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# NEW CHALLENGES FOR ARCHITECTURE



**ADRIANA SPAZZOLI.**  
*Realtà Mapei International's*  
Editor-in-Chief.

Flicking through this latest issue, readers will notice that a lot of the subject matter makes reference to the joint statement by the G7 Science Academies announced during the meeting held at the Accademia dei Lincei in Rome, chaired by Professor Alberto Quadrio Curzio. Other articles look at the conference on historic Italian houses, the Guggenheim Museum and the 150<sup>th</sup> anniversary of the birth of the brilliant architect, Frank Lloyd Wright. I decided to base this editorial around the role and duty of an architect.

Is an architect the “mere” executor of what their client commissions, even if it is not in the interest of the common good, or is it their duty to focus on the common good? Should aesthetic or ethical values take precedence in architectural design? Should an architect’s ethical and deontological responsibility take precedence in an architectural project?

I will draw on questions posed in the book “Architecture and Democracy” - written by the archaeologist and art historian Salvatore Settis and published by Einaudi - to discuss something that is extremely important to me: the question of the architect’s responsibility towards the surrounding world. Responsibility for the devastation often wrecked on the land and landscape, which Settis places exclusively on the shoulders of business people, politics and finance, as well as engineers, town-planners and architects. A few years ago, Settis suggested that architects should make a pledge similar to the Hippocratic Oath of doctors, the same in its intents but made to Vitruvius: this would mean that architectural designers would have to follow an ethical code providing greater protection for the common good. An issue that does not only concern the major architectural works and plans of the “archistars”, but also smaller projects in terms of their size and value.

Mapei works with building professionals, such as engineers and architects: the latter’s responsibility is not just judicial or legal, but also ethical and deontological, and it consists in educating people to appreciate the quality of architecture and a duty to protect the surrounding landscape.

For me, this is the most interesting aspect of an architect’s work: moral responsibility in designing a building or planning an entire section of the city, keeping carefully in mind the con-

cept of sustainable architecture in the broadest sense, aimed at creating a balance between buildings and the environment through interaction with the land.

This is an important matter for many architects, such as Mario Botta, Mario Cucinella, Norman Foster, Zaha Hadid and Daniel Libeskind, as well as Gaetano Pesce, who recently stated in an interview given to *Il Corriere* newspaper that “architecture is not decoration, it is not just form. It is ethical”. I would also like to quote Frank Lloyd Wright, whose over 1000 works include the Guggenheim Museum in New York for which we supplied the products for carrying out conservational repairs on the outside surfaces in 2008.

As Renzo Piano points out, “sustainable architecture also entails a certain degree of tension between building and nature”. Tension that needs to be mediated and explained considering the input from technology and research, the financial feasibility of building in a certain way, and the importance and increasing use of renewable energy resources.

There is an issue I am particularly interested in: redeveloping the existing built heritage, particularly work on upgrading the suburbs, something Renzo Piano is focusing on through projects aimed at “sewing back together” the urban fabric in partnership with the G14 team, 6 young architects to whom he donates his salary for being a lifelong senator.

So, I would say it is that the deontological and everyday responsibility of an architect to educate people to appreciate the quality of building and show respect for the environment, because, as Salvatore Settis writes, “the quality of the landscape and environment is not a luxury, it is a necessity, it is the best investment in our future”.

In conclusion, I would like to say few words about the prospects opened up for architects by digital and technological innovation. Partly due to the recession in the industry, new work methods have been developed using cutting-edge technology and new software programs for managing architectural projects (such as BIM-Building Information Modeling). In this light, Mapei’s corporate website has also been upgraded: it will be available online from September and be presented in the forthcoming issue of *Realtà Mapei*. Enjoy your reading!

*Salvatore Settis*



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### COVER STORY

La Rinascente, the most glamorous  
Italian department store celebrates  
its 100 years. Indeed, it was the  
shop windows that were the centre  
of attention for an entire week from  
6<sup>th</sup>-12<sup>th</sup> June in a project promoted by  
the interior design and architecture  
magazine, Elle Decor, to its hundredth  
anniversary. 100 of the most  
emblematic design objects across  
an entire century of history were  
displayed and carefully set in the  
eight shop windows, for which Mapei  
supplied its products for coloured,  
decorative coatings.

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# SAVE THE DATES

NEXT AUTUMN TOO MAPEI  
WILL TAKE PART IN SEVERAL  
TRADE FAIRS  
**COME AND VISIT  
OUR STANDS!**



25<sup>th</sup>-29<sup>th</sup> September  
Stand 1, Gallery 25-26  
**BOLOGNA, ITALY**



27<sup>th</sup>-30<sup>th</sup> September  
Stand E2, Hall 7  
**VERONA, ITALY**



**VERONICA SQUINZI.**  
Global Development  
Director

# MAPEI IS GROWING ON THE PROMISING LATIN AMERICAN MARKET

**Mapei Group's strategy of internationalisation** continues in Latin America: on the 6<sup>th</sup> of February this year, the acquisition of **the Colombian company, Productos Bronco S.A.**, was completed. With this acquisition Mapei strengthens and expands its presence on the Latin American market, which at the moment is considered to be one of the most promising, where Colombia stands out for its interesting rates of growth.

It is worth noting that Colombia, after Brazil and Mexico, is the third most important economy in Latin America

and, according to "The Economist", over the next five years the Colombian economy is expected to have the sixth largest rate of growth in the world. GDP increased by 4.6% in 2014, by 3.1% in 2015 and, for 2016, it settled at 2.2%.

The acquisition of the company, whose head office is in Medellín, is part of the Group's strategy to penetrate new markets, a road to internationalisation that, on the one hand, enables the company to interpret regional needs more effectively and develop products in line with specific local demand and standards, while on the



other hand promotes the optimisation of logistics; an issue which should never be considered of secondary importance, particularly for those types of products which are heavily penalised by transport costs.

It is by remaining faithful to this logic that **the Group has also consolidated its presence and continues to invest and grow in Mexico, following the acquisition of Texzim in 2016**, a Mexican company specialised in the production of adhesives and other products for the building industry.

Mexico also has a completely new appeal in terms of

attractiveness, similar to that of Colombia, sustained by positive trends in GDP and a real-estate market going through a period of sustained growth, not so much in terms of prices, but rather in terms of demand and in the quality of new products.

Mapei's growth around the world is targeted and has never stopped. Confirmation of its position as one of the principle actors on the world stage of products for the building industry, with a leading, innovative role in promoting, and often even anticipating, the needs of every market.



# MAPEI IN MESSICO

## NEW OFFICES AND AMBITIOUS PROJECTS FOR THE FUTURE

A booming subsidiary company on one of the most dynamic markets in Latin America. Mapei de México has been operating from its head offices in Querétaro, in the central part of the country, since 2010.

Mapei de México has 113 staff working at its headquarters in Querétaro - where there is also a distribution centre and training centre - and its factories in Zimapán (in central Mexico) and Cancún (in the south-east of the country), strategically located to serve the whole of Mexico in the most efficient way. The company mainly manufactures products for installing ceramics and stone materials, as well as wall coatings. There are, however, plans to extend these lines, simultaneously launching other new products, such as admixtures for concrete and systems for repairing concrete and underground constructions.

Here, in greater detail, are the other products that will soon be on sale on the Mexican market:

- modified polymer-based mortars (ULTRALEFT LFT, ULTRAFLEX 2);

- cement-based mortars (KERACOLOR FF);
- mortars for repairing concrete (PLANITOP X, PLANITOP XS, PLANIGROUT 712, MAPECEM QUICKPATCH, TILT FINISH);
- (PLANISEAL 88) waterproofing products
- admixtures for concrete (DYNAMON XTEND W500R, DYNAMON NRG 1014);
- additives for shotcrete (MAPEQUICK AFK 888);
- products for underground constructions (MAPEQUICK CBS SYSTEM 1, MAPEI DUST STOP).

Mapei de México plans to invest €3.4 million to extend its own plants and triple its output to reach this ambitious goal. When the works are completed by the beginning of 2018, the production area will cover approximately 2000 m<sup>2</sup>.

But that is not all. The training programme, designed for builders, distributors, installers and staff at sales outlets, is currently being expanded: the training centre in Querétaro will provide courses and seminars for professionals from all over the country, partly through partnerships with important institutes like the Mexican Institute for Cement and Concrete (IMCYC), Guanajuato University and Querétaro Technological Institute. The Mapei Tour program is also being started up, which will allow company technicians to provide qualified training at workplaces.



