored by Mapei. "Renzo would see a magnificent Madonnina (statue of the Virgin Mary on top of Milan Cathedral) looming

over a city that is determined to grow and make its presence felt, both physically - thanks to the major projects that are changing it - and culturally, by supporting the very best of Italian manufacturing that is the envy of the entire world".

Milan is a city that is constantly on the move, ready to take up any new challenges it has to face. The most tricky of which, in the near future, is Expo 2015. Significantly, in his book entitled *Landscapes in "The Betrothed"*, the author, Empio Malara, expresses his thanks to Adriana Spazzoli, the Mapei Group's Operational Marketing and Communication Director, for having suggested "a parallel text translated into English", in order to inform visitors to the 2015 Expo all about "the wonders of Milan".

This turned out to be a great idea, much appreciated by lots of our country's American friends attending the book's official presentation at Eataly in New York on 11<sup>th</sup> February.

And linking up with this great forthcoming event, a debate was held in the Urban Centre in Galleria Vittorio Emanuele II, Milan, on Thursday, 5<sup>th</sup> February, on the subject of "Exporting the landscape, Alessandro Manzoni's invitation to renovate and redevelop ready for 2015". Adriana Spazzoli, Libero Corrieri, Filippo Pizzoni, Angelo Stella and, of course, the author himself, all made reference in their speeches to the proposals and suggestions given by Empio Malara in his recent book, also

**RIGHT.** Giorgio Squinzi attended the book presentation last November.





**ABOVE.** Left: a view of Lecco Bridge dated 1819. The oldest bridge along the River Adda is still working and was commissioned to be built by Azzone Visconti, the Lord of Milan in the 14<sup>th</sup> century. On the right: a recent picture showing the bridge in the bottom left.

mentioning Manzoni's vision and the future that lies ahead for the Great Milan.

**Four centuries of history and landscapes**

Showing the keen eye and sensibility of an erudite architect and the real fondness of somebody who loves his own city and wants to contribute to its rebirth, Empio Malara offers a modern-day rereading of all those Manzonian locations in Lombardy from the 17<sup>th</sup>-19<sup>th</sup> centuries.

Thanks to his knowledgeable reconstruction and philological identification of the places and landscapes immortalised in the descriptions contained in the novel, the book presents its author as a modern landscape architect "leading the reader along its lakeside streets and alleyways, river landscapes and countryside, as well as such urban locations as Lecco, Monza and, above all, Milan, which in the novel stands as an urban contrast to the orderly, tree-speckled countryside".

The great thing about Malara's book is its "temporal three-dimensionality": starting from the present-day 19<sup>th</sup>-century when it was written, the city of Milan in which the story of Renzo and Lucia described by Manzoni unfolds is actually the 17<sup>th</sup> century. By discovering and focusing on what is perhaps a little-known aspect of the great author - Manzoni the scholar of botany and architecture - Malara has the chance to fly through time and trace a picture of the city and its surrounding territory that embraces the last four centuries of its history.

All this, of course, in order to assess its current state in the third millennium and suggest some direct action that could now be taken to enhance and redevelop it. Like for instance Expo 2015, an event that is forcing the city to undertake an extensive schedule of spatial redevelopment and maintenance. With this event looming on the horizon, the book offers people who will be visiting the Expo a carefully thought-out geographical guidebook revealing all the most significant places in the Great Milan and unveiling all the charm that emerges when you discover how they have changed through time.

The idea is not just to provide readers with plenty of informa-

tion about its history and landscape, partly with the aid of lots of images, often paintings by artist like Induno or D'Azeglio, Inganni or Canella, or illustrators like Gonin, whose works are carefully compared to rural/urban Lombardy as it appears today in Andrea Micheli's photographs. The aim is also to inform modern-day people, make them realise how important our landscape heritage is and the key role it plays in defining our identity. Preserving the landscape for both cultural and tourist purposes is, in actual fact, a duty that calls for very careful planning and decision-making.

When evoking and describing the landscapes of the Great Milan in *The Betrothed*, Manzoni encourages us to think about the possible redevelopment and enhancement of not just "That branch of Lake Como.....", but also Azzone Visconti Bridge, Lecco and Pescarenico, the middle course of the River Adda, Monza and Brianza and, first and foremost, Milan. Conjuring up images of its ramparts, gateways, Naviglio Canal and the square in front of the Duomo Cathedral, Manzoni invites us, "arm-in-arm" with Malara, not just to consider one certain pathway or place of art, but to actually envisage an entire cultural hub extending right across the entire area encompassed within the circumference of the Navigli canals. In this part of the city borough that Manzoni describes as "the city proper", in addition to museums, galleries and theatres, there are also monumental religious and civil works, such as the remains of the old Lazzaretto (quarantine station) and the magnificent architecture of Ca' Granda complex, now home to the Milan State University.

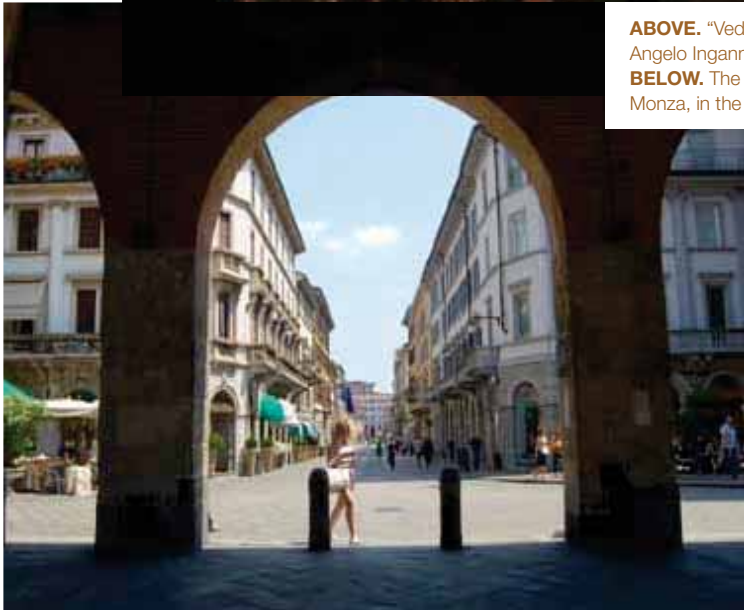
**Beauty on the way to Expo 2015**

Like all those companies focusing on innovation and excellence, Mapei constantly has one eye cast towards the future. A winning approach constantly enforced by the realisation that – as Adriana Spazzoli pointed out during the recent meeting held at the Urban Centre in Milan - "the future is built on the past".

Mapei's keen awareness of its own roots and those of the land



**ABOVE.** "Veduta della contrada di Monza", Angelo Inganni (1850, Monza, Musei Civici).  
**BELOW.** The same spot in the city centre of Monza, in the Porta Nuova district.



where it first came into being is, in fact, one of the pillars behind its worldwide success. Transforming and growing while remaining the same is a prerogative that makes the company stand out and a quality it shares with its home city.

So it is hardly surprising that Mapei is involved in the redevelopment of Manzoni's home in Via Morone, Milan, the only house the writer was keen to buy in "authentic Milan" and where he lived for sixty years.

This building, which is planned to be converted into a cultural centre of international standing, symbolises the link between the past and future, between the old and innovation.

Just like Mapei, Milan never stops. It is constantly on the move and changes very quickly. A concrete example of this for all to see (if we bother to look up) are the recent constructions of modern residential districts composed of predominantly high-

rise buildings. The cityscape is changing and, once again, Milan is proving that it is not afraid to take on the fresh challenges that modern-day life casts down.

The most tricky of all these challenges, in the near future, is most certainly Expo 2015.

An époque-making event, which, this year, will place the city at the focus of the world's attention and could well be a crucial opportunity to re-launch the entire Italian nation's economy and image.

But the opportunity offered by this latest delightful book written by the architect Empio Malara is particularly enticing for other reasons. By providing a portrait of Alessandro Manzoni as a nature-lover and admirer of landscape architecture, Malara discredits one of the most widely held stereotypes that depicts Milan as a grey city only interested in business and work.

Paraphrasing a famous quote by Giorgio Squinzi, we might say that, if it is true that "there can be no work without art", it is equally true that "there can be no art without beauty".

Cultivating beauty is a very specific way of keeping alive our sense of belonging and of clearly realising the limitations of any kind of growth, which must inevitably take into account the safeguarding and protection of the environment and the people who inhabit it. This is the path that Mapei is following with such great success.

Malara's book provides a vital contribution to promoting this understanding, a sort of plea to make the Great Milan even more modern and efficient, without overlooking its beauty.

That is why it is to be hoped that attentive visitors to the Expo will be ready to say, along with everybody else living in the city on a day-to-day basis, that Milan is more than enough.



A prestigious hotel with individually designed suites overlooking Piazza Duomo

## TownHouse Duomo by Seven Stars hotel in Milan

**ABOVE.** A view of Piazza Duomo from the balcony of one of the suites.

**BELOW.** The building hosting the TownHouse Duomo by Seven Stars.

TownHouse Duomo by Seven Stars, a brand new boutique hotel in the heart of Milan, opened last February. Each of the fourteen suites in the hotel has been given a personal touch by a group of Italian architects.

The new jewel in the crown of the luxury Milan hotel scene belongs to the Alessandro

Rosso Group which, in 2007, first opened the Seven Stars Galleria hotel inside Vittorio Emanuele II Arcade, one of only eight hotels in the world to have been awarded seven stars. The building that houses TownHouse Duomo also sits in the heart of the most fashionable area of Milan, but unlike its sister hotel it has something unique to offer: the views are not over the inside of the Arcade since twelve of the suites have their own private balconies overlooking Piazza del Duomo with a view of the Duomo Cathedral. The entrance to the hotel is directly under the arcades. Apart from the rooms it also has a restaurant, private meeting and function rooms and a café which, in the evening, is transformed into an elegant lounge bar ("Duomo 21") with a terrace opening onto the Piazza. The hotel also hosts the World Expo Commissioners Club welcoming Expo 2015's Commissioners and delegations.





### A room with a view of the Duomo

Because it is in such a delicate position, the entire project was supervised by the City of Milan's Superintendence for Architectural Heritage. The operation is part of the plan promoted by Milan City Council to upgrade Vittorio Emanuele Arcade for the upcoming Expo 2015. For the occasion, the local council also wished to upgrade the upper floors of the Galleria and it was the Seven Stars' owner itself that financed an ongoing project to create a walkway along the roofs of the buildings to trace part of the passageways below running through Vittorio Emanuele Arcade. From here it will be possible to admire the skyline of the city; the new skyscrapers at Citylife and Porta Nuova district, the Branca and Rai towers, church bell towers and the Madonnina statue that sits atop the Duomo Cathedral. Each of the fourteen suites has its own unique design and the furnishings, which are often unique pieces, have been crafted by leading Italian manufacturers. Only the highest quality materials have been used for the finishes, while cutting-edge home-automation and lighting technology has been adopted and optimised right down to the finest detail to guarantee maximum comfort for guests. Each designer



was given free rein to express their ideas and the result is a showroom of design, where every suite becomes its own world in terms of materials, finishes, form and colour: from the suite with a four-poster bed to another dominated by the colour black, from lights and LED's around the bed to the warm tones of wooden furnishings and fittings. The design studios that have created the rooms are Jacopo della Fontana D2U, Agostino Danilo Reale, Giovanni Fiorito, Maison Mami Design by Luigi Ciccarelli, Massimiliano Mandalini, Massimo Magaldi, Matteo Fantoni Studio and Simone Micheli. The furnishings and fittings included works by famous companies

**ABOVE.** Each of the 14 suites has its own unique design devised by an Italian architect.

**BELOW.** Suite No. 10, the Swan Room, designed by the architect Simone Micheli, is characterised by the use of minimalist colours and the image of a large swan.





### Laying wooden floors

To bond the wooden floors in a herringbone pattern in the corridors leading to the suites, Mapei proposed ULTRA-BOND ECO P909 2K light coloured two-component, solvent-free polyurethane adhesive with very low emission level of volatile organic compounds (EMICODE EC1 R-certified), ideal for all types of wooden floors. Further interventions, such as the waterproofing of several substrates and the rebuilding of the small balconies, are currently on-going.

such as Artemide, Flos, Alcantara, Bisazza, Teuco, Villeroy Boch and many more.

### Mapei has also left its mark

Mapei took part in this prestigious project by supplying their expertise and own products for works carried out on areas inside

the hotel. The company was involved in the creation of suite no.10, known as the “Swan Room”, designed by the architect Simone Micheli, with whom Mapei has been working for a number of years.

Just as the name of the room would suggest, it is characterised by a large mosaic wall with the image of an elegant white swan. Because this was such a delicate design, highly skilled craftsmen were required for its creation.

Mapei Technical Services worked alongside the designer and proposed the use of ELASTORAPID adhesive in its white shade to bond the stone mosaic.

This is a two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive with no vertical slip and extended open time which is classified C2FTE S2 according to EN 12004 standard. ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology was used in its white shade to grout the joints. This product is indeed ideal for joints from 2 to 20 mm wide. Mapei also contributed to the installation of the wooden floorings in the communal corridors.

Mapei's intention once again was to play a role in the execution of a particularly innovative and prestigious project to promote the historic buildings of Milan. And the company played its part by adding cutting-edge technology as an example of excellence in the building industry.

### IN THE SPOTLIGHT ELASTORAPID

It is a two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive with extended open time and no vertical slip, class C2FTE S2 according to EN 12004 standards.

It is suitable for internal and external walls and floors, and is used to bond all types and sizes of ceramic tile (double-fired, single-fired, porcelain, clinker, terracotta, etc.), natural stone (marble, granite, etc.) and artificial materials moderately sensitive to moisture (corresponding to class B dimensional stability according to Mapei standards), which require the use of a quick-drying adhesive. It helps to earn **2 points** for the **LEED** (Leadership in Energy and Environmental Design) certification.



**BELOW.** The image of a large swan is reflected on its mosaic “twin” in the bathroom’s mirror.



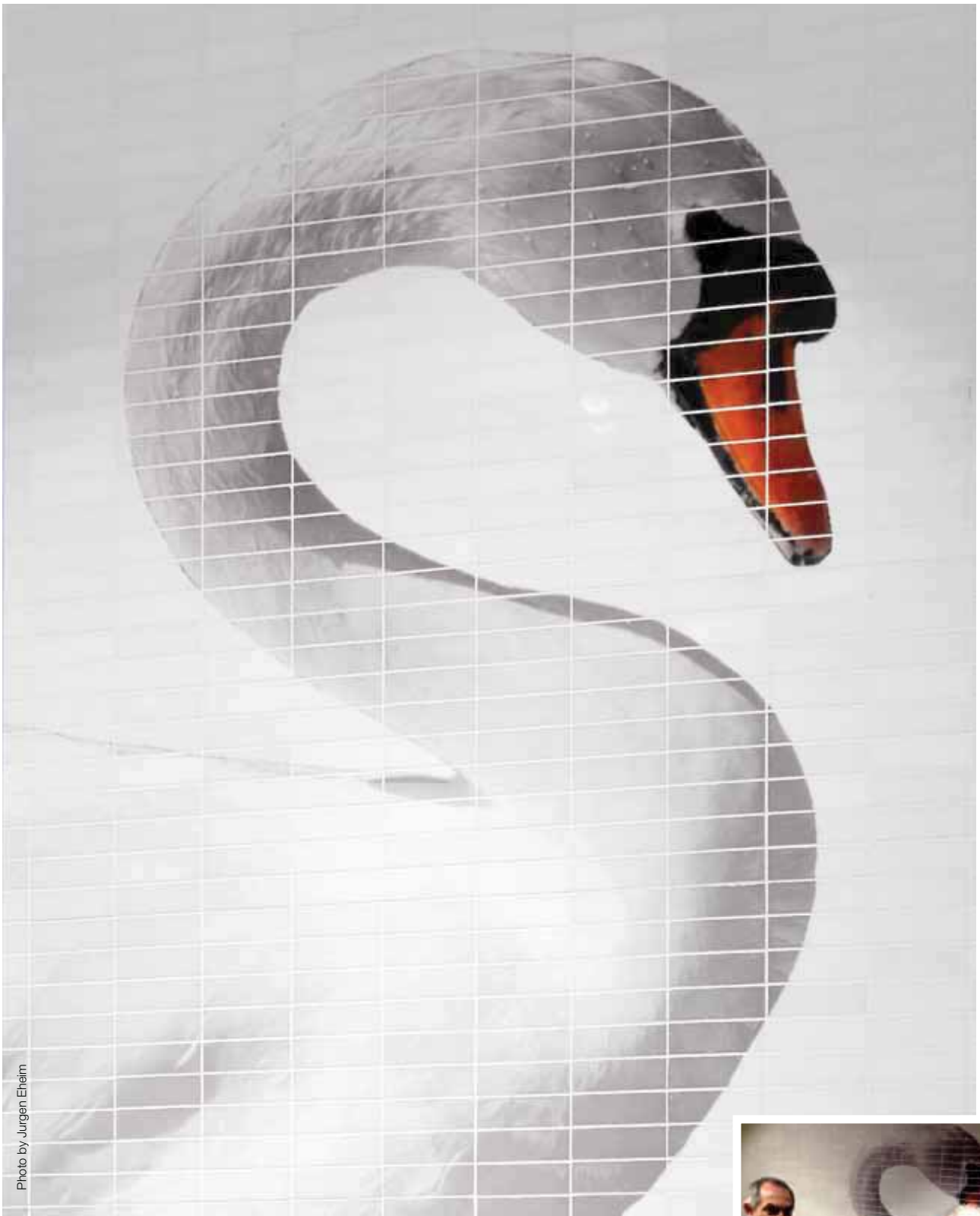


Photo by Jurgen Eheim

**Technical Data**

**TownHouse Duomo by Seven Stars,**  
Milan (Italy)

**Period of Construction:** 2014-2015

**Period of the Intervention:** 2014-2015

**Intervention by Mapei:** supplying products for laying mosaics in the no. 10 suite and wooden floors in the corridors

**Design:** Simone Micheli

**Client:** Seven Star Galleria Italia

**Laying Company:** Impresa Prada

**Works Direction:** Archt. Saverio

**Mapei Co-ordinators:** Igor Pellegrini, Antonio Salomone (Mapei SpA)

Photos by Gianni Dal Magro, Umberto Armiraglio, and Jurgen Eheim

**Mapei Products**

Laying mosaics: Elastorapid, Ultracolor Plus

Laying wooden floors: Ultrabond Eco P909 2K

For further information see [www.mapei.com](http://www.mapei.com)



**IN THE MAIN PICTURE.** The swan mosaic was bonded with ELASTORAPID adhesive and the joints were grouted with ULTRACOLOR PLUS.

**ABOVE.** Adriana Spazzoli with Donato Larizza of Postumia Srl (left) and the architect Simone Micheli (right).



The neo-classical palace has finally reopened its doors after two years of restoration work costing more than 26 million Euros

# The Royal Palace of Monza

Monday the 8<sup>th</sup> of September, 2014, saw the inauguration and reopening to the public of the Royal Palace in Monza after the long, difficult restoration work under the guidance of Nuova Villa Reale Monza SpA, a subsidiary company of Italiana Costruzioni SpA, together with Malegori Comm. Erminio Srl and Na. Gest. Global Service Srl. In Italy, the Infrastrutture Lombarde's contract for the design, restoration and administration of the Palace represented the first ever example of project financing for a public cultural body.

## History of the Palace

It was the Empress of Austria Maria Theresa who commissioned the construction between 1777 and 1780 of what was to be the summer residence for her son Archduke Ferdinand of Austria, Governor of the Lombardy Region. The site was chosen for its natural beauty, its proximity to Monza and its strategic position along the line between Milan and Vienna that passes right through the centre of the Palace. The architect Giuseppe Piermarini, who in the same period also designed the La Scala Theatre in Milan, designed a building with an U-shaped plan view in neo-classical style along the lines of traditional Lombardy villas, while taking inspiration from the imposing Royal Palace in Caserta.

Two lateral wings were added to the main central body of the Palace with rooms for the owners and their guests, along with two sections perpendicular to the main part for the servants' quarters, stables and tools, for a total of almost seven hundred rooms. In 1805, under the reign of Napoleon who wanted to create the largest walled garden in Europe around the Palace, it became the residence for his stepson Eugène de Beauharnais. After the fall of Napoleon the Palace was handed back to Austria and, when the Lombardy-Veneto region was annexed to the State of Piedmont, the Palace became the favourite holiday residence of king of Italy Humbert I of Savoy. He entrusted its administration to the architect Achille Majnoni to decorate and improve it according to the tastes and fashion of the time. In 1900 Humbert I was killed in Monza by Gaetano Bresci and the new King of Italy, Vittorio Emanuele III, decided not to use the Royal Palace any longer; it was closed and most of the furnishings were transferred



to the Quirinal Palace, which is the current official residence of the President of the Italian Republic. In 1934 a Royal Decree from Vittorio Emanuele III donated the Palace to the cities of Monza and Milan. Events following the Second World War led to the monument falling into a state of abandonment. Today, the Palace is jointly owned by Monza City Council, the Lombardy Region and the Italian State.

**The Palace finally reopens its doors**

From March 2012 almost one hundred workers and restoration experts took part in restoration work on the main central body, an area of almost 10,000 m<sup>2</sup>, which involved more than 40 rooms, 2,000 m<sup>2</sup> of wooden floors, 3,000 m<sup>2</sup> of roofing, 800 m<sup>2</sup> of stone surfaces and 1,200 m<sup>2</sup> of plant and service areas.

On the ground floor, after consolidating the structure, work was carried out on the walls and wooden components. This area, decorated with mosaics in Liberty style, was turned into a hospitality and dining area for visitors. It is also the main entrance to the Palace and has a bookshop and teaching and training areas. The first noble level of the Palace, with its main reception rooms (the Party Room, the Tapestry Room, the Throne Room and the Birds Rooms), the official family and dining rooms and the White Room, will be used for events, conventions and receptions. Restoration work in this area involved consolidating the cornices of the Party Room and a redevelopment of





the White Room.

The most important work was carried out on the second noble level, which was consolidated, cleaned and made safe, while the wall and ceiling frescoes were reintegrated and the vaults and wooden floors and features were restored. This area is intended to host a museum and large exhibitions. The rooms in the Belvedere were consolidated and made safe and then redecorated by the architect Michele De Lucchi. The Belvedere hosts the Triennale of Milan Museum of Design, which organises workshops and temporary and permanent exhibitions and displays in these areas. The main staircase and façade of the central body of the Palace have also been restored and brought back to their original splendour.

### Mapei also played its part

Mapei Technical Services collaborated with the companies involved in the restoration work, also because the subject of restoration is particularly important to Mapei. In fact, over the years, the Company has worked alongside designers and monuments and fine arts offices on the most delicate and complicated restoration works and projects. This work which also involved Mapei's Research & Development division

### IN THE SPOTLIGHT

#### MAPEI-ANTIQUE STRUTTURALE NHL

It is a pre-blended cement-free mortar in powder form for render and masonry work, made from natural hydraulic lime (NHL), Eco-Pozzolan, natural sand, special additives, micro-fibres and glass fibres. It is ideal for rendering old stone, brick, tuff and mixed walls, including ancient and decorative walls; for making "reinforced" mortar and installation joints for consolidating and renovating weak walls; for pointing between elements on walls; for load-bearing and buffer walls or for rebuilding old walls. It can contribute up to **4 points** to obtain the **LEED** certification.



to improve the products to meet the special requirements of this particular sites.

Mapei Technical Services had already carried out works inside the Palace to consolidate the wooden ceiling structure for the Belvedere Salon and the North Wing, where they proposed the use of MAPEWOOD SYSTEM, a specific system for restoring and strengthening wooden structures.

This time work was carried out on the ground floor of the main body of the Palace. The first step was to rebuild missing portions of the foundation walls, including the larger missing areas, using MAPE-ANTIQUE STRUTTURALE NHL high performance masonry mortar. This is a pre-blended, cement-free, fibre-reinforced lime and ECO-POZZOLAN-based mortar, particularly suitable for use as render or as a "reinforced" installation layer on stone, brick and tuff structures.

This product is classified as GP according to



**PHOTO 1.** Horizontal holes for the steel bars.

**PHOTO 2.** Positioning the plates.

**PHOTO 3.** The plates were treated with EPOJET resin.





4

## NOTES ON THE STRUCTURAL DESIGN OF THE INTERVENTION

The consolidation for the walls was verified in accordance with the “Guidelines for the Design, Execution and Testing of Strengthening Work on reinforced concrete, pre-compressed reinforced concrete and masonry using FRP”, paragraph 46 “Confining masonry columns”. Amongst the interventions that required the use of anti-expulsion tie-rods, the ones that concern the walls at the first noble level have been limited to the minimum, because the rooms at this level have been recently re-rendered and the walls have been redecorated. To reduce their impact to a minimum, a tailor-made solution was designed to avoid demolishing, removing or replacing the render. Small diameter tie-rods were used and they were anchored to small-end plates embedded in cavities cut into the existing render.

**Arch. Aymen Herzalla.** Studio Croci & Associati



5

**PHOTO 4.** MAPEGRID G 220 glass fibre mesh was placed on the masonry and MAPE-ANTIQUE STRUTTURALE NHL was sprayed thereupon.

**PHOTO 5.** MAPE-ANTIQUE F21 was used to consolidate the masonry vaults after grouting the cracks with MAPE-ANTIQUE ALLETTAMENTO.

EN 998-1 standard: “General purpose mortar for internal/external render”, guaranteed performance, Category CS IV. It is also classified as G according to EN 998-2 standard: “Guaranteed performance, general-purpose masonry mortar for external use on elements with structural requirements”, Class M 15, with compressive strength of > 15 N/mm<sup>2</sup>.

The masonry on the ground floor was then strengthened by drilling horizontal holes and inserting threaded steel bars fastened with steel plates on both sides. The holes drilled in the walls for the steel bars were filled with MAPE-ANTIQUE F21 cement-free, superfluid, salt-resistant, fillerized hydraulic binder made from lime and Eco-Pozzolan.

The steel plates were treated with EPOJET two-component epoxy resin and broadcast with sand to help the render applied later bond more strongly. MAPEGRID G 220 alkali-resistant, primed glass fibre mesh was then fastened in place to the wall leaving a small gap from the substrate. A layer of render around 4 to 5 cm thick made from

MAPE-ANTIQUE STRUTTURALE NHL was then sprayed over all the surfaces.

Mapei systems were also used to consolidate the masonry vaults which had particularly importance as architectural elements. Mapei Technical Services recommended grouting all the cracks and damaged and uneven areas in the wall with MAPE-ANTIQUE ALLETTAMENTO salt-resistant masonry mortar made from natural hydraulic lime and Eco-Pozzolan. During this phase, small rubber tubes were inserted into the walls to inject MAPE-ANTIQUE F21 where required to consolidate the walls. Since September 2004 the rooms in this grand neo-classical Palace have been opened to visitors. The Palace will also be used as a prestigious liaison and function centre for Expo 2015. But the work have not ended yet: restoration work on the courtyard and large, shell-shaped fountain has also begun. Then, if more funds are allocated to this project, the private theatre will be refurbished, along with the Orangery and the Appiani round-house.

### Technical Data

**Royal Palace of Monza**, Italy

**Designer:** Archt. Giuseppe Piermarini

**Period of Construction:** 1777-1780

**Period of the Intervention:** 2012-2014

**Intervention by Mapei:** supplying technical assistance and products for consolidation and structural strengthening work of the masonry piers and masonry walls in general

**Heads of Procedures:** Eng. Antonio Giulio Rognoni and Eng. Chiara Datta

**Project Manager:** Eng. Silvio Songini

**Works Supervisor:** Eng. Francesco Mazzeo

**Works Director:** Archt. Laura Lazzari

**Safety Co-ordinator:** Eng. Roberto Ferrari

**Main Contractor:** Restauro Nuova Villa Reale Monza S.c.a.r.l.

Temporary association: Italiana Costruzioni S.p.A (Association leader)  
Na. Gest. Global Service S.r.l. and Malegori Comm. Erminio S.r.l.

**Site Engineering Directors:** Eng. Giuseppe Colini, Eng. Carlo Leati

**Site Engineering Office:** M Partner S.r.l.

**Site Manager Surveyor:** Ugo Cappello

**Structural Design:** Studio Croci & Associati; Prof. Eng. Giorgio Croci; Archt. Aymen Herzalla

**Architectural/Restoration Design:** Eng. Massimo Mazzoleni, Archt. Maria Signorelli, Prof. Archt. Francesco Augelli, Giuseppina Suardi

**Safety Design:** Eng. Luciano Brusafarro

**Plant Systems Design:** Eng. Virginio Brocajoli

**Restoration Work:** Giulia Putaturo

**Regional Conservation:** Archt. Alberto Artioli, Archt. Annamaria Terafina

**Mapei Co-ordinators:** Davide Bandera, Dominica Carbotti, Flavio Filippone, Dario Casale, Massimo Seregni, and Andrea Peli, Mapei SpA (Italy)

### Mapei Products

**Strengthening and consolidating:** Epojjet, Mape-Antique Allettamento, Mape-Antique F21, Mape-Antique Strutturale NHL, Mapegrid G 220

**For further information see [www.mapei.it](http://www.mapei.it) and [www.mapei.com](http://www.mapei.com)**







**BONDING FRAGMENTS** and consolidating stucco works.

# Restoration of the Royal Palace in Monza

A word from the restoration expert Giulia Putaturo

Following a thorough campaign of diagnostic tests, indispensable to understand the nature and state of the building, we started to work on all the types of intervention: structural, plant services and decorative. The structural consolidation work was carried out on all the load-bearing walls on the ground floor using Mapei products (see the previous article). The intention was to contain the excessive compressive loads on the walls due to

the weight of the structure itself, the poor quality of the materials used and general deterioration and wear and tear. Beside, to encourage de-humidification, air chambers were created under the internal and external floors, along with a trench drain around the perimeter filled with gravel of various sizes.

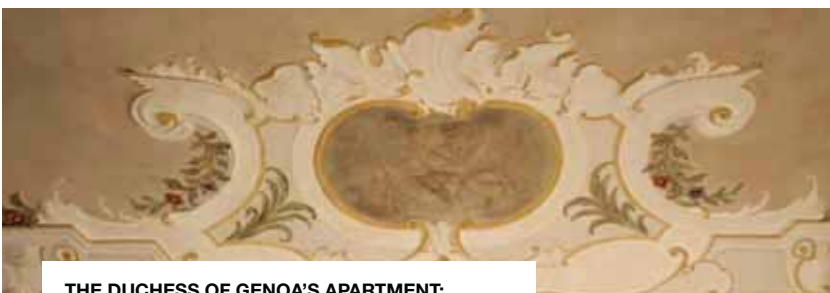
The most important work was carried out on the decorated internal walls and ceilings and on the wooden floors. These

were the main interventions: removing the salts, consolidating and re-bonding the stucco works by injecting ready-mixed mortar, removing the repainted areas, reconstructing the missing textured stucco work and bringing them back to their original colour, which had been identified through stratigraphic analysis, particularly in the Duchess of Genoa's apartment, in which the vaults had been heavily redecorated and were in an advanced state of deterioration.

The principle behind the intervention was to reconstruct. An important phase of the work, which is carried out between conservative restoration work (consolidating and cleaning) and purely aesthetic work, involved reconstructing the stucco decorations with silicone moulds. There are wooden decorations and painted, carved doors in almost all the rooms. Cleaning all these elements proved to be fundamental in bringing them back to their original splendour.

The solution adopted to carry out this phase of the work was to dry-clean everything by low-pressure (0.5 bars) micro-sandblasting using a superfine aggregate. Some of the most important decorative elements in the Royal Palace are the inlaid wooden floors, which were also in a terrible condition. The operations carried out were as follows: removal of all traces of dust and loose material, a first cleaning operation with demineralised water and 1% ammoniac solution, removal of all the loose inlays, reconstructing and repositioning the missing decorative elements made from the same type of wood, grouting all the joints, application of an anti-woodworm treatment and application of the finishing products.

**THE DUCHESS OF GENOA'S APARTMENT:** a section of the vault during the cleaning operations.



**THE DUCHESS OF GENOA'S APARTMENT:** detail view of the vault after the restoration works.

**Giulia Putaturo.** Restorer



## **Mape-Antique line**

Designing the difference between being and **WELL-BEING**

To meet your projects' requirements, Mapei offers a complete range of products for restoring, repairing and rendering in an eco-sustainable way. Mape-Antique products contribute to the well-being of both existing and new constructions.



Product info



/mapeispa

Mapei and the designers:  
let's take a closer look together at [www.mapei.com](http://www.mapei.com)



TRADE FAIRS

# DOMOTEX 2015



# THE BEST Combination

From the 17<sup>th</sup> to the 20<sup>th</sup> of January Mapei's technology for laying resilient, textile and wooden floors was on display at Domotex and showed its ability to "combine" with the clients' expertise

Innovations, inspiration and sales: those are the words that best summarize Domotex 2015, the world's flagship trade fair for textile, resilient and wooden floor coverings which took place as usual in Hannover, Germany, from the 17<sup>th</sup> to the 20<sup>th</sup> of January, 2015.

Domotex 2015 was staged in a total of 12 halls, making it the world's largest display of textile, resilient and wooden floor coverings: 1,323 exhibitors from 63 different countries were on hand to demonstrate their creativity and skill, and over 85% of these exhibitors came from abroad.

This year's edition attracted some 40,000 visitors from 100 different countries. The majority of visitors came from European countries. A significant upswing was noted in attendance from the Middle East and South, East and Central Asia.

Total attendance was thus slightly higher than for the most recent comparable Domotex in 2013 and this year's Domotex



**"THE BEST COMBINATION"**  
was Mapei's key claim at Domotex 2015.



**ON THE SPOTLIGHT AT DOMOTEX:** the most advanced systems for laying resilient, textile and wooden floors.

## The winning synergy

"The Best Combination" to construct unique quality all around the world. "The best combination", the winning synergy, is the one that exists between Mapei and installers, designers, contractors, architects and all those from around the world that choose Mapei to get the best results in the building sector.

A key claim that also highlights how Mapei owes its international leadership in the sectors of adhesives and complementary products for installing all types of floor and wall coverings to its unrivalled know-how. Mapei is a combination of a multitude of values: specialisation in the building world, internationalisation, research and development of increasingly technologically-advanced products, tailor-made service and support for the clientele, teamwork, concern for the health and safety of all those who use Mapei products and special care for human resources. Foundation stones that support the success of the Company and that were highlighted at Domotex 2015 at Stand A28, in Hall 7 of the Deutsche Messe fairground.

At the centre of the most important international trade fair dedicated to textile, resilient and wooden floorings, the "World of Mapei" was an exhibition area where visitors was able to fully appreciate a display of product systems that have been designed and developed to meet all the requirements of professionals from the building industry.