**ON THE FACING PAGE.** The new headquarters of Mapei de México in Querétaro, in central Mexico

**ABOVE.** The ribbon-cutting ceremony during the opening event held on 4<sup>th</sup> May.

**LEFT.** During the evening Jesús Ocampo, General Manager of Mapei de México and Rolf Manser, Manager of the Mapei Group for Latin America held their speeches.

**BELOW.** Guests have visited the offices and the showroom. At the end of the evening "loyalty prizes" were awarded to some customers.



## A SUCCESSFUL OPENING

On 4<sup>th</sup> May, Mapei de México celebrated the opening of its new offices in grand style, organising a party attended by about 150 people, including customers, authorities, members of local building associations and journalists. The Italian consul, Mr. Bellei, was also in attendance.

The aim of the event was to reinforce Mapei's position as a global leader in the building industry, emphasising how the company has grown in Mexico and the opportunities available to local customers. It was also a great opportunity to once again celebrate Mapei's 80<sup>th</sup> anniversary this year: the evening began with a video clip about this important anniversary and the video of Mapei de México. That was followed by speeches by the General Manager, Jesús Ocampo, and Manager for Latin America, Rolf Manser, and a video recording of the president of the Mapei Group, Giorgio Squinzi, sending his greetings. After the ribbon-cutting ceremony, "loyalty prizes" were awarded to 10 customers followed by a cocktail party.

The evening then took a more "technical" turn with the exhibition of selected product systems and a trip to the showroom of the new offices. A successful opening ceremony that strengthened existing bonds and laid the foundations for fruitful new business partnerships.





# MEXICAN PROJECTS

PRESTIGIOUS JOBSITES FOR A GROWING COMPANY



## MONTERREY STADIUM GUADALUPE

Two years ago the Estadio BBVA Bancomer Stadium in Guadalupe, Nuevo León, known also as the Estadio de Fútbol Monterrey, replaced the old Estadio Tecnológico, which by then had become obsolete and too small for the local Monterrey CF football club.

It is the most expensive stadium ever built in Mexico (200 million dollars) and the most modern in the whole of Latin America.

The structure of the steel roof has a shape similar to that of the armoured shell of an armadillo and the stadium was officially inaugurated in 2015. It has seating for more than 51,000 spectators, 5,000 of which are reserved for a local club, and 324 suites inside the stadium. The complex extends over a total surface area of 165,000 m<sup>2</sup> and has several restaurants, offices and a shopping precinct. Here the challenge thrown down to Mapei Technical Services was to find a series of solutions to the problems encountered on site, which included the appearance of cracks on the surface of the concrete used to form the steps and terraces of the stadium.

The cracks were repaired with PLANIBOND CR-50 epoxy resin and the surfaces were then levelled with MAPECEM QUICK PATCH mortar mixed with PLANICRETE AC latex. Vibrations in the structure could lead to the detachment of material from the surfaces so, when making the mix for the screeds, they used MAPECEM special hydraulic screed binder mixed with sand. The substrates had previously been treated with PLANICRETE AC and PLANIBOND EBA. ULTRAFLEX LFT adhesive and FLEXCOLOR CQ grouting mortar were used to install the ceramic tiles and granite slabs in the lobby and in the entrance areas. The floors in the basement and in the changing rooms were coated with the cementitious MAPEFLOOR system after treating the substrates, which had a problem with damp, with PLANISEAL VS osmotic mortar. Mapei also supplied MAPECRETE HARD SB to protect and strengthen concrete surfaces, PLANISEAL RAPID JOINT 15 to seal the internal joints and MAPELASTIC AQUADEFENSE ready-mixed, elastic liquid membrane to waterproof various areas.

### TECHNICAL DATA

**Monterrey Stadium,** Guadalupe, Nuevo León (Mexico)

**Period of construction:** 2010-2015

**Period of intervention:** 2014-2015

**Intervention by Mapei:** supplying products for cracks repair, for screeds preparation, for waterproofing and for installing ceramic and granite tiles

**Former Project:** Christopher Lee, Juan Andrés Vergara

**Project:** Populous and VF&O Arquitectos

**Project Manager:** PMP Consultores

**Contractor:** Eduardo Baker Rdz

**Installer Company:** Presskom

**Mapei Distributor:** COMACSA

**Mapei Coordinator:** Juan Isaác Gutiérrez (Mapei de México)

### MAPEI PRODUCTS

Flexcolor CQ\*, Mapecem, Mapecem Quick Patch\*, Mapecrete Hard SB\*, Mapeflex P1 SL\*, Mapefloor CPU MF, Mapefloor I 300, Mapelastic AquaDefence, Planibond EBA\*, Planicrete AC, Planiseal CR-50\*, Planiseal Rapid Joint 15\*, Planiseal VS\*, Ultraflex LFT\*

\*These products are distributed in the Mexican market by Mapei de México



# FASHION DRIVE SHOPPING CENTER SAN PEDRO GARZA GARCÍA, N.L.



The Fashion Drive Shopping Center is one of the largest in Northern Mexico and is located in the San Pedro Garza García district, a suburb of Monterrey, the capital city of the Nuevo León state. It has more than 4 million inhabitants, a higher per-capita income than the national average and the highest GDP in Mexico. These are the reasons which led the real-estate company Grupo Inmobiliario Monterrey (GIM) to invest more than 3 billion Pesos into the development of this shopping centre.

There are various activities on offer in the Fashion Drive Centre, from shopping to hospitality and enjoyment. The activities are spread over 4 levels and the shopping centre offers its clients more than 80 different shops and boutiques, a Business Hotel, a fitness centre, 17 cinema screens with seating for more than 2,000 viewers, a medical centre and 8 restaurants.

The architectural structure of the shopping centre (with a total surface area of 33,485 m<sup>2</sup>) is formed by a "skeleton" of steel and concrete.

The challenge for the contractor awarded the tender to install the floor coverings, was to guarantee that the vibrations of this type of structure wouldn't damage the floors and cause them to crack.

This is why Mapei Technical Services recommended using ULTRAFLEX LFT adhesive to install the stone slabs in the corridors, FLEXCOLOR CQ mortar to fill the grout lines and MAPESIL T to seal the joints. A coat of ULTRACARE PENETRATING PLUS was then applied to protect the stone, which is used to

prevent stains and marks forming on natural stone installed on internal and external surfaces. The marble flooring in the showrooms was bonded to a steel substrate and, to guarantee its stability over the years, PLANICRETE W was used.

## TECHNICAL DATA

**Fashion Drive**, San Pedro Garza García/Nuevo León (Mexico)

**Period of Construction:** 2014-2017

**Period of Intervention:** 2016-2017

**Intervention by Mapei:** supplying products for the installation, grouting and protection of stone slabs

**Project:** Eudelio Garza

**Client:** Grupo GIM

**Installer Company:** OQA

Construcciones

**Mapei Distributor:** COMACSA

**Mapei Coordinator:** Juan Isaác Gutiérrez (Mapei de México)

## MAPEI PRODUCTS

Flexcolor CQ\*, Mapesil T\*, Planicrete W\*, Ultracare Penetrating Plus\*, Ultraflex LFT\*

\*These products are distributed in the Mexican market by Mapei de México





# CANAL GENERAL TUNNEL CHALCO VALLEY

Once the Canal General Tunnel has been completed, it will considerably reduce the risk of flooding not only in the Chalco Valley area, which has a population of around 4 million inhabitants, but also in the metropolitan area of Mexico City, as well as improve the safety and wellbeing of the entire area, particularly during the rainy season.

The underground tunnel will be 7.9 kilometres long, with a diameter of 6.7 metres during the tunnelling phase and 5 metres once the walls have been completed. The initial investment was around 1,139 million Pesos and the infrastructure is scheduled to be handed over at the end of 2017.

The tunnelling operations were carried out by two full-section EPB (Earth Pressure Balanced) type TBM's (Tunnel Boring Machines), specifically designed to operate in areas with water under high pressure.

Mapei also took part in various stages of the site work, with technical assistance for the contractors to help choose the most suitable products and the supply of admixtures and waterproofing products specifically formulated for tunnelling work with TBM's.

The following products were used: MAPEBLOX T tail seal grease to block the inflow of material from the tail end of the machine, MAPEBLOX H bearing sealant, MAPEBLOX PKG packing sealant for TBM shield tunnelling and MAPEBLOX EP grease for TBM tunnelling to help minimise the wear of the boring head, at high temperatures in presence of water.

Due to the presence of water on the walls of the tunnel the job was particularly difficult, that is why MAPEDRILL M1 synthetic liquid polymer for water-based fluids in tunnelling and drilling work, was also used.