Beside showing international building projects and the most technologically-advanced products currently on offer from the Company, the stand, characterized by Carlo Stanga's illustrations, was designed to be a meeting place for all those operating in the sector, from manufacturers to designers and installers, right down to the end users.

visitors were also highly qualified, with approximately 90% reporting they either were buyers or involved in their companies' purchasing decisions. A rise in attendance was also noted for architects, interior designers and contract business professionals.

Following its successful debut last year, the Innovations@DOMOTEX showcase was a great success again in 2015. One of the special highlights consisted of the Innovations@DOMOTEX areas, designed as a compact and clearly laid-out showcase for 70 outstanding innovations in textile and resilient floor coverings, wooden and laminate flooring, plus contemporary handcrafted carpets and rugs. This event saw Mapei playing a key role, as we will show later on in this article.

Also in great demand were the Guided Tours, with architectural and interior design experts presenting a selection of innovations.

**THE BEST  
COMBINATION**  
OUR PRODUCTS  
& YOUR EXPERTISE

TRADE FAIRS

# DOMOTEX 2015



**MAPEI PRODUCTS** comply with the requirements of various international systems evaluating eco-sustainability.

## Sustainable, powerful, winning

One of the key concepts highlighted at Domotex was Mapei's constant commitment to develop and design products that are safe for the human being and the environment. Numerous Mapei products are certified EMICODE EC1 (very low emission level of volatile organic compounds) by GEV and comply with the requirements of various international systems used to evaluate eco-sustainability.

The stars of the images used for the Mapei campaign used as a support for the "Best Combination" concept are real people who provide direct, emotionally genuine testimonials of the increasingly close relationship and success between the Company and its numerous clients.

From amongst the 46 contestants in the "Applications and Installations" category of the Innovations@Domotex 2015 competition, the jury awarded Mapei three prizes; two for the products ULTRABOND ECO S968 1K and ULTRABOND ECO V4 SP FIBER and one for the special container MAPE-BOX.

## Complete systems for all your needs

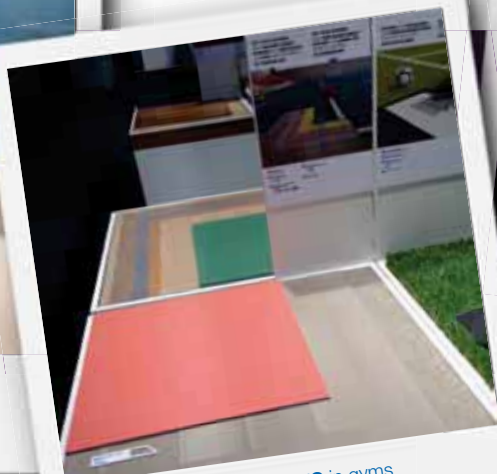
At Domotex Mapei exhibited all its complete systems, guaranteed over the years with the ability to solve all types of problem encountered on site.

They include **resin flooring systems for playing fields**, primers, adhesives and finishing products for the **wood bonding systems** with the **soundproofing system for installing wooden floors**; from thixotropic **self-levelling and smoothing systems** with very low emission level of volatile organic compounds (VOC), to **systems for preparing screeds** that remain durable over the years; and from **primers and adhesive systems for bonding resilients and textiles**, to a special **system for installing synthetic grass** playing surfaces.

**THE BEST  
COMBINATION**  
OUR PRODUCTS  
& YOUR EXPERTISE



AMONG THE FAST TRACK READY PRODUCTS, ULTRAPLAN FAST TRACK self-levelling compound was in the spotlight.



SYSTEMS FOR LAYING PVC in gyms and sport facilities.



ECO-SUSTAINABLE SYSTEMS for laying linoleum floorings.

## FastTrack Ready Technology

Also showcased at Domotex was FastTrack Ready technology, developed exclusively by Mapei to reduce the time and number of operations to complete installation of floor and wall coverings. Depending on specific site requirements and

the type of material to be installed, Mapei offers a wide range of FastTrack Ready products. At Domotex, amongst the products that allow resilient floorings to be installed in just a few hours, the spotlight was on PLANIPREP FAST TRACK, ULTRAPLAN FAST TRACK, MAPECONTACT RELEASE and ULTRABOND ECO FAST TRACK.

**DIE BESTE KOMBINATION**  
UNSERE PRODUKTE & IHRE KOMPETENZ

**FastTrack System**  
Ready

NEW!

„NUR 7 STUNDEN  
ZUR RENOVIERUNG  
ELASTISCHER  
BELÄGE!“

„ONLY 7 HOURS  
TO RESTORE  
A RESILIENT  
FLOOR!“



**THE BEST COMBINATION**  
OUR PRODUCTS & YOUR EXPERTISE

FastTrack System

**DIE BESTE KOMBINATION**  
UNSERE PRODUKTE & IHRE KOMPETENZ

ULTRABOND®  
**ECO 550**

NEW!

“KLEBT  
LINOLEUM  
SCHNELL  
UND SICHER.“

„BONDS LINOLEUM  
FAST AND SAFE.“



**THE BEST COMBINATION**  
OUR PRODUCTS & YOUR EXPERTISE

TEIL EINES  
KOMPLETTSYSTEMS  
MIT "BLAUER ENGEL"  
ZERTIFIZIERUNG



TRADE FAIRS

# DOMOTEX 2015



## New adhesives guaranteed over the years

Mapei adhesives for wood allow for eco-sustainable installation of wooden floors; indeed, highlighted at Domotex for this type of application was the new, one-component high performance adhesive ULTRABOND ECO S968 1K that complies with EN 14293 standard. It is suitable for any type and format

of wooden flooring on any type of substrate, including heated floors.

With good workability and developed to bond any size of wooden flooring perfectly and very quickly, ULTRABOND ECO S948 1K is also ideal for all types of layered flooring and solid wood.

There were also numerous new products for rapid, eco-sustainable bonding of resilient floorings, such as:

- PLANIPREP FAST TRACK ultra rapid-drying fine textured

**DIE BESTE KOMBINATION**  
UNSERE PRODUKTE & IHRE KOMPETENZ

## Ultrabond Eco S968 1K

**NEW!**

„KLEBT PERFEKT  
JEDES PARKETT!“

„IT PERFECTLY BONDS  
EVERY KIND OF  
WOODEN FLOORS!“

**THE BEST COMBINATION**  
OUR PRODUCTS & YOUR EXPERTISE

**DIE BESTE KOMBINATION**  
UNSERE PRODUKTE & IHRE KOMPETENZ

## ULTRABOND ECO VS90 Plus

**NEW!**

„SUPER  
KLEBEKRAFT IN  
DER EINSTIEGS-  
KLASSE FÜR TEXTILE  
UND ELASTISCHE  
BELÄGE.“

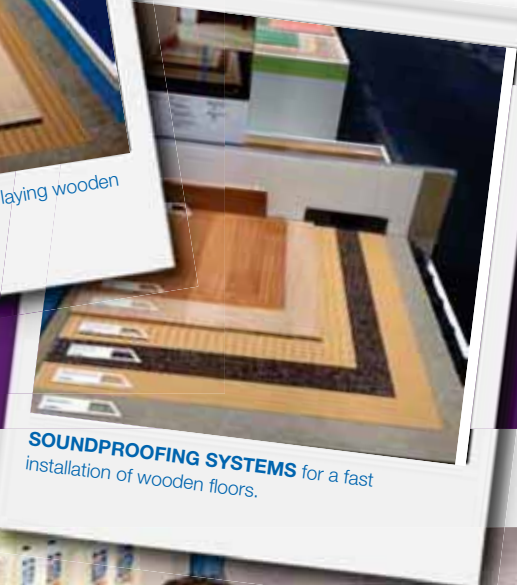
„SUPER ENTRY-LEVEL  
CLASS ADHESIVE  
FOR TEXTILE  
AND RESILIENT  
FLOORS.“

**THE BEST COMBINATION**  
OUR PRODUCTS & YOUR EXPERTISE



thixotropic cementitious skimming compound for new and existing internal substrates to make them suitable for bonding all types of floor coverings very quickly;

- ULTRAPLAN FAST TRACK self-levelling smoothing compound for layers from 1 to 10 mm thick;
- ULTRABOND ECO FAST TRACK high performance, rapid-setting adhesive in water dispersion for repairing resilient floorings and for bonding skirtings, covings and profiles;
- ULTRABOND ECO 550 strong, rapid-setting adhesive with very low emission level of VOC for all types of linoleum;



- ULTRABOND ECO VS 90 PLUS multi-purpose adhesive in water dispersion for bonding resilient floorings;
- PLANITEX D15 self-levelling smoothing compound with excellent flow and drying characteristics and a very low emission level of VOC, particularly suitable for use in large buildings. This product was especially developed for the German market.

Even though it is not a new product this year, a special men-

tion must go to the award-winning ULTRABOND ECO V4 SP FIBER, a multi-purpose, fibre-reinforced adhesive in water dispersion with extended open time and very low emission level of VOC for resilient floorings.

The next Domotex edition will take place from 16<sup>th</sup> to 19<sup>th</sup> January 2016.

**THE BEST  
COMBINATION**  
OUR PRODUCTS  
& YOUR EXPERTISE

TRADE FAIRS

# BAU 2015



**IN FIERA**, numerose sono state le dimostrazioni dei prodotti.



**LO STAND MAPEI** è stato un punto di incontro per gli operatori del settore.



# WITH **Mapei** INTO THE FUTURE OF THE BUILDING INDUSTRY

If there are indeed signs of a revival in the building industry then they are coming from BAU. This year's edition of Europe's leading trade fair for architecture, materials and systems took place in Munich (Germany), from the 19<sup>th</sup> to the 24<sup>th</sup> of January, 2015.

This two-yearly special event is devoted to displaying innovations and new developments for residential and commercial construction and interior design and new buildings. It works as an important business, contacts and information platform for all professionals involved in building design, construction and management.

This year's BAU has broken through the 250,000-visitor barrier for the first time in its 50-year history. The six days of this fair attracted 251,200 visitors, over 16,000 more than in 2013. The number of visitors from Germany rose of course, but most of the increase in overall numbers is due to visitors from outside Germany. Around 72,000 people came from abroad: 20% more than last time. The key themes at BAU 2015 (Intelligent Urbanization – Energy and Resource-efficiency – Buildings and Users) were not only reflected at the booths of the exhibitors, they were also explored and illustrated in a number of special shows.

BAU gave a powerful demonstration of what it is well known for: packed halls, spectacular booth designs, professional talks at the exhibitors' booths and above all visitors from all over the world. It was quite a challenge for the 2015 exhibitors from 42 countries.

Mapei's presence at BAU aimed at taking on this challenge and focused on some of the trade fair's main subjects: product and system solutions to increase energy- and resource-efficiency; materials and technologies reducing the pressure on the environment and resources; how to design the cities of the future for living and working; comfort in the home.

## **The future is already here**

"The Best Combination" to enter into the future of the building industry with Mapei: this was the key claim that marked Mapei's presence at BAU 2015, just like at Domotex.

The best combination, the winning synergy, is the one that exists between Mapei and installers, designers, contractors, architects and all those from around the world that choose Mapei to get the best results in the building world. With its undisputed international leadership in the sectors of adhesives and complementary products for installing all types of floor and wall coverings, Mapei is already a part of the future. A future based on solid, antique roots and sound principles: specialisation in the building world, internationalisation, research and development into increasingly technologically-advanced products, tailor-made service and support for our customers, teamwork, commitment to the health and safety of installers and users, and a special attention paid to human resources. Foundation stones that support the success of the Company and that were highlighted on stand 502 in Hall B6 at BAU 2015.

## **Sustainability as a priority**

Numerous Mapei products are certified EMICODE EC1 (very low emission level of volatile organic compounds) and comply with the requirements of various international systems used to evaluate eco-sustainability. The Company has been investing in eco-sustainable research for more than 30 years, committing considerable resources into the development of innovative solutions that respect the environment. Mapei products, result of the commitment of the Group's 18 R&D laboratories, are formulated using innovative, recycled and ultra-light raw materials with a very low emission level of volatile organic compounds (VOC) and developed to reduce energy consumption.

TRADE FAIRS

# BAU 2015

## Preparing and leveling off substrates

For this sector at BAU 2015, the new PLANITEX D15 was also on display, a self-levelling compound with excellent flowing and drying time and very low emission level of volatile organic compounds. This product was especially developed for the German market and is particularly suitable for use in large buildings.

## Concrete repair

Amongst the products showcased at BAU 2015 for repairing concrete is PLANITOP SMOOTH & REPAIR R4 fibre-reinforced, rapid-setting thixotropic cementitious mortar for structural repairs and smoothing concrete. It is particularly recommended for repairing internal and external horizontal and vertical concrete surfaces, and suitable for structures exposed to the open air and in permanent contact with water.

## Renovating masonry buildings

At BAU 2015 Mapei also displayed products from the MAPE-ANTIQUE line, cement-free products made from Eco-Pozzolan, particularly recommended for the structure of historic buildings, but ideal also for new buildings. Highlighted from this product line was MAPE-ANTIQUE ALLETTAMENTO salt-resistant masonry mortar made from natural hydraulic lime



IN THE SPOTLIGHT systems for concrete repairs.



and Eco-Pozzolan for installation layers and pointing on “natural finish” masonry.

## Waterproofing is now turbo-charged

On display at BAU 2015 was the new two-component, elastic, cementitious waterproofing product MAPELASTIC TURBO, ideal for use in all seasons including at low temperatures down to  $-5^{\circ}\text{C}$ . Its strong point is rapidity of application, guaranteed by Fast Track Ready technology: under normal conditions, it takes just 4 hours to tile the surface.

Also highlighted was MAPELASTIC SMART, the two-component, high-flexibility cementitious mortar (with crack-bridging capacity  $> 2\text{ mm}$ ) applied by trowel or roller for waterproofing balconies, terraces, bathrooms and swimming pools.

## Grout Selection: the evolution of colour

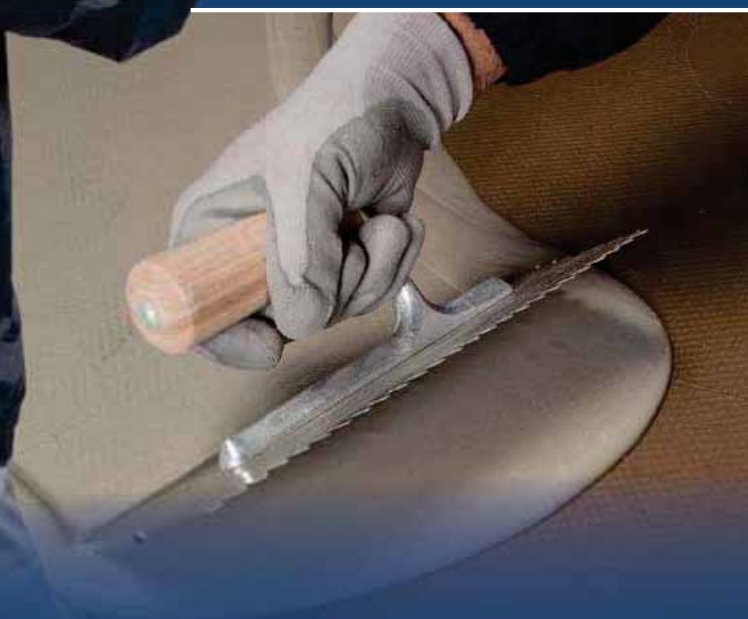
One of the Mapei offers at BAU 2015 was Grout Selection, the new colour chart for grouts. A choice of 14 colours, 7 new and 7 from the existing colour range, to characterise the texture of any ceramic, terracotta, stone material or mosaic wall or floor covering. The high aesthetic value of Mapei coloured grouts make them particularly suitable for grouting “natural effect” and “wood effect” tiles, the latest trend in ceramic tiling. The new selection of colours is available for grouting with the cementitious ULTRACOLOR PLUS version and the epoxy KERAPOXY DESIGN version.

# Mapelastic Turbo

“RAPID WATERPROOFING EVEN AT LOW TEMPERATURES!”



**Fast Track**  
Ready



Product info



facebook/mapeipa

It is available at Mapei official distributors



ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING



TRADE FAIRS

**BAU  
2015**

## Bonding and protecting wooden floors

Mapei presented various options at BAU 2015 to provide a successful solution to all your site needs. They include the new product for bonding wood ULTRABOND ECO S940 1K, a one-component, silitated polymer-based adhesive ideal for all types of pre-finished plywood and medium-sized planks of solid wood up to 9 cm wide.

Also present at BAU 2015 was the ULTRACOAT range of protection systems for wooden floors made up of water-based products with very low emission level of VOC. These products are formulated to make rapid, high-protection and ultra high-protection systems for wood which protect even floors subjected to a very high level of traffic.

## Rapid, eco-sustainable laying of resilient floors

For this sector at Bau 2015 Mapei presented ULTRAPLAN FAST TRACK, the ultra fast-drying self-levelling compound for layers from 1 to 10 mm thick and ULTRABOND ECO 550 hard, fast-set adhesive with very low emission level of volatile organic compounds, ideal for all types of linoleum.

The spotlight was also on ULTRABOND ECO VS 90 PLUS multi-purpose adhesive in water dispersion for bonding resilient materials and ULTRABOND ECO V4 SP FIBER multi-purpose, adhesive in water dispersion with extended open time and very low emission level of VOC, improved by adding fibres, for resilient floorings.

## Lightweight, tough and eco-sustainable: the most advanced products for bonding ceramic

Amongst the new products at BAU 2015, there was the new ULTRALITE FLEX, a lightweight yet tough adhesive for bonding all types of ceramic (from mosaic to thin porcelain, to dimensionally stable stone material), on any type of traditional substrate, by overlaying and even on heated floors and plasterboard. ULTRALITE FLEX has 55% more yield compared with other adhesives of the same class and one 15 kg bag is sufficient to bond around the same m<sup>2</sup> of tiles as a 25 kg bag of traditional adhesive.

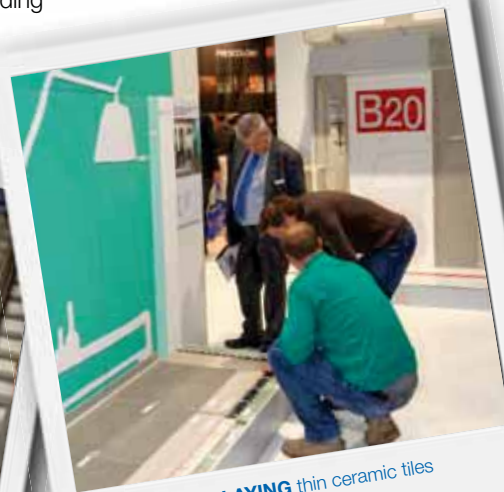
From the same family and with performance characteristics just as exceptional there is ULTRALITE S1 QUICK, an one-component, high-performance, deformable, lightweight, rapid-setting and hydrating cementitious adhesive with no vertical slip, good trowelability, high wetting capacity and extremely high yield, for ceramic tiles, stone material and thin porcelain tiles. With the same characteristics, but with a more extended open time, ULTRALITE S2 QUICK was also showcased at BAU 2015.

## Fast Track Ready Technology

Apart from cost management, nowadays time also plays a very important role in building operations. Showcased at BAU 2015 was FastTrack Ready technology, developed by Mapei to accelerate every phase of building work. Depending on specific site requirements and the type of material to be installed, Mapei offers a wide range of FastTrack Ready products. Showcased at Bau 2015 were PLANIPREP FAST TRACK, ULTRAPLAN FAST TRACK, ULTRALITE S1 QUICK, MAPECONTACT RELEASE and ULTRABOND ECO FAST TRACK.



**IN THE SPOTLIGHT** systems for laying resin and cementitious floorings.



**SYSTEMS FOR LAYING** thin ceramic tiles on low-thickness heated substrates.

# Ultralite Flex

Lightweight and tough.

“IT HELPS SAVING TIME AND MATERIAL DURING INSTALLATION!”



MAPEI's lightweight product

**15 kg**  
= 25 kg

**MAXI RESA YIELD**

**+55%**

RESA YIELD INCREASED BY 55% COMPARED WITH STANDARD MAPEI

RISPETTO AI COMPLESSIVI COSTI DI INSTALLAZIONE



Product info



facebook/mapeispa

It is available at Mapei official distributors



ADHESIVES - SEALANTS - CHEMICAL PRODUCTS FOR BUILDING





# Mapei GmbH

Mapei Group's main German subsidiary aims at achieving a more broad position on the market

Already the look back was peppy: the general state of affairs last year was better than it has ever been since 1998. Backed up by a policy of low interest rates, a healthy job market and a rising net emigration rate! Dr. Uwe Gruber, General manager of Mapei GmbH, the Mapei Group's German subsidiary, looks back over 2014 with great pleasure and casts an eye at the indicators for the current state of the building industry in Germany: "The sector has achieved its best results for the last 20 years. The number of apartments constructed should rise by 44% from 2012-2016. There will probably be a slight slowing down in this trend in 2015, because the general situation calls for greater prudence compared to last year, but all things considered the outlook is still positive." So what did last year bring for Mapei? "Extremely positive growth", according to Dr. Uwe Gruber. The Mapei Group grew by 4.3% in 2013 (by almost 5% in 2014). Compared to 2012, sales of

products for ceramic and stone materials rose by 1.5%. "38.5% of our turnover comes from sales of products for ceramics", so Dr. Gruber added. Mapei GmbH is a real pillar of the Group. "Ceramics have really developed over the last few years and this helps us. We are counting on increasing our turnover and sales in 2014. The Mapei Group's expansion strategy has also been taken up in Germany. We really boomed in 2014 and we are clearly growing at much faster rates than the market in general. Over the last five years Mapei has grown by over 70% in Germany. Our aim is to exceed the target of a turnover of 100 million Euros".

## Winning market share and taking advantage of opportunities for growth

The German company based in Erlenbach plans to conquer the market not through a prices policy, but rather by offering intelligent solutions and good as-

sistance to people working in the sector. This calls for investments, but Mapei GmbH has the backing of the Squinzi family that owns the Group.

The Group is looking at long-term opportunities for growth adopting the following "strategic plan":

- Incorporating new product lines
- Cross-selling based on the motto "from the cellars to the roof"
- Interacting more closely with key "decision-makers".

The aim is to convince people working in the industry to rely on just one supplier for complete systems of chemical products for the building industry. "We offer everything at the same time", so Dr. Gruber points out referring to all Mapei's different ranges of products. "Our customers are also constantly extending what they have to offer, and we can meet all their needs through the Mapei brand. We can offer our services as a supplier of complete systems."



» “OUR AIM IS TO BE THE TRUSTED BRAND FOR RETAILERS AND INSTALLERS” CLAIMS DR. UWE GRUBER, GENERAL MANAGER OF MAPEI GMBH



**IN THE FACING PAGE.**

Mapei GmbH's manufacturing plant in Weferlingen, in Northern Germany. Photo by Quarzwerke.

**LEFT.** Mapei GmbH's headquarters in Erlenbach, in Southern Germany.

**ABOVE.** Mapei GmbH's offices in Bottrop, in Western Germany.

**Die beste Kombination**

All this could clearly be seen at BAU. Under the motto “Die Welt von Mapei” (The World of Mapei), the world's leading company in the chemical products for the building industry sector decided to spotlight its solutions for installing ceramics and natural stone and for laying resilient, textile and wooden floors, as well as its admixtures for concrete and

waterproofing solutions for roofs. A new communications campaign under the slogan “Die beste Kombination” (the best combination) was launched to further strengthen the Mapei brand. “The main factor behind the success of a brand is the customer's emotional attachment that comes from reliability, affinity and trust”, so Mapei GmbH's Sales Manager of the product line for

textile and resilient floors, Michael Heim, pointed out. “All these factors are at the focus of our new campaign that was set under way at the beginning of 2015 and will be showcasing all our products.”

The new Mapei stand also drew attention to the sustainability of Mapei solutions and the company's various systems or, in other words, products that combine together perfectly: from primers and smoothing compounds to adhesives and grouts. Great attention is focused on such issues as safety, sustainability and quality of life indoors. The kind of attention displayed by Mapei is clearly demonstrated by the wide range of company products that have been awarded EMICODE certification, as well as a total of over 150 products that help eco-sustainable buildings attain LEED certification.

Mapei is looking to the future with some clear goals in mind: an even wider range of products, a new system of displays for distributors, and more carefully designated ranges of products aimed at providing a complete package.

**BELOW.** The entire management team of Mapei GmbH were in attendance at BAU and travelled on the Bayern Munich football team bus: Walter Mauer, the Head of Technical Assistance for the range of products for ceramics and stone material; Günther Hermann, Technical Marketing Manager for the range of products for resilient and textile floors; Michael Heim, the Sales Manager for the same range, and the two General Managers, Dr. Uwe Gruber and Heinrich Meier.



We would like to thank the German magazine CARO for allowing us to borrow this article from its issue no. 1/2015.

# Evergreen Residence in Bonn



Eco-sustainable and reliable solutions for safely laying wooden and wooden-effect vinyl floors

The well known “Am alten Poststadion” district in Bonn was once home to one of Germany’s fastest cycling race tracks. Today a new retirement and care complex, with all the latest design features to meet the needs of the elderly, was constructed in a record time of just nine months.

The building encloses 66 apartments measuring 40-100 m<sup>2</sup>, specially designed for the elderly, and a state-of-the-art care unit with 70 one-bed and 5 two-bed rooms. The aim of the Evergreen Residence’s operators is to provide new homes that give the elderly the sense of well-being and comfort that they enjoy at home, while remaining in the familiar surroundings of their city. This is the reason why the complex’s high-quality interior design focuses on bright and friendly colours and homely floorings made of wood or LVT (luxury vinyl tiles) with natural wood-effect were chosen for the corridors, relax areas and care rooms.

### Efficient and systematic floor laying

To lay around 7,700 m<sup>2</sup> of wood and wood-effect floorings under considerable time pressure, the laying company opted for the highly eco-sustainable Mapei systems, ensuring the flooring’s durability despite the intense wheelchairs and nursing beds traffic.

At literally “turbo speed”, EPORIP TURBO two-component, quick-hardening polyester resin was used to seal the cracked screeds which had to be covered with wooden floors. The floors required a moisture barrier to prevent the substrates’ residual humidity content from damaging the wooden floors.





ECO PRIM PU 1K TURBO was used to solve this problem. This one-component, solvent-free, moisture curing, rapid-drying polyurethane primer with a very low emission level of volatile organic compounds (VOC) is ideal for consolidating and waterproofing cementitious screeds. It hardens due to the humidity present in the air and in the screeds, thus waterproofing and consolidating the substrates.

As for the substrates of the wood-effect vinyl floorings, ECO PRIM T was instead chosen for priming the surfaces. This product is a solvent-free acrylic primer with a very low emission level of VOC for absorbent and non-absorbent substrates.

Despite the time pressure, it was important to ensure the substrates remained level and highly durable after laying the floor coverings. This was achieved using PLANIPATCH fine-grained, ultra quick-drying, thixotropic cementitious smoothing compound. The

product, which is ideal for thicknesses from 0 to 10 mm, was used to level out the substrates.

ULTRAPLAN ECO self-levelling, ultra quick-hardening smoothing compound with a very low emission level of VOC was applied on the substrates of the wood-effect vinyl floorings.

The multi-purpose adhesive ULTRABOND ECO V4 SP, already used in a number of other projects, also provided long-term reliability when bonding the wood-effect vinyl floorings in the Evergreen Residence. This acrylic adhesive in water dispersion with a long open time and very low emission level of VOC is easy to spread and has an excellent initial grab. Therefore it is ideal for laying rubber, PVC, vinyl, polyolefinic, linoleum and carpet flooring.

ULTRABOND ECO S945 1K one-component adhesive was chosen to bond the wooden floors in the apartments.

**IN THE FACING PAGE.** The Evergreen Residence encloses 66 apartments, specially designed for the elderly, and a state-of-the-art care unit with 70 one-bed and 5 two-bed rooms.

**IN THIS PAGE.** Wooden floors and wood-effect vinyl floors were laid in several common areas and bedrooms using ULTRABOND ECO S945 1K and ULTRABOND ECO V4 SP, respectively.

### IN THE SPOTLIGHT ECO PRIM PU 1K TURBO

It is an one-component polyurethane primer which hardens due to the humidity present in the surrounding air and in the screed. ECO PRIM PU 1K TURBO is characterised by its short set to light foot traffic period. It quickly loses tackiness, so that wooden floors may be laid after a very short time. It is used for surface consolidation and dust-repelling treatment on cementitious, anhydrite and heated substrates, as well as for waterproofing cementitious screeds with a high residual humidity content. It can contribute up to **3 points** to obtain the **LEED** certification.



**Technical Data**

**Evergreen Residence**, Bonn  
(Germany)

**Period of Construction:**  
2013-2014

**Period of the Intervention:**  
2013-2014

**Intervention by Mapei:**  
supplying products for preparing  
substrates and laying vinyl (LVT)  
and wooden floorings

**Design:** Huber Becker, Cologne  
(Germany)

**Client:** Huber Becker

**Contractor:** Conesta, Cologne

**Works Direction:** Conesta

**Mapei Distributor:** Jäger  
Ausbau, Dortmund (Germany)

**Mapei Co-ordinator:** Jens  
Bock, Mapei GmbH (Germany)

**Mapei Products**

Preparing and levelling the  
substrates: Eco Prim T, Eco  
Prim PU 1K Turbo, Eporip Turbo,  
Planipatch, Ultraplan Eco  
Laying vinyl floorings: Ultrabond  
Eco V4 SP

Laying wooden floorings:  
Ultrabond Eco S945 1K (N.B. the  
product has been superseded by  
ULTRABOND ECO S940 1K and  
ULTRABOND ECO S948 1K)

**For further information  
see [www.mapei.com](http://www.mapei.com)  
and [www.mapei.de](http://www.mapei.de)**



**IN THESE PHOTOS.** Vinyl  
floors with wood-effect were  
also laid in the corridors  
and relax areas using  
ULTRABOND ECO V4 SP.

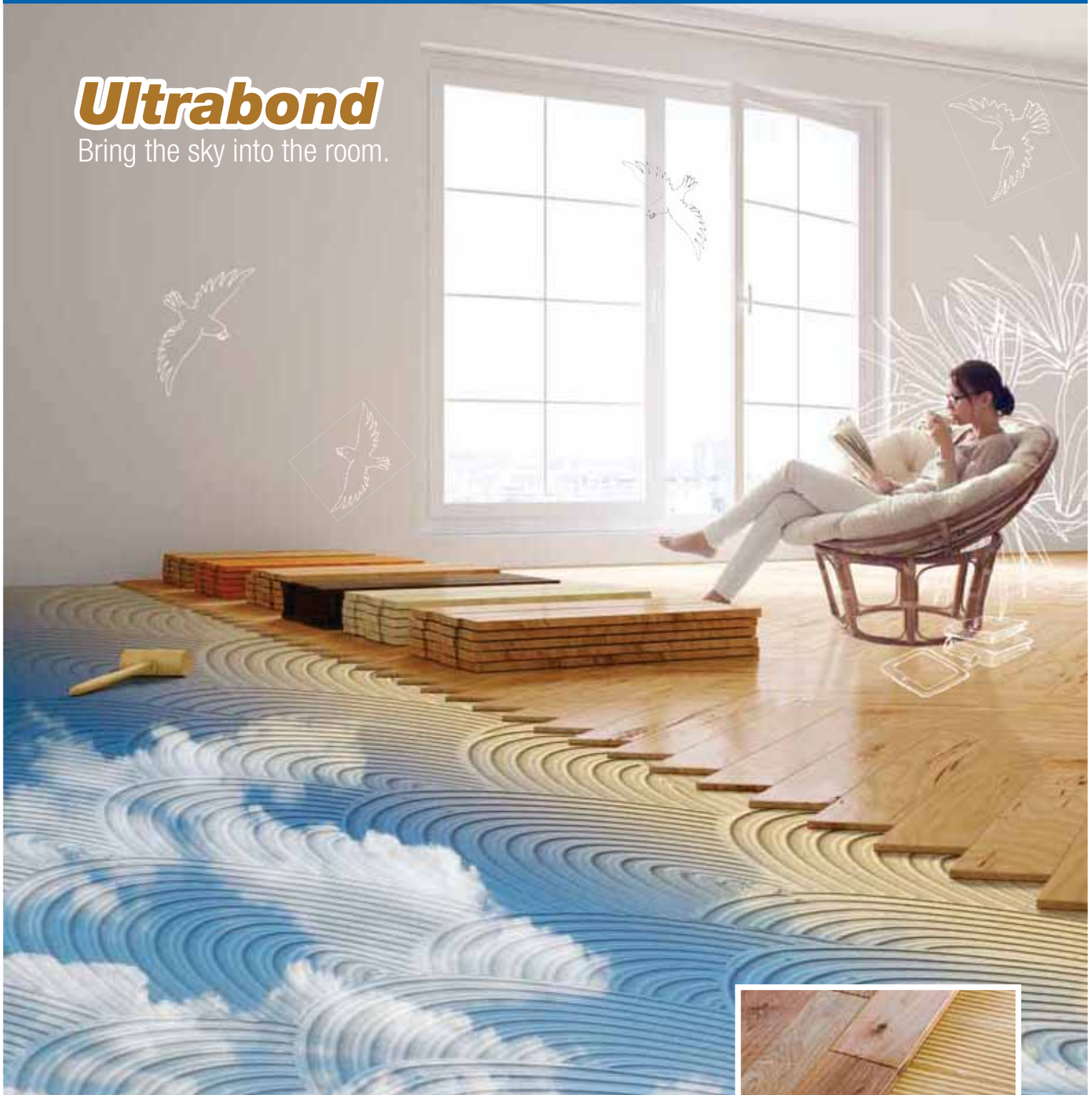


This product was lately superseded by ULTRABOND ECO S940 1K and ULTRABOND ECO S948 1K one-component solvent-free, sililated polymer-based adhesives with very low emission level of volatile organic compounds.

The use of eco-sustainable and high-performance Mapei products ensured that the work was completed in time for the Evergreen Residence to open its doors on schedule. Today the residence's guests can enjoy high-quality cares in high-comfort spaces within a complex that well matches their beautiful city.

# Ultrabond

Bring the sky into the room.



**Ultrabond Line**,  
for a perfect bond to guarantee **hold**,  
**quality** and **respect for the environment**  
with **every type of parquet**.



Product info



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The eco-sustainable qualities of Mapei products for bonding resilient flooring on show at the first ever theme park in Italy dedicated to motor sports



# Driver Indoor Park in Como





Inaugurated in March 2014, the Driver Indoor Park in Como is a covered theme park extending over an area of 8,000 m<sup>2</sup> entirely dedicated to the world of motor sports.