Other products used included RESFOAM SS 75 polyurethane resin to help waterproof and stabilise the earth, PLANITOP X mortar to repair and skim the walls of the tunnel, DYNAMON NRG 1014 super-plasticiser and accelerator for concrete, DYNAMON XTEND W500 R acrylic plasticiser for concrete and DYNAMON SW modified acrylic polymer-based admixture.

### TECHNICAL DATA

**Canal General Tunnel,** Valle de Chalco (Mexico)

**Period of Construction:** 2015-2017

**Period of Intervention:** 2016-2017

**Intervention by Mapei:** supplying tunneling additives for TBM

**Project:** CONIISA

**Client:** CONAGUA (Comisión Nacional del Agua)

**Works Direction:** Carlos de la Mora and Pedro Barrera

**Contractor:** Ingenieros Civiles Asociados S.A. de C.V.

### Mapei Coordinator:

Francisco González Gómez (Mapei de Mexico), Alessandro Boscaro (Mapei SpA)

### MAPEI PRODUCTS

Dynamon NRG 1014, Dynamon Xtend W 500 R, Dynamon SW, Mapeblox EP, Mapeblox H, Mapeblox PKG, Mapeblox T, Mapedrill M1, Planitop X\*, Resfoam SS 75\*

\*These products are distributed in the Mexican market by Mapei de México





## NEW RESIDENTIAL DEVELOPMENT QUERETARO

The State of Queretaro, two hours far from Mexico City, has a continuous industrial and business growth index. According to a study carried out in 2013 by the research institute of Sistemas de Inteligencia de Mercados y Opinión, Queretaro is one of the top three favourite states to live in Mexico, thanks to the quality of life it offers, and the number of jobs available. According to the local newspaper, El Universal, 40 new families came to live in Queretaro every day in 2015, and the Mexican Association of Real Estate Professionals calculated that the average had grown to 58 in 2016 to 70 families in 2017.

These figures were confirmed by an increase of 10% in sales on the local housing market over the course of the last year, with 9 out of 10 properties being bought by people from outside the region. Around half of those who move out of Mexico City or the nearby states settle here, which means the Queretaro area is constantly expanding.

Grupo Sadasi, a construction company with more than 40 years of experience specialized in the planning of large residential developments, built 1,950 houses in the State of Querétaro in 2016, divided into four different areas (Paseos del Bosque, Tres Cantos, Los Encinos and Los Héroes).

This imposing project (around 1,650,000 m<sup>2</sup> of homes built) also included the use of various products supplied by Mapei. The surface of the internal walls was finished with MORTEX EMPLASTE mortar and the internal and external walls of all the houses were primed with SELLANATURE. As far as the wall finishes were concerned, the internal ones were treated with FIBERTEX HIDROFUGO while the external ones were coated with MORTEX HIDROFUGO - white colour was chosen for both products. The façades of the houses were partially dressed with slabs of stone bonded with PEGAZIM PORCELÁNICO adhesive.



### TECHNICAL DATA

**New Residential Areas,** Queretaro (Mexico)

**Year of Construction:** 2016

**Year of Intervention:** 2016

**Intervention by Mapei:** supplying products for the wall protection, coating and stone installation

**Project:** Gabriel Montero

**Client:** Grupo Sadasi

**Works Direction:** Omar Linares

**Contractor:** Grupo Sadasi

**Installer Company:** Ingeniería y Construcciones

Gutiérrez

**Mapei Coordinator:** Susana Martínez (Mapei de México)

### MAPEI PRODUCTS

Fibertex Hidrofugo\*, Mortex Hidrofugo\*, Mortex Emplaste\*, Pegazim Porcelánico\*, Sellanature\*

\*These products are distributed in the Mexican market by Mapei de México



# MAPEI IN COLOMBIA

GROWTH PROSPECTS FOR A COMPANY WITH A WELL-ESTABLISHED REPUTATION

Last February Mapei acquired Productos Bronco S.A., specialists in the manufacture of waterproofing products, sealants and coating products, allowing the company to break onto the Colombian market under the name Mapei Colombia S.A.S.

The company was set up in the best possible circumstances, not just because this is an extremely promising national market with interesting growth rates and high quality standards, but also because Mapei Colombia can benefit from the recognisability and authoritativeness Bronco has gained on the Colombian market from 1983 to the present day, thanks to its quality products, excellent distribution network and efficient customer service.

Mapei Colombia's headquarters are in La Estrella (close to Medellín) to the north-west of the capital Bogotá, where the administration and logistics offices are located, along with powder and liquid manufacturing plants. Eleven sales outlets, five of which also operating as distribution centres, are also scattered across the entire nation. 177 staff and technicians work at the headquarters, sales outlets and offices in Bogotá, Cali, Barranquilla, Cartagena and Pereira.



## 360° EXPANSION

Primary among Mapei Colombia's numerous projects is the extending of its range of products, which currently consists of waterproofing agents, admixtures, coating products, sealants, grouting mortars and adhesives for ceramics.

The aim is to cover - in the medium and long-term - all of the head company's different categories of products, increasing production and improving the sales network.

The customer assistance and training services will also be reinforced. In 2016 Bronco organised 235 training courses right across Colombia involving over 3000 people. It also held seminars at various universities and worked with local authorities to train students in technical matters connected with corporate business. Mapei Colombia plans to extend and broaden these training operations by introducing new courses focusing on products that will be gradually launched on the market.



**MAPEI AT THE TRADE FAIR**

This year Mapei Colombia took part in Expoconstrucción & Expodiseño Trade Fair held in Bogotá from 15<sup>th</sup>-21<sup>st</sup> of May, which was attended by over 60,000 visitors and had approximately 600 exhibitors.

The communication campaign at the company stand set out to launch the Mapei and Polyglass brands on the Colombian market and present Bronco as an associate company of an Italian multinational company. Mapei technicians at the stand handled all kinds of requests and answered miscellaneous questions, underlining the fact that Mapei's acquisition of Bronco will result in some extremely specialist high-quality products being launched on the market. Customer response was enthusiastic and keen to get involved: over half of the visitors asked for more specific information about the various products.

The Mapei Colombia staff was delighted with the results of the trade fair and is ready to launch these new high-performance products on the market.

**ON THE FACING PAGE.**

The staff of Productos Bronco S.A. gathering for a picture. Productos Bronco S.A is a Colombian company which has been acquired by the Mapei Group last February, thus becoming Mapei Colombia S.A.S.

**ABOVE AND ON THE RIGHT.** Some pictures taken in the manufacturing plant of Mapei Colombia in La Estrella, near Medellín.

**BELOW.** Mapei Colombia's stand at Expoconstrucción & Expodiseño trade fair, held in Bogotá from 15<sup>th</sup> to 21<sup>st</sup> May.



**➤ Mapei Colombia will introduce on the market extremely specialized, high-end products**



# CURAZAO RESIDENTIAL COMPLEX

## BELLO, ANTIOQUIA

The Curazao residential complex is in the northern part of Bello, a town near Medellín, and comprises 5 towers, each one 21 storeys high with apartments of various sizes and a further two underground floors for parking. Residents also have use of a gymnasium, a swimming pool for adults and children, a wellness zone, play areas and an artificial grass pitch. In 2015 the main contractor asked Mapei Technical Services for their help

to overcome a problem with the coloured finish used for the first tower. The red colour specified by the client needed to be exactly the same as the one used for the first two completed towers and a series of laboratory tests had to be carried out to find a perfect match. The final result, which was created by using BRONCO FACHADA water-repellent acrylic paint, received the seal of approval from both the client and the designer, who were won over by the paint's resistance to water and sunlight. The good results obtained with the paint convinced the contractor to use a series of other products proposed by Mapei for the other towers, starting with BRONCO SISMO RESISTENTE anti-seismic structural sealant.

Other products used included BRONCO HIDROFUGO, a transparent, protective waterproofing product applied on brick and concrete façades to prevent the formation of mildew and efflorescence, BRONCOELASTICO, a waterproofing product for roofs with the capacity to reduce the temperature of surfaces, BRONCOSIL, a waterproofing agent for cement, PASTA RESANE acrylic grout for repairing surfaces and PINTURA TRÁFICO, a high-bond acrylic paint for marking out road surfaces in carparks.

**TECHNICAL DATA**  
**Curazao Residential Complex**, Bello, Antioquia (Colombia)  
**Period of intervention:** 2015-2017

**Intervention by Mapei:** supply of products to waterproof external surfaces, seal structural joints and to paint and protect façades

**Works Director:** Juan Sebastian Jaramillo

**Client:** Ingenieria Inmobiliaria

**Main contractor:** Ménsula Ingenieros

**Installation contractor:** Bronco Aplicaciones S.A.S.  
**Mapei coordinator:** Adriana Maria Escobar (Mapei Colombia S.A.S.)