Designed by the internationally renowned designer Ennio Trezza, the Driver Indoor Park is the first ever theme park with no entrance fee where you pay only for the services you actually use.

This innovative structure is open all year round and combines various activities: a dining area (with a pizzeria, an American steak house, a pub and a lounge bar) and entertainment, with go-karts, a play area for children and driving simulators. And for companies there is also a multi-functional wing for conventions and meetings.

To put it briefly, Driver Indoor Park is a tribute to a conception of motor sports dedicated to various target audiences, with a typically American philosophy of a spectacular project on a large scale with prices to suit everybody's pocket.

Apart from a go-kart track, there is an authentic F1 car - the Jordan driven by Barrichello in 1994 - that has been turned into a driving simulator. There is also room for small children with the "Kid Park", an area extending over more than one thousand square metres divided into play and educational routes. For children between 4 and 11 there is the Play Zone (one of the pay-as-you-go services), and in another area there is a track dedicated to learning road sense at the Driver School. It is in this very area that children can play at driving on a road circuit, with brightly coloured soft-top Fiat 500 car to learn basic driving skills.

### Bonding products with the upmost respect for man and the environment

Resilient floor coverings by Virag Srl have been installed in numerous areas of the Park using the most technically-advanced bonding systems by Mapei, all with full respect for man and the environment. In the children's play area, for example, the surfaces were initially treated with ECO PRIM T solvent-free acrylic primer in water dispersion with very low emission of volatile organic compounds (VOC), and then smoothed over with ULTRAPLAN ECO ultra-fast hardening self-levelling, smoothing compound for layers from 1 to 20 mm thick, with very low emission level of VOC.

ADESILEX G20 two-component, low viscosity epoxy-polyurethane adhesive was then used to bond the heterogeneous PVC. After hardening (around 24 hours), solely by chemical reaction and without shrinkage, ADESILEX G20 becomes elastic, resistant to water, humidity, heat, atmospheric agents, with high characteristics of adhesion on nearly all commonly used construction materials.

The same procedure, but with a different adhesive, was used for the changing rooms, with non-slip heterogeneous PVC bonded with ULTRABOND ECO V4 SP all-purpose adhesive in water dispersion with extended open time and very low emission level of VOC for resilient floorings.

There is a large crash helmet to welcome visitors to the Driver Indoor Park, a clear indication of how safety forms the basis of the design concept. From here you can follow

### IN THE SPOTLIGHT ULTRABOND ECO V4 SP

It is a solvent-free, synthetic polymer-based single-coat adhesive in water dispersion. ULTRABOND ECO V4 SP has an especially extended open time suitable for the installation of resilient floor coverings. It can be used on non-absorbent surfaces as an alternative to polychloroprene contact or epoxy-polyurethane adhesives. Ultrabond Eco V4 SP is easy to spread and has an excellent initial grab. After hardening, the Ultrabond Eco V4 SP film is flexible and strong and can take heavy foot traffic and wheeled chairs. It features very low emission of volatile organic compounds (EMICODE EC1) and can contribute up to **4 points** to obtain the **LEED** certification.



**LEFT.** The Driver Indoor Park in Como is a covered theme park entirely dedicated to the world of motor sports.

**TOP OF THE PAGE.** In the bars and restaurants the resilient floors were bonded with ULTRABOND ECO V4 SP.

## PROJECTS LAYING RESILIENT FLOORINGS



**ABOVE.** In the children's play area, the floor substrates were treated with ECO PRIM T and smoothed over with ULTRAPLAN ECO, before bonding the PVC coverings with ADESILEX G20 two-component, low viscosity epoxy-polyurethane adhesive was then used to bond the heterogeneous PVC.

**LEFT.** In the changing rooms ULTRABOND ECO V4 SP was used to bond the PVC floorings.



### Technical Data

**Driver Indoor Park, Como (Italy)**

**Year of the Intervention:** 2013

**Intervention by Mapei:** supplying products for laying resilient floorings

**Design:** Ennio Trezza

**Laying Company:** Pavi System Srl

**Mapei Distributor:** Virag Srl

**Mapei Co-ordinators:** Angelo Nobili and Davide Ottolini, Mapei SpA (Italy)

### Mapei Products

Preparing the substrates: Eco

Prim T, Ultraplan Eco

Laying resilient floorings:

Adesilex G20, Ultrabond Eco V4 SP

**For further information see [www.mapei.it](http://www.mapei.it) and [www.mapei.com](http://www.mapei.com)**

various routes: food, entertainment, children; three different concepts to guarantee fun for everybody.

ULTRABOND ECO V4 SP was also used to bond the Virag LVT Evolution flooring in the entrance areas and in the bars and restaurants.

And then again in the driving simulators area – there are eight simulators in all to take part in breathtaking races; eight drivers on circuits that can be changed for each race, and a choice of different types of car, from the fun-packed 500 Abarth to more power-

ful prototypes, right up to Formula 3 and GT – and in the communal areas, the adhesive used to bond Matè vinyl fabric covering by Virag was ULTRABOND ECO V4 SP. This was the right product in the right place, because ULTRABOND ECO V4 SP is non-flammable and has very low emission level of VOC (EMICODE EC1-certified), which makes it harmless for those who use the product and for those who use the environments in which it is applied. And what is more, it may also be stored without taking any particular precautions.





# ULTRABOND<sup>®</sup> ECO 4 LVT

Fibre-reinforced **adhesive** developed specifically for bonding LVT (Luxury Vinyl Tile) flooring. Guarantees excellent adhesion and dimensional stability.

- Excellent trowelability
- Rapid set development
- Good wetting of the back of planks up to 30 minutes after spreading
- High final hold
- Excellent dimensional stability
- Solvent-free
- Very low emission level of volatile organic compounds



Product Info



/mapeispa

Mapei is with you:  
take a closer look at [www.mapei.com](http://www.mapei.com)



# Professional solutions for substrates



## ECO PRIM PU 1K

is an one component, solvent-free polyurethane primer with very low emission of volatile organic compounds (EMICODE EC1 R-certified) which hardens with the moisture present in the surrounding air and in the screed. It is ideal for waterproofing and consolidating cementitious screeds with a residual humidity content up to 5%. ECO PRIM PU 1K TURBO, featuring quicker-application properties, is also available.

Pressing deadlines in today's building sites force installers to work on wet substrates. Mapei offers a wide range of products for substrates that can help professional installers to properly deal with this problem.

Mapei primers ensure a perfect preparation of substrates, which is an essential condition for a proper installation of the covering. Let us have a closer look at these products:



## PRIMER MF

is a solvent-free two-component resin epoxy primer used to consolidate and waterproof cementitious substrates with a residual humidity content up to 5%. It is suitable for consolidating cementitious, anhydrite and heating substrates. Its application temperature ranges between 10°C and 30°C. At 23°C its workability time is about 60 minutes. If levelling compounds or flooring adhesives need to be applied over PRIMER MF treated substrates, scatter evenly the surface with quartz sand.

## PRIMER MF EC PLUS

is a solvent-free two component epoxy primer with very low emission level of volatile organic compounds (VOC). Beside the same properties of PRIMER MF, it features low-viscosity and at the same time has a high penetration capacity in the pores of the substrate with no need for dilution. The ideal application temperature ranges between 10°C and 30°C. Adhesives can be applied on substrates treated with this product after about 24 hours, depending on the environment's temperature. If levelling compounds need to be applied over PRIMER MF EC PLUS treated substrates, scatter evenly the surface with 0.7 mm or 1.2 mm quartz sand. ECO PRIM GRIP or ECO PRIM T can substitute the use of quartz sand after applying the second layer of PRIMER MF EC PLUS.



## ECO PRIM GRIP

is a solvent-free primer composed of synthetic resin in water dispersion and selected inert materials, improving the bond of cementitious levelling compounds.



## ECO PRIM T

The application of ECO PRIM T multi-purpose primer can substitute the use of quartz sand on substrates.





## Eco Prim Grip

**Multi-purpose, ready-to-use synthetic acrylic resin and inerts silica based bonding promoter and primer, with extremely low emission level of volatile organic compounds (VOC).**

- Ready for use, quick and easy to apply by roller or flat brush
- Multi-purpose product: excellent bonding promoter for render applied on concrete and masonry substrates and for smoothing and levelling compounds and adhesives for ceramics applied on old internal ceramic and stone floors
- Completely harmless for floor layers: certified EMICODE EC1 by GEV, practically zero emission of volatile organic compounds



Our environmental commitment  
Mapei products help project designers  
and contractors building innovative projects,  
which are LEED (Leadership in Energy and Environmental  
Design) certified by the U.S. Green Building Council

Product info



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# Hawthorn Arts Centre in Boroondara

A 19<sup>th</sup>-century historical building has turned into an Arts Centre

**ABOVE.** External view of the Hawthorn Arts Centre.

**PHOTO 1.** Wooden floors were bonded with ULTRABOND P990 1K adhesive.

**PHOTO 2.** The wooden coverings were treated with ULTRACOAT PREMIUM BASE undercoat and ULTRACOAT HIGH TRAFFIC varnish.

**PHOTO 3.** Tallowwood wooden floors were laid in the foyer using ULTRABOND P990 1K.

Since its opening in 1888, the Hawthorn Town Hall has been an iconic fixture of the City of Boroondara, located in the eastern suburbs of Melbourne (Australia), and a fine example of Victorian architecture. Designed by architect John Beswicke, the hall used to house the City of Hawthorn's council chambers. Since 1994 the building was used as a library, museum and gallery space. In 2008, the City of Boroondara's adopted Arts and Cultural Strategy 2008 – 2013 that identified the vision 'for a city of harmony where citizens can celebrate, share, express and experience a rich arts and cultural life.' To fulfill this vision, the redevelopment of the Hawthorn Town Hall was recommended. In 2009, concept development for the Hawthorn Town Hall Arts Precinct Project began. Construction of the Hawthorn Arts Centre was completed in September 2013.

The Town Hall Gallery has been transformed into three new professional gallery spaces allowing for a broader exhibition calendar and educational program. Other key redevelopment features include the refurbishment of Town Hall areas with new kitchens, amenities and meeting rooms; new arts studio and workshop spaces; new, expanded exhibition spaces and a café.

## Laying wooden floors with eco-sustainable materials

The company in charge of laying over 2400 m<sup>2</sup> of wooden floorings throughout the Town Hall contacted Mapei Technical Services who surveyed the building site and suggested some laying systems able to meet the site's needs and ensure high-quality and eco-sustainability.

The substrates were first treated and re-



1



3



2



**IN THE SPOTLIGHT**  
**ULTRABOND P990 1K**

It is an one-component, ready-to-use, solvent-free, flexible polyurethane adhesive for all types of wooden floors on screeds made from MAPECEM, MAPECEM PRONTO, TOPCEM and TOPCEM PRONTO, cementitious screeds, old wooden, ceramic, marble and terrazzo floors, etc. It is also suitable for heated substrates. It can contribute up to **5 points** to obtain the **LEED** certification for eco-sustainable buildings.



paired with NIVORAPID ultra-fast setting thixotropic cementitious levelling mortar for vertical surfaces, for thicknesses from 1 to 20 mm. In some areas plywood was installed. The plywood was lightly sanded and 2000 m<sup>2</sup> of solid wooden floors were installed using ULTRABOND P990 1K one-component, ready-to-use, solvent-free, flexible polyurethane adhesive for all types of wooden floors on screeds.

In addition to the solid wooden flooring, contractors also installed over 400 m<sup>2</sup> of Tallowood eucalyptus floors in the main and foyer areas again using ULTRABOND P990 1K. All wooden surfaces were coated with ULTRACOAT PREMIUM BASE two-component, NMP (N-Methyl-pyrrolidone)-free, water-based undercoat with low emission of volatile organic compounds (VOC) and high insulating capacity. Once the surfaces were dry, they were finished with two coats of ULTRACOAT HIGH TRAFFIC two-component, 100% polyurethane water-based varnish with high resistance to wear and abrasion and low emission level of VOC.

The concrete substrates which were to be covered with textile and vinyl floorings were first repaired with PLANIPREP FF to smooth

out any levelling differences in the substrate. This product has been lately superseded by PLANIPREP SC, distributed on the Australian market by Mapei Australia Pty Ltd.

The existing concrete floors were then primed using PRIMER G synthetic resin based primer in water dispersion and ECO PRIM T solvent-free, acrylic primer prior to the installation of the levelling and smoothing compounds. UC LEVELLER fast-hardening levelling smoothing compound (which is manufactured and distributed on the Australian market by Mapei Australia) was pumped onto the concreted areas where the flooring levels needed to meet adjoining levels. ULTRAPLAN ultra-fast hardening self-levelling smoothing compound was then applied over the UC LEVELLER layer to form a smooth surface for installing the vinyl coverings.

The contractors installed over 1000 m<sup>2</sup> of textile floors using ULTRABOND ECO TACK adhesive with permanent tack in water dispersion with a very low emission level of VOC for self-laying textile squares. This is a solvent-free adhesive designed to create a permanent tacky film when dry, allowing the removal and replacement of self-laying



textile tiles when required. ULTRABOND ECO 350 was instead used to install the vinyl floors in the kitchen and corridor areas. This is an acrylic adhesive in water dispersion with very low emission level of VOC, which forms a tough bond even after being left open for a long time. It is easy to apply and ideal for laying rubber, PVC, vinyl, polyolephinic, linoleum and carpet flooring. ROLLCOLL was also used to install the vinyl coverings on the walls where required. This is a rapid-setting universal adhesive in water

dispersion for the installation of vinyl floor and wall coverings that can be applied by trowel, roller or spray in a single application. The laying company used MAPECONTACT to bond the textile coverings to the many flights of stairs throughout the building. MAPECONTACT is a reinforced adhesive strip for laying profiles, base-boards, coverings and resilient and textile coverings on steps.

**PHOTO 4.** Before laying textile and vinyl floors, the substrates were levelled and smoothed with UC LEVELLER (manufactured and distributed on the Australian market by Mapei Australia) and ULTRAPLAN.

**PHOTO 5.** ULTRABOND ECO TACK adhesive was chosen to bond textile floors.

**PHOTO 6.** MAPECONTACT reinforced adhesive strip was used to bond the textile coverings on the stairs.

### Technical Data

**Hawthorn Arts Centre,** Boroondara (Australia)

**Period of Construction:** 1888-1890

**Design:** John Beswicke

**Year of the Intervention:** 2013

**Intervention by Mapei:** supplying products to repair and treat the substrates, laying wooden, vinyl and textile floors

**Design:** Peddle Thorp Architects

**Contractor:** APM Group

**Laying Companies:** D Borthwick & Sons (for wooden floors), Floor91 (for textile and vinyl floors)

**Mapei Co-ordinators:** Scott Coutts and Debby Norgrove, Mapei Australia Pty Ltd

### Mapei Products

Preparing the substrates: Eco Prim T, Nivorapid, Planiprep FF (lately superseded by Planiprep SC\*), Primer G, UC Leveller\*, Ultraplan

Laying wooden floors: Ultrabond P990 1K, Ultracoat Premium Base, Ultracoat High Traffic

Laying vinyl floors: Rollcoll, Ultrabond Eco 350

Laying textile coverings: Mapecontact, Ultrabond Eco Tack

\*These products are manufactured and distributed on the Australian market by Mapei Australia Pty Ltd

For further information see [www.mapei.com](http://www.mapei.com) or [www.mapei.au](http://www.mapei.au)



# National Library of Riga

Known also as the “Castle of Light” because of its imposing structure, this new Latvian library houses more than four million books, magazines and historical documents

Along with Estonia and Lithuania, Latvia is one of the three Baltic countries. It joined the Eurozone last year and its capital city, Riga, was nominated European Capital of Culture. This was just the right occasion to inaugurate the true symbol of the “New Riga”, the National Library. The inauguration ceremony was held against a backdrop of the music of Richard Wagner, who started his career as a composer in this city. Local citizens and numerous guests joined together to form a human chain to transfer the books by hand, one by one, from the old library to the new library.

The Gaismas Pils, or “Castle of Light” as the building is now known, was a very ambitious project with a high visual impact. Construction of the new library started in 2008 and work was completed in time for the city’s nomination as European Capital of Culture. Destined to become one of the symbols of the city, it overlooks the River Daugava opposite Old Riga.

The imposing structure, designed by the Latvian-American architect Gunnar Birkerts, is characterised by its asymmetric surfaces with transparent inserts set in profiled steel

frames. The 67 m high building is divided into 13 floors and can house 4 million antique and modern books, newspapers, photos and videos.

## Mapei’s Contribution

The contractor contacted Mapei Technical Services and, after carrying out a site survey, a wide range of products were recommended. Products from the MAPEWRAP SYSTEM line were proposed to carry out repair work and provide static strengthening for the reinforced concrete structures that had been accidentally damaged or eroded by the aggressive climatic conditions. Application of MAPEWRAP C UNI-AX high-strength unidirectional carbon fibre fabric was recommended for this task, a product characterised by its high modulus of elasticity and high tensile strength, particularly suitable for seismic upgrading of structures located in high risk areas. The fabric may be applied using either the wet or dry application technique, and the latter was chosen in this particular case.

The first step was to prime the substrate with MAPEWRAP PRIMER 1, a two-com-

**ABOVE.** An external view of the National Library of Riga.



ponent, solvent-free, highly fluid epoxy resin product. The surfaces were then skimmed with MAPEWRAP 11 two-component, normal-setting, thixotropic epoxy grout, ideal for evening out concrete surfaces before bonding MapeWrap fabrics. The fabric was impregnated using the dry technique with MAPEWRAP 31 two-component, medium-viscosity epoxy adhesive that was applied over the MAPEWRAP 11 layer while it was still wet.