**MAPEI PRODUCTS**  
Bronco Fachada\*, Bronco Hidrofugo\*, Bronco Sismo Resistente\*, Broncoelastico\*, Broncosil\*, Pasta Resane\* and Pintura Tráfico\*

\*Manufactured and distributed on the Colombian market by Mapei Colombia S.A.S.



## MAYORCA SHOPPING CENTRE SABANETA

Colombia has an estimated 2016 population of 48.6 million, out of which 21% concentrated in Bogotá and Medellín and there are many shopping centres in or around these cities. The Mayorca Shopping Centre is located near Medellín, next to Itagüí metro station. The municipalities of Sabaneta, Envigado, Itagüí, Caldas, La Estrella and San Antonio de Prado compose its area of influence, with a population of approximately 700,000 inhabitants. It was built in 2002, and for now it is the only one in the southern part of the Aburra Valley, an area made up of the municipalities of Barbosa, Girardota, Copacabana, Bello, Medellín, Envigado, Itagüí, Sabaneta, La Estrella and Caldas. Being located in the south, it has large influx of people.

The Mayorca Mega Plaza is twelve storeys high and was built in three phases: in November 2002 the first 80 shops were opened along with an open carpark and a covered carpark with around 1,000 parking spaces and then, in 2007, a 7-screen cinema complex was inaugurated, as well as a further 120 shops, a dining area with various restaurants, banks, a casino, a fitness centre, an auditorium and an entrance leading directly from Itagüí underground railway network.

The third and final phase of the shopping centre (which now covers a total surface area of 228,000 m<sup>2</sup>) was completed last year with the inauguration of a second building opposite the previous one with more shops and office space, which is connected to the first building by two covered walkways. Mapei supplied the products used to seal the joints in the internal walls. Mapei technicians proposed the use of BRONCO SISMO RESISTENTE sealant by Productos Bronco, a Colombian company specialised in the manufacture of waterproofing products, sealants and coating products acquired by Mapei Group in 2017. BRONCO SISMO RESISTENTE is a highly adhesive, highly elastic, granular acrylic mastic sealant used to seal structural joints in areas unsuitable for traditional mortar. Joints sealed with this particular product have the capacity to absorb movements caused by seismic activity.

### TECHNICAL DATA

**Mayorca Mega Plaza Shopping Centre**, Sabaneta, Antioquia, (Colombia)

**Construction Period:** 2002-2016

**Period of Intervention:** 2014-2016

### Intervention by Mapei:

supply of products to form anti-seismic seals in structural joints

**Works Director:** Sergio Arango

**Client:** Mayorca Inversiones Y Pacta

### Main Contractors:

Consorcio Convel S.A.S. and Muros y Techos S.A.S.

### Mapei Distributor:

Comercial de Empaques y Papeles S.A.S.

**Mapei Coordinator:** Pedro García Paz (Mapei Colombia)

### MAPEI PRODUCTS USED

Bronco Sismo Resistente\*

\*Manufactured and distributed on the Colombian market by Mapei Colombia S.A.S.



# NEWS FROM THE GUGGENHEIM

CHANGES AT THE TOP AT THE PEGGY GUGGENHEIM COLLECTION OF VENICE: THE PERFECT OCCASION TO TAKE STOCK OF THE MUSEUM'S INTERVENTIONS AND NEW ACQUISITIONS







Philip Rylands has left the role of Director of the Peggy Guggenheim Collection of Venice. The new director will be Karole P.B. Vail, member of the Guggenheim curatorial staff since 1997 and the nephew of Peggy Guggenheim.



© Matteo de Fina

Philip Rylands has left the twin role of Director of the Peggy Guggenheim Collection of Venice and the Solomon R. Guggenheim Foundation's director for Italy. His career started in 1979 when he joined the organisation to become administrator of the Collection immediately after the death of Peggy Guggenheim. Nominated vice director in 1986 and then director in 2000, in 2009 Rylands also took over as the Guggenheim Foundation's director for Italy. From 1986 he also administered the activities of the American Pavilion at the Venice Biennale on behalf of the Peggy Guggenheim Collection.

During his time as director the Collection became the most visited museum of modern and contemporary art in Italy and the second most visited tourist attraction in Venice after Palazzo Ducale. In 2015 the Venice art collection had more than 400,000 visitors, with 70% of them coming from overseas.

Numerous objectives were achieved under his direction, from the restoration of Palazzo Venier dei Leoni to the foundation of the Peggy Guggenheim Collection Internship Program.

To know who would be nominated as his successor we had to wait until the beginning of June when Richard Armstrong, director of the Solomon R. Guggenheim Foundation, announced the name of the new director of the Peggy Guggenheim Collection of Venice and the Italian section of the Foundation of the same name: Karole P.B. Vail, member of the Guggenheim curatorial staff since 1997 and the nephew of Peggy Guggenheim.

Armstrong pointed out that Karole Vail will be only the second director in the history of the Peggy Guggenheim Collection after Philip Rylands, who managed the museum for 37 years and will be made director emeritus.

After studying art in London, Karole Vail worked as an archivist and researcher at the publisher Centro Di in Florence and as vice curator for various freelance projects. More recently, in collaboration with the Art Institute of Chicago and the Los Angeles County Museum of Art, he was curator at the Guggenheim Museum of New York for the retrospective exhibition "Moholy-Nagy: Future Present", and is collaborating in the organisation of an important exhibition on Alberto Giacometti, which will be presented in New York in 2018.

### **NEW SPACES AT THE VENICE MUSEUM**

The Solomon R. Guggenheim Foundation, created in 1937 in New York by the uncle of Peggy Guggenheim to run his museum inside the famous spiral building designed by the architect



© David Heald

Frank Lloyd Wright, is dedicated to the promotion of knowledge and interest for art, particularly modern and contemporary art, through exhibitions, courses, research initiatives and publications. The network of Guggenheim museums, which was founded in the 1970's when the New York museum was joined by the Peggy Guggenheim Collection of Venice, extended even further over the years with the addition of the Guggenheim Museum Bilbao in 1997 and the Guggenheim Abu Dhabi, which is currently in the design phase.

Exclusive property of the Guggenheim Foundation, the Collection overlooks Canal Grande. Once inside, visitors can admire the private art collection of Peggy Guggenheim, ex-wife of the painter Max Ernst, who also had her own private residence here. The works of art on display include representative pieces of American modernism and Italian futurism, as well as cubist art, surrealism and abstract expressionism by artists of the calibre of Picasso, Dalí, Magritte, Brancusi and Pollock.

Originally owned by Doris Castlerosse, the building was bought

by Peggy Guggenheim in 1949. Then, in 1958, the portico pavilion, known as the "the barchessa", was added to improve visibility of this rich collection. 1980, few months after her death, marked the inauguration of the Collection to honour her name under the administration of the Solomon R. Guggenheim Foundation, which prepared a programme to create more suitable display spaces along with their relative service areas, indispensable in order to run a museum efficiently. The various interventions carried out over the years had to take into consideration the opening times of the museum, which meant all the work had to be specifically targeted, functional and spread over a long period of time.

2000 marked the start of a structured project to reorganise the entire area, which included building a new entrance, extending the exhibition space around the terrace and along the foundations, transferring the administration offices to the top floor of the building on Rio delle Torreselle, rationalising and upgrading all the plant systems required to run the complex, rearranging

## 25 YEARS OF GUGGENHEIM INTRAPRESÆ

2 guggenheim  
5 intrapresæ

"The Peggy Guggenheim Collection is cultural enterprise that works. A lot of Italian museums could learn something from the Guggenheim school", declared Giovanna Forlanelli, vice president of the Luigi Rovati Foundation and general manager of Rottapharm Biotech, during

her speech to celebrate the 25<sup>th</sup> anniversary of Guggenheim Intrapresæ, held on the 15<sup>th</sup> of March this year at the Bologna Business School. In fact, the aim of "Manufacturers of culture. From the Guggenheim Intrapresæ model to new forms of corporate creativity", the key moment during the anniversary celebrations, starting with the experience and model behind the Guggenheim Intrapresæ association, was to present a case history of

innovative entrepreneurs, while also examining the role of creativity in industrial processes.