The last phase was to apply MAPEWRAP C UNI-AX fabric over these areas, taking special care to prevent wrinkles forming in the fabric.

In order to create stable, durable substrates, the Mapei technicians recommended building a screed at least 4-5 cm thick made from TOPCEM PRONTO ready-to-use, normal-setting, controlled-shrinkage mortar for quick-drying (4 days) screeds, mixed with PLANICRETE synthetic latex rubber. The screed was then primed with PRIMER G synthetic resin primer in water dispersion diluted at 1:2 ratio with water.

Canadian maple flooring (around 6,000 m<sup>2</sup>) was bonded in the corridors and rooms using LIGNOBOND two-component, water and solvent-free epoxy-polyurethane ad-



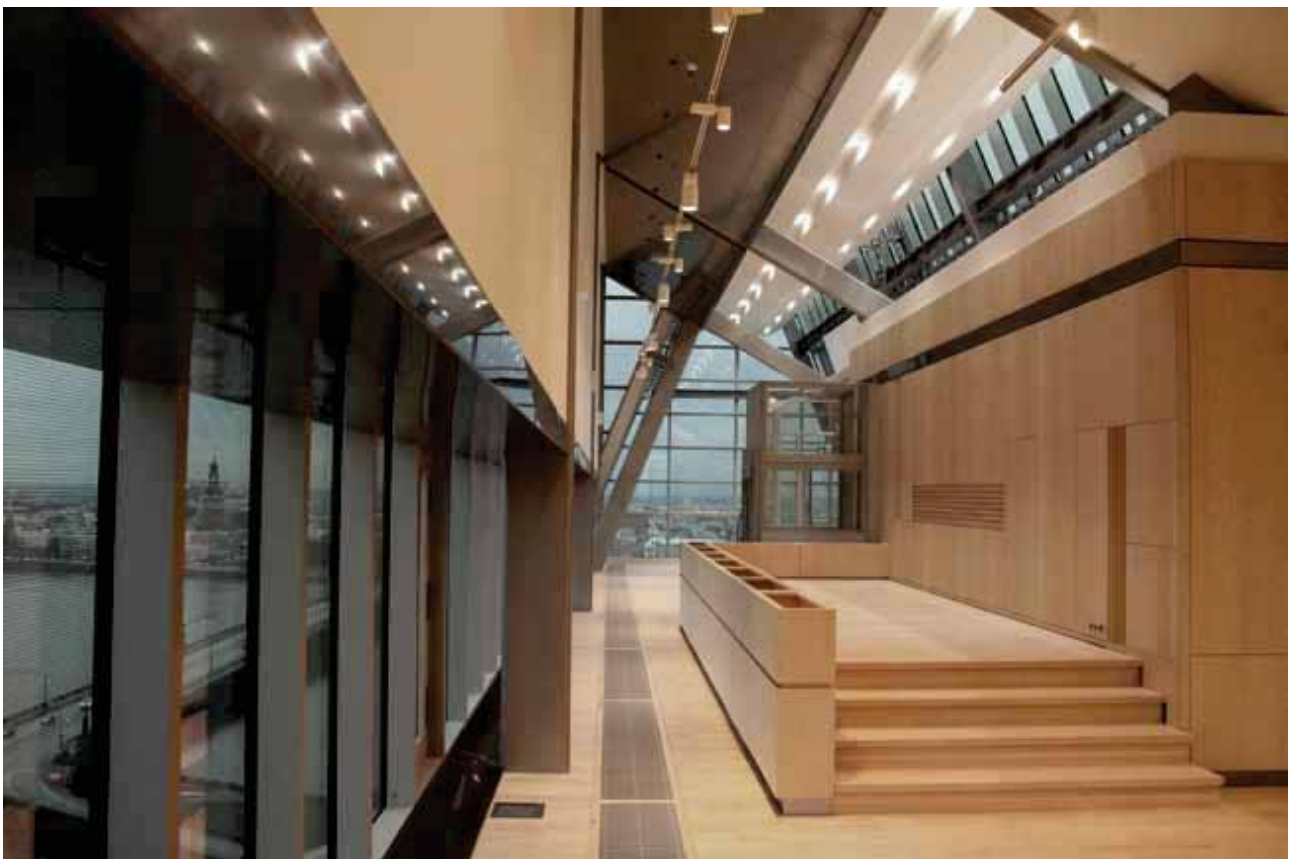
**ABOVE.** Wooden floors were bonded with LIGNOBOND adhesive and varnished with ULTRACOAT HIGH TRAFFIC to provide more resistance to foot traffic.

**BELOW.** Maple wood was used for the floors in the library.

hesive. The next step was to varnish the floor with ULTRACOAT HIGH TRAFFIC, a two-component, 100% polyurethane water-based varnish with high resistance to wear and abrasion and low emission of volatile organic compounds (VOC). This product is ideal for woden floors subject to extremely

### IN THE SPOTLIGHT LIGNOBOND

It is a two-component adhesive made from component A, an epoxy-polyurethane polymer, and component B, a special hardening paste. When the two components are mixed together, they form a product with an even colour which is easy to apply with a notched trowel and which has excellent rib stability. LIGNOBOND is used for bonding lamparquet, solid hardwood strips, planks and all types of wooden floors on cementitious screeds, anhydrite screeds, screeds made using MAPECEM, MAPECEM PRONTO, TOPCEM, TOPCEM PRONTO and similar products, old wooden, ceramic, marble, terrazzo etc. floors and metal sheets. It is also suitable for heated substrates. It can contribute up to **3 points** to obtain the **LEED** certification.





high pedestrian use.

The last step was to seal perimeter joints with maple-coloured SILWOOD.

The substrates in the external courtyard were waterproofed with MAPELASTIC SMART two-component, high-flexibility cementitious mortar, which may be applied by brush or with a roller. MAPETEX SEL macro-holed, non-woven polypropylene fabric was embedded between the two layers of mortar.

Once the preparation of the substrates had been completed, slabs of stone were bonded in place using ADESILEX P9 high-performance cementitious adhesive with no vertical slip and extended open time for

**UPWARD.** The ceramic tiles in the entrance hall were bonded with ADESILEX P9.

**ABOVE.** The large stone slabs in the external courtyard were bonded with ADESILEX P9.

ceramic tiles. The same adhesive was also used for bonding ceramic tiles in the internal entrance hall. ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology was then used to grout the joints, as this is an ideal product for joints from 2 to 20 mm wide.

## Technical Data

**National Library**, Riga, (Latvia)

**Period of Construction:** 2008-2013

**Period of the Intervention:** 2008-2013

**Intervention by Mapei:** supplying products for waterproofing, repairing concrete, structural strengthening, laying ceramic tiles and wooden floors

**Design:** Gunars Birkerts, Modris Ģelzis Architectural Firm, Mārcis Mežulis and Sandra Laganovska

**Client:** Latvian Ministry of Culture

**Works Direction:** Juris Ozolins

**Contractor:** Latvian National Association of Construction (AS "Rbsskals", SIA "Re&Re" and SIA "Skonto Būve").

**Laying Company:** J Projekts Ltd

**Mapei Distributor:** Velve M.S. Technologijas Ltd

## Mapei Products

Strengthening and structural bonding: Adesilex PG1,

Adesilex PG4, Carboplate E170, Colorite Beton, Dynamon SX-N, Mapecrete, Mapecure

SRA, Mapefill, Mapeflex PU30, Mapeflex PU45, Mapegrout T40,

Mapegrout T60, MapeWrap 11, MapeWrap 31, MapeWrap C

UNI-AX, MapeWrap Primer 1

Building and treating the substrates: Planicrete, Primer G, Primer KL, Topcem Pronto

Waterproofing the substrates in the courtyard: Mapeband,

Mapeband TPE, Mapelastic Smart, Mapetex Sel

Laying ceramic tiles: Adesilex P9, Ultracolor Plus

Laying wooden floors: Lignobond, Ultracoat High Traffic, Silwood

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# Ultracoat.

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to protect parquet.



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- Products **certified EC1**



Product info



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# Hotel Karawankenhof in Villach



Products for wooden floors and ceramics in a haven of well-being in Austria

Karawankenhof Hotel is located near Kärnten Spa Resort in the Austrian town of Villach and, just like the latter, it was designed by the architect Titus Pernthaler. The hotel entrance stands out for its clear-cut colours and inviting atmosphere, drawing you into this wellness facility. The bar offers guests a welcome drink or relaxing beverage in a comfortable setting. The reception offers a wide range of entertainment activities. The rooms are extremely “stylish” and feature a perfect combination of architectural design and carefully chosen materials. The company Fliesen Glas Strauss was given the job of installing the ceramic coverings in various

areas of the hotel (bathrooms, kitchens, balconies, bedrooms, etc.) using a number of Mapei products. After treating the substrates with PRIMER G, levelling them using PLANITOP FAST 330, and waterproofing them with MAPELASTIC, the ceramic tiles were installed using ULTRALITE S1 one-component, high-performance, deformable cementitious adhesive with no vertical slip, or KERAFLEX MAXI which was lately superseded by KERAFLEX MAXI S1 on the international market. The tile joints were grouted with ULTRACOLOR PLUS and KERACOLOR FF while the expansion joints were sealed with MAPESIL AC.





**PHOTO 1.** Hotel Karawankenhof enjoys a privileged position in Austria, because it is located near both the Italian and Slovenian borders.

**PHOTO 2.** The wooden floors in the hotel foyer were bonded with ULTRABOND ECO S945 1K.

**PHOTO 3.** Ceramic tiles and wooden floors in the hotel rooms and suites were laid with Mapei products.

**PHOTO 4 and 5.** The hotel bar and restaurant sport wooden floors bonded with ULTRABOND ECO S945 1K.

The company Schatz Objekt was commissioned to install the wooden floorings in the restaurant, bar, bedrooms. After treating the substrates using primers such as ECO PRIM PU 1K and PRIMER MF, the wooden covering was bonded using ULTRABOND ECO S945 1K adhesive, superseded on the international market by ULTRABOND ECO S940 1K and ULTRABOND ECO S948 1K, one-component solvent-free, silylated polymer-based adhesives with very low emission level of volatile organic compounds. The perimeter joints were sealed using SILWOOD, an acrylic sealant in water dispersion for wooden floors.



## IN THE SPOTLIGHT

### ULTRABOND ECO S948 1K

It is a one-component, silylated polymer-based adhesive without water, solvents, amines and epoxy resin, with very low emission level of volatile organic compounds (**EMICODE EC1 R Plus**). ULTRABOND ECO S948 1K is used for bonding multi-layer pre-finished plywood floorings and medium size planks of solid wood up to 15 cm wide on cementitious screeds, screeds made using MAPECEM, MAPECEM PRONTO, TOPCEM, TOPCEM PRONTO and similar products, old wooden floors, ceramic, marble, terrazzo, etc. and anhydrite screeds. It is also suitable for heated substrates. If stored correctly, remaining quantities of the product may be used again at a later date. It is suitable for use by installers who are allergic to epoxy and epoxy-polyurethane products. It is easy to apply with excellent ridge holding and has 20-30% more yield compared with conventional two-component adhesives. It is **GEV certified**, as a product with very low emission level of volatile organic compounds.

## Technical Data

**Hotel Karawankenhof**, Villach (Austria)

**Design:** Titus Pernthaler

**Period of Construction:** 2011-2013

**Period of the Intervention:** 2012-2013

**Intervention by Mapei:** supplying products for laying ceramic tiles and wooden floors

**Client:** Thermen Resort Warmbad-Villach

**Laying Company:** Fliesen Glas Strauss (for ceramic tiles) and Schatz Objekt (for wooden floors)

**Mapei Co-ordinator:** Michael Lingitz, Mapei GmbH (Austria)

Photos by Karawankenhof Hotel

## Mapei Products

Preparing and waterproofing the substrates:

Planitop Fast 330, Primer G, Mapelastic, Mapegum; Eco Prim PU 1K Turbo, Primer MF

Laying ceramic tiles: Ultralite S1, Keraflex Maxi (N.B This product was superseded by KERAFLEX MAXI S1 on the international market)

Grouting tile joints and sealing expansion joints: Ultracolor Plus, Keracolor FF, Mapesil AC

Laying wooden floors: Ultrabond Eco S945 1K

Sealing perimeter joints: Silwood

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# ORNAMENTAL STONE: selection criteria and installation

A word from our experts: this edition features the first in a series of articles about the use of stone materials in the building industry

Marble, granite, travertine.....how many times in the building industry have we heard these materials mentioned, generally grouped together in the category of natural stones? Known also as ornamental stone, in some way they are quite a contrast to stone-derived materials, such as rubble or crushed stone used for building roads, aggregates used to mix mortars and concrete, or marble dust, which are all usually used as “load-bearing” materials. For a long time ornamental stones have been considered mainly for their commercial value and rarely

have their physical and mechanical characteristics been taken into consideration. These characteristics, however, are actually very important when you have to choose the most suitable material for a specific use. For example, when used for flooring, it is recommended to choose a mechanically strong material with high resistance to wear. Which colour to use must also be taken carefully into consideration because, over the years, it could change due to chemical or mechanical action (such as people walking on it). Also, it is good practice to consider the

possibility of the material being damaged by atmospheric pollutants or agents (marble and travertine, for example, “suffer” the acid rain’s action), and assess the surrounding conditions, such as humidity and its exposure to sunlight and sources of heat. Stone with a lot of veins or breccias, on the other hand, may be fragile, coloured marbles may lose their shine and brightness if used outdoor, and so on. Knowing the physical and mechanical characteristics of the various materials allows to avoid a series of unpleasant consequences and produce



works which will remain durable over the years.

According to EN 12440 standards, stone materials are currently identified by giving them their traditional name (Siena Yellow, for example), their petrologic origin (marble, for example), their typical colour (yellow, for example) and their place of origin (Siena, for example). A list of these terms is contained in EN 12670:2003 standards (Natural stone. Terminology).

## Geological classification of rocks

From a geological point of view, rocks are classified into three types according to their origin:

- **igneous rocks:** formed from solidified magma, they may be either intrusive or extrusive, depending on whether they solidify slowly below the earth's surface or in a very short space of time at or above the surface;

- **sedimentary rocks:** they are formed by the accumulation of sediments from erosion and are divided into clastic sedimentary rocks (formed from fragments of pre-existing rocks), organic sedimentary rocks (formed from the accumulation of plant or animal debris, such as the remains of organisms, shells, etc.) and chemical sedimentary rocks (formed when dissolved materials precipitate from solutions);

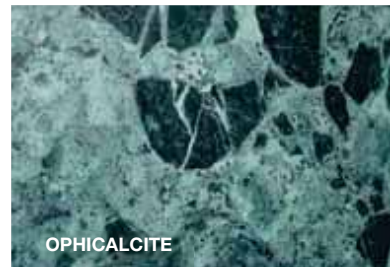
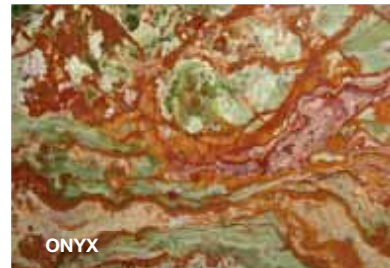
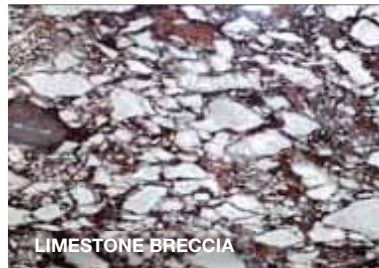
- **metamorphic rocks:** formed by the re-crystallisation of the two previous categories when subjected to varying levels

of heat and pressure.

## Commercial subdivision of natural stone

From a commercial point of view, natural stone is usually classified as marble, travertine, granite or stone. Apart from

## Types of marble



If a rock is composed mainly of calcite and has not undergone any form of metamorphosis (that is, it has not been exposed to high temperatures), its geological reference is limestone, whereas it is known as marble if it has undergone a process of metamorphosis. Marble is generally defined as a natural rock, with a compact, crystalline structure. It is polishable, made up mainly of carbonates (minerals that contain calcite and dolomite).

From a commercial point of view, however, the term marble encompasses numerous groups of materials:

- marble in the commercial sense, that includes rocks of a carbonate nature originating from a process of metamorphosis, calciphyre and cipolin;
- limestone, dolomite and limestone breccias, comprising polishable rocks of a carbonate nature originating from sedimentation;
- onyx (also known as limestone alabaster or oriental alabaster), comprising rocks of a carbonate nature originating from sedimentation formed by chemical precipitation in underground cavities or generally characterised by a pattern of concentric bands;
- serpentinite: metamorphic rocks made up of serpentine (magnesium silicate), and so not of a carbonate nature.
- ophicalcite: fragments of serpentinite cemented together with carbonate.

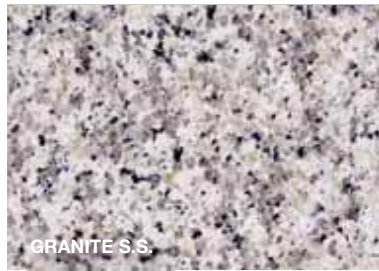
the fact that this does not coincide with the scientific classification for stone, each single category also contains materials which are aesthetically very different to each other and which also have different physical and mechanical properties. Let's have a look at each one in the following summaries.