Guggenheim Intrapresæ is the most significant and best known Italian programme of private support for a museum, with the backing of important national and multinational companies – including Mapei – and has made it possible for a dynamic and original presentation of the Peggy Guggenheim Collection to be planned. Guggenheim

**LEFT.** One of the rooms of the museum areas.  
**RIGHT.** The refurbished Peggy Guggenheim Café.  
**BELOW.** The façade on the Rio delle Torreselle.

the routes taken by the visitors and museum personnel to allow for maximum flexibility when organising exhibitions and changing the layout of the external communicating paths between the various gardens positioned at different levels, as well as installing lifts for visitors with disabilities.

### MAPEI AND GUGGENHEIM: AN ENDURING PARTNERSHIP

In 2017 the extension work on the exhibition space was completed, which included the acquisition in 2015 of an area of garden and a small building adjacent to the current home of the Collection. This area was used to create two exhibition rooms called “Project Rooms”, a veranda was converted into an exhibition space for sculptures with a relaxation area for visitors, an Education Centre with laboratories and workshops for children and adults was built and the Peggy Guggenheim Café was refurbished. This brightly lit space, with its large veranda and sculpture garden, was created thanks to contributions from member companies of the Guggenheim Intrapresæ association, such as Mapei Group. All the interventions carried out inside the Peggy Guggenheim Collection were designed by the TheMa architects studio, founded by Giacomo di Thiene.

Over the years, the Solomon R. Guggenheim Foundation chose a select group of companies to form the Guggenheim Intrapresæ association, of which Mapei is a member (see box), with which they have established a relationship of mutual cultural collaboration.

The bond between Mapei and the Guggenheim Foundation became firmly established following a series of contributions, the last one being an intervention on the café (*Realtà Mapei International No. 62/2016*) following the renovation work in 2009 on the main façade overlooking Canal Grande and on the façade which opens onto Rio delle Torreselle (*Realtà Mapei International No. 31/2010*).



Intrapresæ was founded in 1992 when, for the first time ever in Italy, a group of companies came up with the idea of combining excellence in their particular sector with the passion for art that characterised those companies, making their support for the activities of the Peggy Guggenheim Collection a crowning achievement. Since then the association has continued to grow and the group is now made up of 22 companies: Acqua di Parma, Aermec, Allegrini, Apice,

Arclinea, Arper, Distilleria Nardini, Florim, Foodies Bros, Campari Group, Hangar Design Group, European Institute of Design, MST-Maccaferri Group, Reggiani Illuminazione, René Caovilla, Rubelli, Safilo Group, Swatch, Orsoni and Mapei Group.

As Michela Bondardo, the creator of Guggenheim Intrapresæ, was eager to stress during the meeting in Bologna, “The idea behind Intrapresæ was to go beyond the concept of sponsor.

The aim was to find a sustainable source for the museum and to give companies the opportunity to create a new line of thought.”

The 25<sup>th</sup> anniversary was also the perfect chance to update the overall image of the project by giving it a new name - Guggenheim Intrapresæ - a new payoff – *Let’s share a passion. Let’s design the future* – and a new logo that rotates around a “+” sign, a symbol of unity and growth.



## THE 150 YEARS OF FRANK LLOYD WRIGHT AND THE GUGGENHEIM MUSEUM

The collaboration with Mapei started in 2007-2008 with the restoration work on the prestigious Solomon R. Guggenheim Museum of New York (*Realtà Mapei International No. 27/2009*), for which the architect Frank Lloyd Wright worked from 1943 until 1959, when it was inaugurated. This year marks the 150<sup>th</sup> anniversary of the birth of this great American architect, a key figure in the modernist movement and, undoubtedly, one of the most influential designers of the XX century, along with Mies van der Rohe, Le Corbusier and Alvar Aalto.

During his long professional career Wright, who died in 1959 at the age of 92, worked on around 1,100 different projects, only half of which were actually completed, including some of the most iconic examples of contemporary architecture: the Fallingwater House in 1937, the Price Tower, his only skyscraper, in 1952 and the Guggenheim Museum of New York. Numerous events have been organised in the United States to celebrate this anniversary, including the one to be held at the Museum of Modern Art-MoMA in New York, which will open the archives of the Wright Foundation, while the Guggenheim Museum kicked off its celebrations on the 8<sup>th</sup> of June, Wright's birthday, with free tours of the building, lessons on the history of architecture and a display of archive photos of the building under construction.

The museum may rightly claim to be the sum of all the work of Lloyd Wright – unique for the form of its internal and external lines and its structural conception, but also for its intrinsic fragility: in fact, in 45 years, it has been restored 7 times.

And if today it is possible to admire this building without the signs left by time, it is all down to the most recent restoration work, which started in 2005 and was completed in 2008 for

an overall cost of 30 million dollars. Restoration work which was preceded by 3 years of surveys, studies and analyses to identify the problems and find the best solutions.

Mapei was chosen directly by Integrated Conservation Resources, the company charged with the task of choosing the products and systems to be applied during the restoration work, which singled out Mapei as the best partner to tackle such a long, difficult operation. The intervention started with the removal of 11 layers of paint and continued, where required, with demolition of the concrete to expose the rebar, which was then passivated with MAPEFER 1K.

The concrete was integrated with PLANITOP XS thixotropic mortar and the cracks were sealed with MAPLEFEX AC4. All the external surfaces were then protected with MAPELASTIC two-component cementitious mortar, which is used to protect and waterproof concrete, with the more delicate areas reinforced with MAPETEX SEL micro-perforated fabric. Because of the movements the structure of the museum is subjected to, the finishing operation was carried out using ELASTOCOLOR RASANTE coloured, fibre-reinforced skimming compound applied by spray. The surfaces of the walls at street level were protected firstly with a cycle of MAPELASTIC, followed by a coat of ELASTOCOLOR WATERPROOF elastic paint, which is suitable for direct contact with water. Where necessary, the anti-graffiti product WALLGARD GRAFFITI BARRIER was also applied.

Once the restoration work had been completed, the Guggenheim Museum was officially reopened to the public on the 22<sup>nd</sup> of September 2008, in time to celebrate the 50<sup>th</sup> anniversary of its construction, thanks also to the contribution given by Mapei to the conservation of what is quite rightly considered one of the great masterpieces of modern architecture.

The BreBeMi motorway link  
Brescia-Bergamo-Milan, Italy

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# HISTORIC HOUSES

OLD HOUSES, PARKS AND CASTLES MAKE UP A SIGNIFICANT PART OF ITALY'S HISTORICAL-ARCHITECTURAL HERITAGE AND ARE A BIG ATTRACTION FOR BOTH ITALIAN AND FOREIGN TOURISTS

The Italian tourism industry generates €335 billion a year: not that much for a country that has such a vast cultural-historical and architectural heritage. 9 million people are employed in this industry, while €5 billion are invested in looking after the entire heritage.

The ADSI (Italian Historic Houses Association) looks after the nation's historical-cultural heritage. Set up in 1977 along the lines of other similar associations - including the more famous Historic Houses Association in Great Britain - it brings together the owners of castles and stately homes and helps raise awareness about the conservation, enhancement and management of private historic houses.

To celebrate its 40<sup>th</sup> anniversary, the ADSI organised a roundtable on the subject of "Culture and business: Italy's finest look to the future" held in Rome on 6<sup>th</sup> May. The topics looked at during the day's proceedings concerned the responsibility for safeguarding and enhancing Italy's cultural, historical and architectural heritage. The discussion involved Dorina Bianchi, under-secretary of the Ministry of Culture and Tourism, Edith Gabrielli, director head of the Lazio Museum Centre, Rodolphe de Loos-Corswarem, president of the European Historic Houses Association, Giorgia Abeltino, director of Google Arts & Culture, Armando Branchini, vice president of the Altagamma Foundation, Pietro Salini, managing director of Salini Impregilo, and

Diego Visconti, president of the Italian Accenture Foundation.

The convention was opened by Gaddo della Gherardesca, national president of the ADSI, who noted that "40 years is an extremely important landmark for an association set up in the 1970s to protect privately owned historical-architectural assets in an extremely complex socio-cultural context".

Nowadays, owners are actively involved in the communities and territories where their historical houses are located, promoting cultural, social and economic enterprises.

As Moroello Diaz Della Vittoria Pallavicini, president of ADSI, pointed out, since the 1970s the Association has voiced its own concerns to the public administration, starting with the issue of taxation, because protecting and conserving an historical house calls for real long-term commitment in terms of both time and money.

There are approximately 31,000 protected historical houses providing a notable input to the tourism industry, particularly if helped by the government. Dorina Bianchi pointed out that "we have taken on the challenge of creating wealth from culture and the ADSI is part of this project. Politics must help owners grasp the extent of the wealth that ordinary citizens can contribute to our country. We need to begin a conversation with the Ministry of Finance to discuss detaxation, like for instance the so-called "ArtBonus", which for the time being only concerns public as-



sets, but should be extended to include safeguarded privately-owned historic houses”.

Armando Branchini, vice president of the Altagamma Foundation, which has joined together businesses representing Italy’s high culture and art industry since 1992, talked about the luxury goods industry, whose income has risen from €10 billion in 1985 to €1.1 trillion today and is likely to increase by 3-4% over the coming years: “The ADSI is part of Altagamma and we aim to work together to make sure business culture can be extended to include the owners of historic houses. We need to move on from property management to business management, while maintaining the founder’s original spirit and treating our own business like a permanent start-up, regardless of income”.

Edith Gabrielli, director of the Lazio Museum Centre with 43 museums under its jurisdiction, reasserted the need to be flexible and the importance of networking with other enterprises in the surrounding area, while Rodolphe de Looz-Corswarem, president of the European Historic Houses Association, pointed out that historic houses, which are such a familiar sight around Europe, “create plenty of employment and are doing a lot for young people.” Italy is currently the second most popular tourist destination in Europe after France, but it needs to regain top position.

A combination of culture, tradition and business enterprise: this is the mix underlying works of Italian genius, according to Pietro Salini, the managing director of Salini Impreglio, a company with a turnover of €7 billion that employs 36,000 people all over the world, who underlined the fact that “if Italy wants to make significant progress, it must invest in infrastructure, decide what kind of country it wants to be, what kind of tourism it wants to have, what taxes it intends to impose on historic houses and assets, and what kind of industry it wants to support”.

Diego Visconti, president of the Italian Accenture Foundation, which, in partnership with ADSI, has created ARSLab, a school-work scheme providing job experience and training schemes for students, talked about the goal of creating projects to promote historic houses and their surrounding land, emphasising that the necessary funds are, indeed, available. The latest European plans allocate €40 billion to Italy, and ten-

## » SAFEGUARDING AND ENHANCING CULTURAL, HISTORICAL AND ARCHITECTURAL HERITAGE WERE THE MAIN TOPICS OF THE ROUNDTABLE

ders always make reference to culture and art. Nevertheless, a platform needs to be created to promote and sell the very best Italian products and produce from all areas and publicise Italian tourist routes through proper product information campaigns.

Outlining the information given in the 2013 Oxford Economic Report, the director of Google Arts & Culture, Giorgia Abeltino, noted that online content is the primary source of information for anybody planning a trip. Online tourism accounts for 3% of the GDP and employment. Digitising the cultural heritage would facilitate “conservation and digital use in the future, dem-

ocratising access to culture and making digital technology a driver of growth in the cultural industry”. Accurate and full information about everything people can visit must be available on the web to attract tourists.

Davide Bandera, Mapei’s Product Manager for its line of products for masonry restoration, spoke at the conference about Mapei’s products for renovating and upgrading historic buildings,

most specifically the MAPE-ANTIQUE range that has physical-mechanical properties similar to those of plaster and brick mortars used in the past.

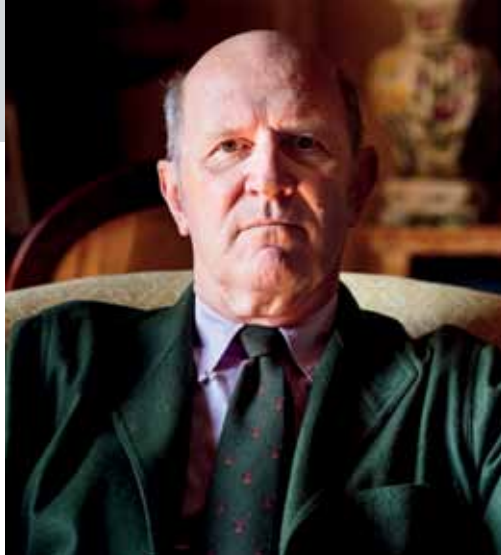
## GRAND TOUR AROUND ITALY’S HISTORIC HOUSES

As has been customary for a number of years now, the Italian Historic Houses Association’s ‘National Day’ was held on 21<sup>st</sup> May, when 200 period houses, castles, villas, farmsteads, courtyards and gardens all over Italy opened up free of charge. Some of them had never been seen before, such as the medieval castle in Montemagno near Asti, the biggest in the Piedmont region, in Northern Italy. Historic houses, parks and castles make up a significant part of Italy’s historical-architectural heritage and are a big attraction for both Italian and foreign tourists, not just in the major cities but, above all, in less well-known towns and villages. They are located along routes that provide the chance to discover and taste traditional types of food and drink of the highest quality.

To celebrate its 40<sup>th</sup> anniversary this year, the ADSI Foundation decided to allow middle-school children to act as guides, helping owners show visitors around some truly fascinating historical locations, many of which not very well known. This project came about thanks to a partnership arranged in 2016 between MIUR-Ministry of Education, Universities and Research as part of school-job experience schemes. The “National Day”, whose sponsors included the Mapei Group, provides the chance to raise public awareness about the importance of conserving and enhancing private cultural assets that come under special protection, whose conservation is the responsibility of the owners themselves.

## Gaddo della Gherardesca

National President  
of the Italian Historic  
Houses Association



# “WE NEED TO BE ROMANTIC, BUT ALSO A LITTLE BIT CRAZY”

GADDO DELLA GHERADESCA DISCUSSES HIS COMMITMENT TO MAINTAIN HISTORIC HOUSES

*Last year Gaddo della Gherardesca was appointed the national president of the Italian Historic Houses Association for the three-year period from 2016-2019. A member of one of the oldest families in Tuscany and a descendant of Count Ugolino, this Florentine nobleman has also been a member of the National Board of the Italian Historic Houses Association and the Italian representative to the European Historic Houses Association since 2015. An expert in the media and communication, he is also the vice president of PRS, a publicity agency that operates in the satellite television, radio and web industry.*

**Last year you were appointed president of the A.D.S.I. – Italian Historic Houses Association. Can you explain what this association does?**

On 27<sup>th</sup> April 2016, feeling a deep sense of responsibility I enthusiastically accepted the honour and duty of leading the Italian Historic Houses Association, whose mission it has been for the last 40 years to protect, enhance and manage private Italian historical-cultural assets. A very cutting-edge issue, since the beauty and sheer wealth of our cultural heritage are finally at the focus of public debate and opinion, even though – however – we are well aware that much needs to be done to ensure the constitutional importance of privately-owned historical/artistic assets is duly acknowledged.

**During the convention on “Culture and business: Italy’s finest look to the future”, which was held in Rome on 6<sup>th</sup> May, you claimed that “we need to be romantic, but also a little bit crazy to hold onto properties like**

**ours”. Can you explain what you meant?**

I believe what I said sums up the attitude of owners of property declared to be of historical-artistic interest: romantic, because only the kind of “love” you have for your own house can justify the sheer energy and devotion it takes to look after not just the “walls” but also the heart and soul of your home - crazy, because this is certainly a significant gamble, but only by taking chances and defying logic and rationality can important results be achieved.

**Renovating and conserving old buildings is not just important in relation to history and art, most significantly it means enhancing them and turning them into an important driver for the Italian economy. Do you agree or disagree with that?**

I most certainly agree, because it is not just a matter of looking after this heritage, to which the owners have always dedicated their best efforts, as far as they could, but also, as you said, of enhancing it, so that it can really express its huge financial potential: hospitality, tourism, quality food/drink production, building, the landscape and craft all revolve around a system that already plays an important part in the local economy and which, if properly supported, could grow exponentially.

**Italy’s historical-artistic heritage – if handled and promoted properly - could have enormous financial potential. So, you think that hospitality, food/drink tourism and the builtscapes could, potentially, have notable implications on the surrounding territory?**



That is what we hope, indeed it is our aim - through constructive dialogue with the institutions and also local financial operators - to work together to find new ways of developing new projects that help the nation grow.

**No more property tax on historic houses, an extending of the 'ArtBonus' detaxation to include private operators, land registration reform: these are just some of the issues personally involving the owners of thousands of historic buildings that are, indeed, protected but extremely expensive to maintain. As an association, what kind of relations do you have with national and local institutions and what kind of help do they provide?**

Bearing in mind that our country is going through a financial recession, a crisis in its overall system and, if I may say so, an ethical-cultural crisis, we ought to consider ourselves lucky because the institutions have, for some time now, been paying us more attention and being more aware of our needs, so that we have been able to jointly work out how we might improve our situation.