## Types of granite

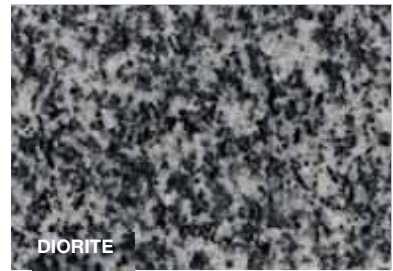
Unlike marble, granite is characterised by its granular structure with visible crystals (known as a phanerocrystalline structure). Granite is also compact and polishable and is made up of different minerals to marble such as quartz, feldspars and feldspathoids.

In commercial terms the following are in the granite category:

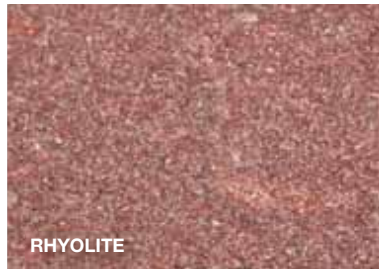
- granite, intrusive magma rock (that is, formed from solidified magma below the earth's surface), acidic in nature with a medium or fine grain structure made up of quartz, sodium-potassium feldspar and mica;
- other types of intrusive magma rock such as diorite, granodiorite, syenite, gabbro, etc. with a mineralogical composition similar to that of granite, but with a different level of acidity and texture;
- the corresponding extrusive magma rocks (that is, formed from magma that has solidified quickly at or above the earth's surface) with a porphyritic structure, that is, with large crystals immersed in an homogeneous matrix (rhyolite, andesite, trachyte, basalt, etc.);
- certain rocks of a metamorphic nature with the same composition, such as gneiss.



GRANITE S.S.



DIORITE



RHYOLITE



TRACHYTE



BASALT

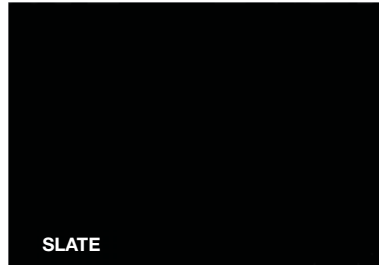


GNEISS

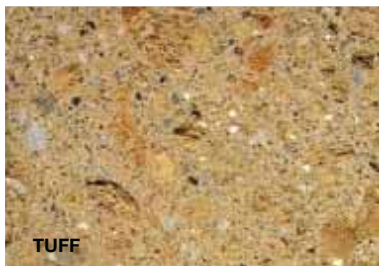
## Types of stone



QUARTZITE



SLATE



TUFF



SANDSTONE

From a commercial point of view, stone is defined as a type of rock that is not polishable and is used in both construction work and for decorative purposes. This group comprises all the types of rock not included in the other categories and have a wide variety of mineralogical structures. To summarize, the following two groups may be identified:

- soft and/or lightly compacted rocks such as calcarenite, sandstone with a calcareous cement or pyroclastic rocks (rocks formed from the sedimentation of debris hurled through the air by volcanic activity) such as tuff;
- hard and/or compact rocks that include naturally cleaved types of stone such as quartzite, mica-schist, slate and certain types of vulcanite.

## Types of travertine



CLASSIC TRAVERTINE



RED TRAVERTINE

Travertine stones are chemically deposited sedimentary rocks and are made up of crystals of calcium carbonate. They may contain thin bands with different concentrations of impurities or with a different granulometric distribution. This is the only category of stone which has the same petrologic and commercial definition and is widely used in the building industry.



Origin of rock	Name	Compressive strength (kg/mm <sup>2</sup> )	Flexural strength (kg/mm <sup>2</sup> )	Modulus of elasticity (kg/mm <sup>2</sup> )	Toughness (impact strength) (kg/mm <sup>2</sup> )	Resistance to wear (compared with granite)	Polishability	Workability	Flakability	Resistance to chemicals	Areas of use
Intrusive igneous rocks	Granite	15-25	1-2	5000-6000	110-120	1	good	average	low	high	covering internal and external horizontal and vertical surfaces
	Diorite	17-30	1-2.2	8000-10000	130-180	1-1.5	good	average	low	high	Covering internal and external horizontal and vertical surfaces
Extrusive igneous rocks	Porphyry	18-30	1.5-2	5000-7000	130-240	1-1.5	poor	low	average	high	Covering external horizontal and vertical surfaces
	Basalt	25-40	1.5-2.5	9000-12000	160-300	1-2	good	average	average	high	Covering external horizontal and vertical surfaces
Pyroclastic rocks	Volcanic tuff	0,5-2	-	1000-3000	-	-	absent	good	low	average	Covering external horizontal surfaces
Sedimentary rocks	Soft limestone	2-9	0.5-1.1	3000-6000	70-110	4-9	poor	good	low	low	Covering external horizontal and vertical surfaces and trims (doorsteps, steps, skirting, etc.)
	Compact limestone	8-18	0.6-1.5	4000-7000	70-110	4-8	good	good	low	average	Covering and finishing external and internal surfaces
	Travertine	2-6	0.4-1.0	2500-5000	60-100	7-12	poor	good	low	low	Covering vertical surfaces and trims (doorsteps, steps, skirting, etc.)
Metamorphic rocks	Gneiss	16-28	-	5000-7000	40-100	1-2	good	average	average	high	Covering external and internal surfaces
	Schist	3-10	-	2000-6000	40-80	4-8	low	average	high	elevata	Covering external surfaces
	Marble	10-18	0.5-1.5	4000-7000	70-100	4-8	good	good	low	low	Covering and finishing external and internal surfaces
	Quartzite	15-30	-	5000-7000	110-180	1-1.5	good	average	low	high	Covering external and internal surfaces

TABLE. 1. Main technical characteristics and properties of certain types of rock. (from: <http://geometra.zanichellipro.it>)

## How to use stone correctly

Knowing which type of material its commercial name refers to is very important because, as mentioned above, physical and mechanical characteristics vary according to the type of rock. We may say that, in general, granite and stone are more resistant to abrasion and chemicals than marble, but there are numer-

ous characteristics to take into consideration, depending on the correct area of use of the stone chosen, as can be seen in Table 1.

### The most appropriate material for your needs

As mentioned previously, each material must be chosen according to its area

of use. Generally speaking, and often thanks to one's experience and common sense, it is recommended to carry out a more thorough analysis of the characteristics of each single material because, being natural materials, they are also characterised by a certain degree of variability in their composition, structure and homogeneity.

By adopting precise analytical techniques, it is possible to minimise the degree of variability in the characteristics of the chosen material and limit aesthetic and performance problems. The importance of how to install these materials needs to be discussed separately. The introduction of thinner and thinner slabs has given rise to a new set of problems that also highlight the importance of the installation system to adopt. We will discuss this issue over the course of the next articles and we will look at the most appropriate Mapei systems to install the various types of stone material correctly.

**Mapei SpA.** Arianna Lo Presti, R&D Laboratory; Marco Albelice, Technical Services Department





# BUSGATE Terminal in Lisbon

Mapei adhesives for ceramics and stone in the airport's new terminal and shopping area

The new Busgate Terminal is a six-storey structure covering a total surface area of around 37,000 m<sup>2</sup> adjacent to Lisbon Airport's Pier Norte Terminal and gates A24, A25 and A26. Its construction is part of Lisbon Airport's expansion programme aimed at supporting the increasing flow of traffic at the airport, while at the same time guaranteeing high quality service, security and an increase in sales by creating a new shopping area. Thanks to an investment of more than 400 million Euros, the new Busgate Terminal now has the capacity to cope with all the passengers that are either departing, arriving or in transit.

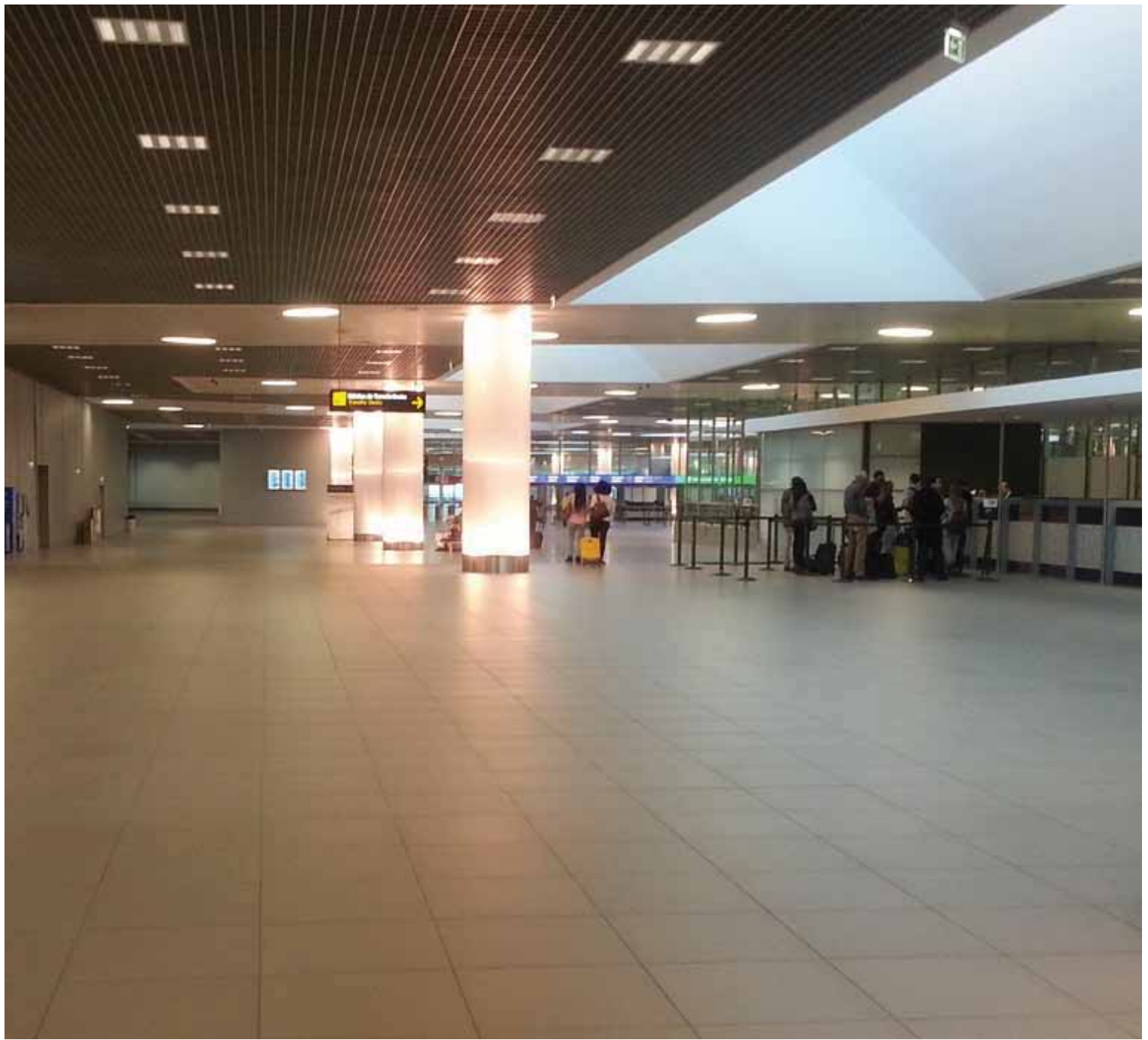
## A new shopping area

The new shopping area is called Praça Lisboa (Lisbon Square) and extends over an area of 2,000 m<sup>2</sup>, with 17 famous brand stores, such as FNAC and Starbucks, and the first ever Victoria's Secret sales outlet on the Iberian peninsula. It is located in the departure area of Lisbon Airport and is reserved to passengers carrying a boarding pass. Passengers departing from Terminal 1 are now able to choose from a wide range of clothing and accessories, jewellery, books, toys, perfumes, cosmetics, coffee products and gastronomic delicacies. According to airport officials, the expansion programme is intended to create 100 new jobs and generate annual turnover of 15 million Euros.

## Mapei's intervention

Mapei took part in the work on this new area by supplying installation systems for ceramic and stone material. Much of the internal porcelain flooring, in particular, was bonded with the cemen-





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**PHOTO 1.** The new Busgate Terminal is a six-storey structure adjacent to Lisbon Airport's Pier Norte Terminal and gates A24, A25 and A26.

**PHOTOS 2 and 3.** Porcelain tiles were bonded with ADESILEX P9 and the joints were grouted with KERACOLOR FF.

**PHOTOS 4 and 5.**

The cementitious adhesives KERASET and ADESILEX P9 were used to bond porcelain tiles on many of the internal floors.

The joints were grouted with KERACOLOR FF.



6



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**PHOTOS 6 and 7.** Slabs of black and white stone were bonded to the walls and floors in the bathrooms with KERALASTIC T and the joints were grouted with ULTRACOLOR PLUS.

**PHOTO 8.** Some of the internal walls were covered with Bisazza mosaic which was bonded with KERAFLEX adhesive. The joints were grouted with KERACOLOR FF.

titious adhesives KERASET (for the 30x30 cm tiles) and ADESILEX P9 (for the 60x60 cm tiles) on cementitious screeds. The tile joints were then grouted with KERACOLOR FF cementitious mortar with water-repellent DropEffect® technology.

In other internal areas, slabs of white stone measuring 100x80x2 cm were bonded to the cementitious screeds with two layers of KERALASTIC T two-component adhesive with no vertical slip. The stone joints were grouted with ULTRACOLOR PLUS high-performance, anti-efflorescence, polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology. KERALASTIC T was also used to bond the same type of stone to the cementitious renders of the internal walls and parts of the

floors. ULTRACOLOR PLUS was again used to grout the joints.

Some of the internal walls were covered with Bisazza mosaic, bonded in this case with KERAFLEX cementitious adhesive with no vertical slip and with extended open time, used for bonding on both cementitious and concrete substrates.

30x30 cm porcelain tiles were bonded in the bathrooms with KERASET and the tile joints were grouted with ULTRACOLOR PLUS.

For the internal stairways, the 30x30 cm porcelain tiles were bonded with KERASET while the larger 60x60 cm porcelain tiles were laid with ADESILEX P9 adhesive. In both cases the tile joints were grouted with KERACOLOR FF.

For the external walls, 30x30 cm porcelain tiles were bonded to the cementitious renders with KERAFLEX and the joints were grouted with KERACOLOR FF.

This article was taken from *Realtà Mapei Portugal* issue no. 23, the in-house magazine published by Lusomapei, whom we kindly thank.



8

**IN THE SPOTLIGHT  
ULTRACOLOR PLUS**

It is a cementitious mortar for grouting joints, with reduced water absorption and high resistance to abrasion, certified EMICODE EC1 PLUS. It is suitable for grouting joints on all types of ceramic floors and walls. It allows to obtain uniform colour; colours resistant to ultra-violet rays and atmospheric agents; smooth, compact finished surface and easy cleaning. It can contribute up to **4 points** to obtain the **LEED** certification.



**Technical Data**

**Busgate Terminal**, Lisbon airport, Portugal

**Period of Construction:** 2006-2014

**Period of the Intervention:** September 2012- March 2014

**Intervention by Mapei:** supplying products for laying ceramics and stone materials

**Client:** ANA Aeroportos

**Contractor:** Mota-Engil

**Laying Company:** VNZ Lda/ JTT Lda

**Works Direction:** Nuno Cardoso

**Mapei Distributors:** Macorelli, Sofermar

**Mapei Co-ordinator:** Duarte Graça, Lusomapei (Portugal)

**Mapei Products**

Laying ceramics and stone materials: Adesilex P9, Keralastic T, Keraflex, Keraset  
Grouting joints: Keracolor FF, Ultracolor Plus

**For further information see the websites [www.mapei.com](http://www.mapei.com) and [www.mapei.pt](http://www.mapei.pt)**

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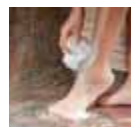


**Cementitious filler for grouting joints, with a perfect uniform colour, blocking the formation of microorganisms with BioBlock® technology.**

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- Blocking the formation of microorganisms with **BioBlock® technology**
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- For internal and external use
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- **CG2WA-certified** according to **EN13888**



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Photo by Matteo De Fina

## “INTRAPRESÆ COLLEZIONE GUGGENHEIM” IN THE NAME OF ART AND CULTURE

Mapei’s partnership with the Peggy Guggenheim Collection in Venice is continuing with great success

Mapei is relentlessly pursuing its goals in the world of art and culture. In the firm belief that artistic genius and inspiration play a decisive role in any work of art successfully created by mankind, Mapei is lending its support to every form of art and is now involved in numerous projects aimed at promoting and consolidating the Italian and international art heritage. Art and work come together perfectly in the corporate philosophy behind Mapei’s own vision, which is perfectly embodied in the way the Company manufactures the most highly developed, high-performance products for the building industry, capable of turning any “building dream” into reality.

To get a better idea of this ongoing and highly profitable relation between Mapei and art, it is worth remembering the fruitful partnership that has been going

on between Mapei and the “locations of Guggenheim art” for several years now. In 2008 Mapei products were used to renovate Frank Lloyd Wright’s building housing the Solomon R. Guggenheim Museum in New York (USA), which, having been damaged down the years by atmospheric agents, was full of cracks and damages (see *Realtà Mapei International* no.28).

In 2009 Mapei also helped restore the complex hosting the Peggy Guggenheim Collection in Venice (Italy).