Taxation is certainly the key issue, but not because the owners of historic houses expect unfair privileges, but we need to understand how much they already have to pay and the difficulties they now find themselves in. We must rid our heads of the idea that historic properties are "luxury" or "rich people's assets" that need to be taxed differently (if not at higher rates), because we need to make it clear that easing the taxation on a protected property does not mean "helping the owner" but, rather, helping the "cultural heritage" and allowing the owner of a property to conserve, protect and pass it on to future generations. Of course, we have been aware for years that this is an uphill battle and that our properties, which are subject to special constraints, are increasingly expensive to maintain and manage, generate lower profits and no longer receive the financing referred to in the Cultural Heritage Code. To which we need to add constant rises in taxation and, in some cases and



Pojega Gardens of Villa Rizzardi, Nergrar, Verona, Italy

» WHAT WE HOPE IS INDEED OUR AIM – A CONSTRUCTIVE DIALOGUE WITH THE INSTITUTIONS AND ALSO LOCAL FINANCIAL OPERATORS

under certain circumstances, the inevitable decline and abandonment of the properties in question.

**In Italy only 13% of tourist bookings are made online compared to 24% across Europe. The Web is now an indispensable means of promotion and of informing the world about Italy's culture, history and traditions, including historic houses. Do you have any projects in this realm?**

In 1970 Italy was the world's leading cultural tourist destination, but now we are only ranked fifth, despite being the country with most UNESCO sites in the world.

I think the cause of all this is that we are no longer as competitive as we used to be. The A.D.S.I. has set up a website called [www.dimorestoricheitaliane.it](http://www.dimorestoricheitaliane.it) aimed at promoting nothing but monumental historic properties. At the same time as creating this website, we are trying to get our associates to adopt a more aggressive approach to online promotion, so that Italy's private cultural heritage is more appealing to international travellers. Despite being a relatively recent project, in just under two years we have managed to reach average monthly online traffic of 25,000 different visitors, according to search engine ratings.

**In the third millennium, tourism will not settle for "just" history and monuments. It needs infrastructures and services of the appropriate standard - from Wi-Fi to air-conditioning, sound insulation and modern finishing touches - to compete with other countries around the world. What do you think about that?**

I think that is quite right, because while we ought to look back into the past so as not to forget our roots or our historical heritage, at the same time we need to comply with the increasing demands of international travellers. Our historic houses meet the demand for experiential tourism and, at the same time, can also provide all the appropriate comforts and services.



Courtyard inside Palazzo Gondi, Florence, Italy

# DESIGNING RENOVATION PROJECTS

INTERVIEW TO DAVIDE BANDERA, PRODUCT  
MANAGER FOR MASONRY RESTORATION

**The current crisis in the Italian building industry has been partially off-set by the demand for restoration and redevelopment work on existing buildings, including those of historical interest. What are the main phases you have to deal with when redeveloping an historical building?**

Very often we tend to assume we are perfectly aware of all the phases that need to be carried out when we start working on a restoration and conservative renovation project for a building. Unfortunately this is only true in part, because sometimes we can overlook certain important issues at the start of the project, such as the importance of carrying out a visual analysis of the site (phase I) to gather all the useful information you need about the building and the materials it was built from, as well as its state of conservation.

Where necessary, if you need to obtain a deeper understanding of the structure to be restored, you can carry out a diagnostic analysis (phase II) through numerous, complex chemical analyses to identify the level of damage in the materials and the causes behind the damage in order to approach and direct the restoration and conservative renovation work in the most appropriate way.

Phase III, on the other hand, concerns the choice of materials. This phase is of vital importance in restoration work, in that it must be carried out so that the chosen product and/or system is reversible and compatible with the materials originally used to construct the building. The term "reversible" is normally used to identify a process that can be inverted and, as far as a product is concerned, it means it may be removed without causing

any damage to the structure. The term "compatible", on the other hand, is associated with a product and identifies its chemical-physical and elastic-mechanical affinity to the properties of the original materials. Choosing a product incompatible with the materials and construction techniques used in the past can result in an intervention being unsuccessful or its sudden deterioration. The products closest to meeting these requirements are lime-based ones because they respect traditional construction methods, in that all buildings of historical and artistic interest were built using these types of materials. Allow me to digress briefly. There are numerous products available on the market which are defined as lime-based, but then you find they contain Portland cement. The use of cement in restoration work should be limited to those areas where you require different performance properties than those possible using lime only and, in all cases, where there is no risk of damaging the masonry or surfaces, which sometimes are decorated with frescoes. Saying a product is lime-based does not necessarily exclude the possibility of there being cement in that particular product. A more precise indication of the type of binder contained in the product can be had by reading its material safety data sheet, which must contain a list of all the components contained in it that require a hazard warning symbol. Phase IV, which is no less important than the previous ones, is the phase in which the application techniques and methods are defined. This depends on the type of product chosen, which must be applied correctly and according to the recommendations supplied by the manufacturer.

**The starting point when designing a restoration intervention, therefore, must be a visual analysis of the construction materials. In order to identify the most appropriate solutions, which diagnostic and fact-finding tests need to be carried out on the substrates and on their degree of deterioration?**

Various diagnostic tests are available, some of which can be quite complex, and they may be carried out directly in situ or in specialised laboratories, in this case on samples taken on site. These analyses are carried out to define the degree of deterioration of a building and its causes. In other cases, just to mention a couple of examples, analyses are carried out to determine the chemical and physical composition of render or masonry mortar, as well as the presence of soluble salts. Other analyses may be carried out to establish the stratigraphic layout of the skimming compound or paint that has been applied over the years or the nature of the pigment originally used.

In Mapei there is a cutting-edge Research & Development laboratory, equipped with highly sophisticated instruments, where the tests mentioned previously are often carried out, as well as many others to provide additional support for design engineers and prescribers of technical specifications, or even restoration companies. The Mapei R&D laboratories often collaborate with universities and the academic world in general, as well as with engineers and technicians from heritage bodies and local councils.

**For years Mapei Group has been proposing a range of solutions and systems suitable for consolidating and designing historic and artistic structures in order to respect the historical value of the original materials and the type of substrate. If you had to mention just one, which range of products and systems would come to mind?**

In 1992 Mapei introduced a range of products called MAPE-ANTIQUÉ, a term used to indicate a series of materials for historical buildings.

Over the years, this range has been extended until we now have a complete range of products and systems dedicated to the consolidation, restoration,

strengthening and protection of existing buildings, including those of historical and artistic interest under the protection of the National Trust.

The products form the MAPE-ANTIQUÉ line, which are made from lime and Eco-Pozzolan and are totally cement-free, have very similar characteristics to the masonry mortars and renders used in the past and, as such, are more compatible with any type of original structure. Unlike mortars normally used for repair work, such as those made from hydraulic lime and natural hydraulic lime which have levels of residual "free lime" for a longer period of time (see UNI 459-1), the reaction between lime and Eco-Pozzolan leads to the formation of compounds, whereby the "free lime" is completely "consumed" after just a few days, so that restoration mortar and injected slurries are completely resistant to the soluble salts present in masonry. It is quite the opposite for the mortars mentioned above which, even though they be sufficiently porous and mechanically compatible with the materials originally used, they are not immune to the risk of chemical aggression from soluble salts dissolved in the water.

Indeed, the "free lime" contained in these materials could react chemically with the soluble salts in the masonry and with other components contained in the original mortar, or in mortar used for previous repair work, causing the render to crack and/or crumble.

With the products in the MAPE-ANTIQUÉ line, on the other hand, this phenomenon does not occur because there is absolutely no "free lime". From a morphological point of view, it is thanks to this particular characteristic that the structure of the products from the MAPE-ANTIQUÉ is similar to that of "historical mortar" made from aerated lime and Pozzolan, but which only forms after a number of years.

**One of the problems with historical buildings is the damage to their masonry by aggressive atmospheric agents or the crumbling action of salts and damp. Mapei has developed a series of highly innovative products and systems to tackle these types of problem. Which are they and when may they be applied?**

Amongst the most widely used tech-

niques adopted in the presence of capillary rising damp and soluble salts are horizontal chemical barriers and the application of dehumidifying render.