This project involved the renovation of both the façade of Palazzo Venier dei Leoni made of Istria stone facing along Canal Grande and the façade along Rio delle Torreselle, where the entrance to the museum and the entrance to the refreshments area are located (see *Realtà Mapei International* no. 31).

### **Intrapresæ Collezione Guggenheim**

This partnership has continued with great success even in the realm of cultural projects undertaken by the Peggy Guggenheim Collection in Venice.

The most important of these projects is certainly “Intrapresæ Collezione Guggenheim”: the first and best known corporate membership project in an Italian museum also involving some of the most famous Italian companies, which, like Mapei, have managed to match the excellence they have achieved in their own business sector with the passion for art inherent in the people representing them. Companies involved in “Intrapresæ Collezione Guggenheim” maintain their own individuality: the differences between them are actually what make them so precious and what, down the years, have made this group even more lively, creative and united. A group which has turned its support for the Peggy Guggenheim Collection’s exhibition work into a real strong point and



source of prestige.

"It is thanks to the constant backing of lots of different companies, which, down the years, have firmly believed in this mission and come together as a group, that the Peggy Guggenheim Collection has been able, both in the past and present, to keep on organising exhibitions of the highest quality as well as teaching programmes aimed at educating the general public of the future", so Philip Rylands, the Director of the Venice museum, claims.

Art inspires Business. Business support Art. This is slogan behind "Intrapresæ", powerfully embodying its identity and vision and accompanying it throughout its ongoing commitment to promoting and enhancing art.

### The art of the Pollock brothers

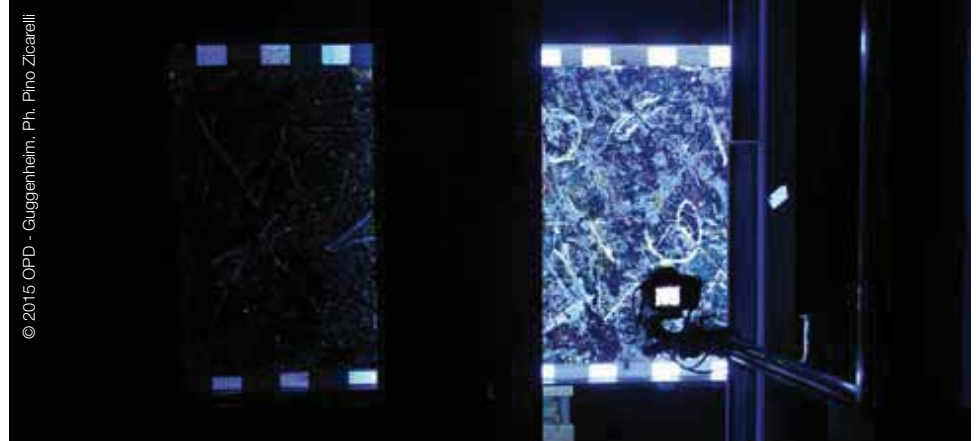
The Peggy Guggenheim Collection in Venice is organising a rich exhibition schedule in 2015 including three eye-catching events paying tribute to the brothers Jackson and Charles Pollock. The uniqueness of this enterprise has been made possible thanks to the fundamental backing of "Intrapresae Collezione Guggenheim".

It is also worth mentioning that in 2012 Mapei was the official sponsor of an exhibition entitled "Cycling, Cubo-futurism and the Fourth Dimension. Jean Metzinger's 'At the Cycle-race Track'" organised by the Peggy Guggenheim Collection in Venice to commemorate the winner of the 1912 edition of the famous Paris-Roubaix cycle race (see *Realtà Mapei International* no.40).

During the year of Expo 2015 in Milan, the Peggy Guggenheim Collection and "Intrapresae Collezione Guggenheim" are providing a unique opportunity to gain a closer insight into the beating

heart of American Abstract Expressionism thanks to an event that nobody should miss, which will see Jackson Pollock's great *Mural* brought across the ocean to Italy for the first time on 23<sup>rd</sup> April. This will be the centrepiece of an exhibition entitled "Jackson Pollock's *Mural: Energy Made Visible*".

This was preceded by another important event in the Venetian museum's history: from 14<sup>th</sup> February to 6<sup>th</sup> April one of Jackson Pollock's undisputed masterpieces, *Alchemy*, "came home" after being displayed for over a year at the Opificio delle Pietre Dure in Florence as part of an exhibition devoted to Jackson Pollock and this work.



**ABOVE.** The press conference on the Peggy Guggenheim Collection's events schedule for 2015 was attended, among others, by Adriana Spazzoli, the Mapei Group's Operational Marketing and Communication Director, and Philip Rylands, Director of the Collection.

**LEFT.** The building housing the Peggy Guggenheim Collection in Venice.

**BELOW.** *Alchemy*, a painting by Jackson Pollock, was restored to its former glory after 12-month cleaning work at the Opificio delle Pietre Dure in Florence.

The exhibition in Venice, under the curatorship of Luciano Pensabene Buemi, the Conservator of the Peggy Guggenheim Collection, and Roberto Bellucci, Restorer and Conservator at the Opificio delle Pietre Dure in Florence, revealed to visitors the explosion of colours in Pollock's masterpiece, now restored to its former glory after over 12-month cleaning work at the Opificio delle Pietre Dure in Florence. The exhibition features video clips, 3-D reproductions, touch-screen images and interactive tools. Finally, to complete the original exhibition schedule, the first retrospective event devoted to Charles Pollock's work will also open on 23<sup>rd</sup> April in Venice.

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# It's all about the playing surface

The characteristics of playing surfaces affect the players' reaction: the results of research work carried out by Mapei Sport Research Centre

The problem of football stadiums all around the world is becoming more and more serious, with many clubs either renovating existing stadiums or building new ones more adequate to the demands of modern football.

Since Mapei bought the Città del Tricolore stadium in Reggio Emilia (Central Italy) in 2013 (the former Giglio stadium, now known as the Mapei Stadium and used by both Sassuolo and Reggiana teams), a number of interventions have been carried out to upgrade the complex. One of the most recent interventions was to complete a new grass pitch since the existing one had highlighted serious problems over the course of the 2013-2014 season. The new sub-base for the Mapei Stadium was completely remade by adopting an innovative system specially developed by the Mapei Research laborato-

ries: the MAPESOIL system, an exclusive Mapei technology used to upgrade the deep-drainage efficiency of pitches. A completely new playing surface was also installed at the Mapei Stadium using a cutting-edge solution. The playing surface of football pitches may be in either natural grass, artificial grass or hybrid-reinforced grass. The latter is characterised by a mix of natural and synthetic grass and was developed to create a playing surface with similar characteristics to natural grass, while at the same time offering more resistance to wear.

The characteristics of a surface play a crucial role on the physiological responses of an athlete during a game. Using a very stiff surface reduces the amount of energy expenditure, but at the same time increases the load on an athlete's joints. A surface with excessively high or low tensile strength may lead to an increase in injuries due to an increase in the loads on joints or excessive instability for the player. As a result, a study of the physiological reaction of athletes using different types



**PHOTO 2.** A Sassuolo player wearing a metabolic cart device during a running test to determine the energy cost of running.

**PHOTO 3.** A Sassuolo Calcio player during a sprint test.



**PHOTO 4.** A Sassuolo Calcio player during a short passing test (Loughborough Soccer Passing Test).



of playing surfaces is of primary importance. The selection for the new playing surface at the Mapei Stadium was also based on an interpretation of the data collected during the scientific research work carried out by Mapei Sport. This research work involved studying the physiological reaction and technical performance of a group of football players using three different types of playing surface:

- hybrid-reinforced grass with a recently installed MAPESOIL (RMS) sub-base in good condition;
- natural grass with a recently installed MAPESOIL (NMS) sub-base in good condition;
- natural grass with a conventional (NCS) sub-base in good condition, which has been in use for a few years.

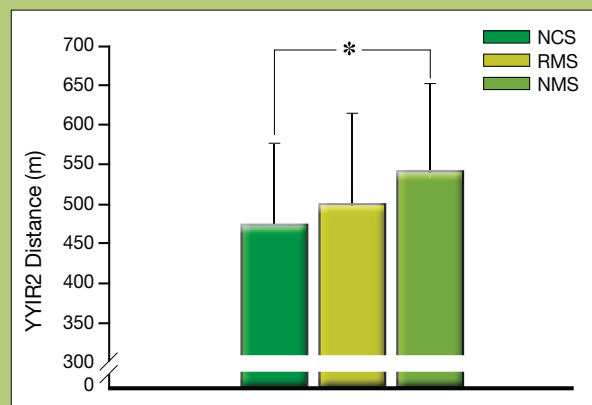
### The research work

The first phase was carried out to verify the mechanical characteristics of the surfaces being studied using the so-called "Berlin Athlete" (Photo 1): the equipment, intended for sport surfaces, is required by FIFA tests and technically reproduces the stress of an ideal athlete over the tested surface. The initial characterization of the surfaces show higher value of shock absorption, vertical deformation and relative humidity over the NCS surface, compared with the RMS and NMS surfaces. In other words the NCS surface shows a higher deformation than the other pitches when stressed by the athlete. A group of youth players from the Sassuolo team carried out a series of physical and technical tests on all three surfaces. They were intended to determine the energy cost of running (measuring the amount of energy required to run a given distance using an instrument called a metabolic cart device, Photo 2) in addition to blood lactate accumulation after each bout of exercise. Furthermore, players completed the Yo-Yo intermittent recovery test (an extensively validated test used in football in which the performance index is the total distance covered during the test). The results from these tests did not highlight any significant difference in the actual cost of running, although the accumulation of blood lactate tended to be higher on the NCS surface. Therefore, the overall amount of energy required to sustain the periods of running tended to be higher on the NCS surface. Confirmation of the higher amount of energy required on the NCS surface was given by their performance in the Yo-Yo test, which tended to be worse (shorter distance covered by the athletes, Figure 1). The athletes also carried out a series of sprints (Photo 3) and jump tests to verify their ability to produce power on the three different surfaces. In this case, no significant difference was noted between the three surfaces tested. Finally, the players were subjected to several technical tests to check their ability to control and dribble the ball and their ability to perform short passes in an accurate manner passes along a predetermined route (Loughborough Soccer Passing Test, Photo 4). From this point of view, passing accuracy was worse on the natural grass pitch with a conventional substrate (Figure 2).

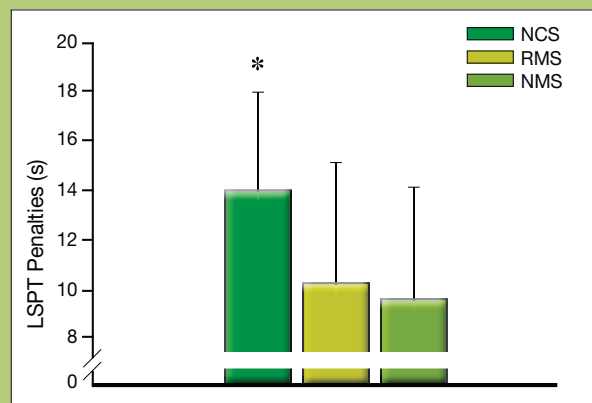
The results of this research work confirm that the characteristics of a surface can influence the physical performance of a player, but also influence technical aspects. Excessively soft surfaces can increase the amount of energy used up by athletes to a point whereby it has a negative influence on their maximum running capacity. Excessively stiff surfaces can contribute to an increase in pathologies caused by excessive loads



**PHOTO 1.** The Berlin Athlete test reproduces the stress of an athlete over the tested surface, thus testing the surfaces' mechanical characteristics.



**Fig. 1** - Average values and standard deviation for the distance run during the Yo-Yo intermittent recovery test on the three different surfaces (NCS, RMS, NMS). \* $p < 0.05$  statistically significant difference



**Fig. 2** - Average values and standard deviation for penalties accumulated during the short passing test (LSPT, Loughborough Soccer Passing Test) on the three different surfaces (NCS, RMS, NMS). \* $p < 0.05$  statistically significant difference

due to an increase in stress on muscles and joints. The technical choices made when constructing grass playing surfaces can influence the performance levels of athletes and may play a role in the prevention of pathologies caused by excessive loads due to the activity carried out.

**Ermanno Rampinini.** Human Performance Lab, Mapei Sport Research Centre, Olgiate Olona (Italy)

# A GREAT STADIUM FOR EUROPE

Mapei Stadium will be hosting both the 2016 Women's Champions League Final and a qualifying match for the 2016 European Championships

The city of Reggio Emilia (Central Italy) is getting ready to host the 2016 Women's UEFA Champions League Final, which will be held at the Mapei Stadium - Città del Tricolore on 26<sup>th</sup> May next year, two days before the Men's final is scheduled to take place at Meazza Stadium in Milan.

The FIGC (Italian Football Federation) decided that Reggio Emilia was the ideal place for staging an event, which, due to how spectacular it is, the extensive media coverage and, above all, the involvement of so many fans, has really grown in prestige within the realm of worldwide football competitions.

Reggio Emilia was chosen due to its great passion for football, resources and local business enterprise. Decisive

factors in this respect were the enthusiasm and support offered by the City of Reggio Emilia, Mapei Stadium S.r.l., and Sassuolo and Reggiana football clubs with whom the FIGC has already set a profitable working relationship under way, so that the final will be staged in the best setting possible.

The event was officially presented on 3<sup>rd</sup> March at a press conference held in the Red Chamber of Reggio Emilia City Hall. The meeting was attended by Luca Vecchi, Mayor of Reggio Emilia, Michele Uva, Managing Director of the FIGC, and Adriana Spazzoli, Operational Marketing & Communication Director of the Mapei Group.

Luca Vecchi thanked the people responsible for getting the city involved in this

important event "which will be organised in conjunction with other cultural events mainly aimed at schools and young people, in order to promote an a notion of sport that goes beyond competition and is aimed at conveying educational values".

Michele Uva, Managing Director of the FIGC, referred to some "factors that were decisive in Reggio Emilia being awarded this important event, such as the investment in the stadium made by the owners, Mapei, and the City Council's keenness to stage it, due to the positive spin-offs and publicity for the city and its local territory that will inevitably come from hosting an event of this kind".

UEFA's (Union of European Football As-





**LEFT.** On 3<sup>rd</sup> March a press conference on the 2016 Women's Champions League was attended by Luca Vecchi, Mayor of Reggio Emilia, Michele Uva, Managing Director of the FIGC, and Adriana Spazzoli, Operational Marketing & Communication Director of the Mapei Group.

sociations) infrastructural regulations for upgrading the stadium state that: every sector of the terraces should have seats with backs rests; the hygienic facilities must be modernised; the stadium name should make no reference to trademarks and brands. In relation to this latter matter, UEFA suggested using only "Stadio Città del Tricolore" as its name and for any related communication-information purposes.

Adriana Spazzoli pointed out that: "Being awarded the right to host the 2016 Women's Champions League Final at Città del Tricolore stadium fills us with pride and was unthinkable until a year and a half ago. It means we have worked well and the operations carried out on the stadium have definitely been worthwhile and attracted people's attention in a positive way. We are also working on a schedule of other projects and improvements affecting the entire facility. With this forthcoming event in mind, we will continue along our chosen path, most significantly upgrading the seating in the stands and terraces, improving the overall standard of the stadium, and making it more accessible for the physically challenged. This event is a great opportunity and will allow the stadium to be improved, so that it will be able to host both national and international events. Again as regards the implementing of structural-functional improvements, a project is being developed to remove the barriers from all around the playing field (so far they have only been removed from behind the goals), in order to allow fans to be closer to the action, so that they can really enjoy the excitement of top-flight football from close up. This will make the Mapei Stadium an increasingly cutting-edge facility. Similarly, a project studying the possibility of

covering the water channels is also being worked on. This will allow the team benches to be closer to the stands and create new spaces for the physically challenged, while maintaining the existing hydraulic system. As regards the schedule for the works, I can safely say that they will be carried out, as has been the case in the past, without interfering

with the calendar of sporting events, so presumably in July and August".

Redevelopment operations will appropriately also be crowned by the arrival of the Italian National Football team coached by Antonio Conti, which will be taking on Malta at Mapei stadium on 3<sup>rd</sup> September, in a qualifying match for the 2016 European Championships to be held in France.

Mapei Stadium - Città del Tricolore is about to become one of the top eight stadiums meeting the European standards required for a UEFA licence.

## UEFA Women's Champions League

It is the most important European club competition in women's football: it was originally set up by the Executive Committee of UEFA (Union of European Football Associations) in 2000 under the name "UEFA Women's Cup" and was first held during the 2001-2002 season before taking on its current name in 2009-2010. According to the competition's new format since 2010, the final is to be held in the same location as the Men's final or somewhere close by. Over the last five years it has been held at the Coliseum Alfonso Pérez stadium in Getafe, Madrid (Spain) in 2010; the Craven Cottage stadium in London (UK) in 2011; the Olympiastadion in Munich (Germany) in 2012; the Stamford

Bridge stadium in London in 2013; the Estádio do Restel in Lisbon (Portugal) in 2014.

The 2015 final will be held on 14<sup>th</sup> May at Friedrich-Ludwig-Jahn-Sportpark Stadium in Berlin, the same city that will host the Men's final at Olympiastadion on 6<sup>th</sup> June.



## UEFA European Football Championships

The European Football Championships is a tournament held every four years between Europe's leading teams. Apart from the host nation, which is the only team automatically qualifying for the finals, all the other national teams must qualify from the group phase. The finals of the forthcoming Championships (Euro 2016) will be held in France from 10<sup>th</sup> June to 10<sup>th</sup> July 2016.

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