The chemical barrier technique consists of injecting chemical products into the masonry and these are normally silane-based or siloxane-based, an example of which is our MAPESTOP. This product has the capacity to form a "horizontal barrier", which has a water-repelling effect against the rising damp, without having any effect on the levels of breathability within the masonry itself. Apart from "blocking" the damp below the treated zone, these formulations must also have properties whereby the salts are blocked and transformed into non-soluble products to prevent them migrating within the structure. These products are injected at low pressure using a suitable injection pump, or by gravity using diffusers (the MAPESTOP KIT DIFFUSION, for example). One of the limits with this type of intervention is that you can never be absolutely certain that the chemical spreads inside the structure and, as a result, all the porosity in the bricks, stone, tuff and mortar used to construct the wall may not have been hydrophobised. This means there could be the "passage", albeit somewhat limited, of the damp and soluble salts through the points where the chemical barrier wasn't able to penetrate, going on to damage the layer of render if it has been made from traditional cementitious-based or lime and cement-based mortar.

As far as dehumidifying render is concerned, on the other hand, it is made in such a way that it "helps" or "encourages" the water to migrate towards the outside and stops it stagnating inside the masonry. To obtain this condition, all dehumidifying renders are made up of macro-pores within their structure which work together with the pre-existing porosity and considerably increase the natural breathability and evaporation capacity of the masonry.

Another important characteristic that dehumidifying renders must possess is their chemical resistance to soluble salts dissolved in the water or, in the case of buildings close to the sea, to salts coming from the outside in the form of marine aerosol. This latter property is extremely important in determining the durability

of the intervention. So, using traditional render that is not chemically resistant to salts leads to their immediate deterioration. Some of the products from the MAPE-ANTIQUÉ line are in the category of macro-porous dehumidifying renders resistant to soluble salts.

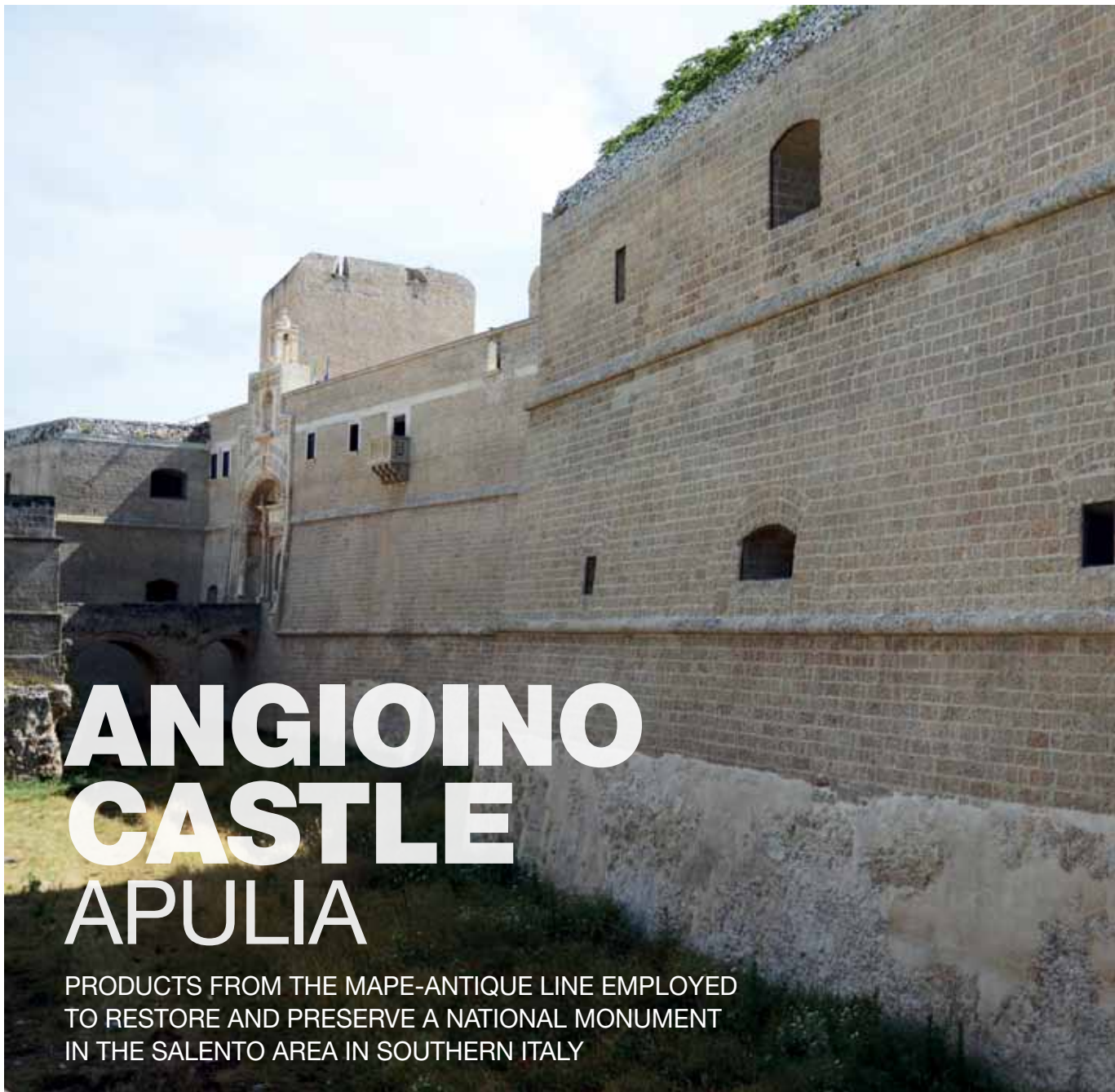
**So is the use of these products also recommended for buildings in lagoon environments or close to the sea?**

Absolutely! In every city close to the sea, certain buildings will be more affected than others by both damp and soluble salts, either present in the seawater or transported in the form of marine aerosol onto the façades of the buildings.

In such cases, the application of dehumidifying render becomes an indispensable condition to guarantee the durability of restoration work. This type of system, however, must be extended to the entire façade, in that the maximum chemical resistance to soluble salts must also be guaranteed in the areas above those actually affected by capillary rising damp. The salts, in fact, are transported by marine aerosol and are deposited over the entire façade and if you use render that isn't resistant to the chemical aggression induced by the chlorides in the seawater, the quality of the intervention would be compromised.

Another aspect that should never be underestimated is which finishing product to use and it must be one that is appropriate for the cycle. The optimum solution is a mineral-based finish that does not impede the passage of water vapour from inside the masonry towards the outside and that does not affect the characteristics and properties of the dehumidifying render used. This category includes the finishes from the SILEXCOLOR line, potassium silicate-based products that comply with DIN 18363 standards.

An alternative to these products, in those cases where a finish with a higher level of breathability and water-repellence is required, would be to use one of the coloured paints or coatings from the SILAN-COLOR line, siloxane-based products which are applied in thin coats. This last category of finishes offer more protection for the underlying masonry and render and impede the ingress of marine aerosol.



# ANGIOINO CASTLE APULIA

PRODUCTS FROM THE MAPE-ANTIQUE LINE EMPLOYED  
TO RESTORE AND PRESERVE A NATIONAL MONUMENT  
IN THE SALENTO AREA IN SOUTHERN ITALY

In the ancient town centre of Copertino, a small town in the Salento area in the Apulia region of South-East Italy, the castle, dating back to the Norman-Suevian era, was extended and given a more refined look during the Angevin period.

The castle is one of the most important and evocative architectural structures in the Salento area. It has been a national monument since 1886 and was granted a protection order in 1955. The imposing structure we see today was expanded in 1540 according to the principles of military architecture of the time following the discovery of gunpowder. Around the external perimeter of the castle there are 90 slits, or cannoniers, with cavities so the cannons could be moved around more easily, while a defensive moat dug out of the rocks at the base of the castle complete its fortress-like appearance.

The Castle was also a refined dwelling place, as testified by

the Renaissance balcony with an openwork balustrade and its lavish portal. The decorative features of the castle, carved from local limestone, were then stuccoed at a later date to protect them from the wind which, over the centuries, had eroded them. Since the Castle is a typically commemorative structure, there is a collection of images of the various dynasties of kings, queens and feudal lords that have followed over the centuries in Copertino.

From the picturesque internal atrium you can enjoy a full view of the Angevin menfolk. If you continue up the Renaissance staircase leading to the noble floor, you can admire the fifteenth century family chapel named in honour of St. Maria Magdalena. Also worthy of mention are the long, wide galleries running inside the perimeter of the fortress, which today are used to hold cultural events.



**FACING PAGE AND ABOVE.** Angioino Castle in Copertino (Lecce, Italy) upon completion of the work. Mapei brand products were supplied to restore the walls.

**ABOVE.** The castle before commencing work. Before starting the intervention, an in-depth study was carried out to analyse the problems with the walls and identify the most appropriate solutions.

### UNDERSTANDING, RESTORING, PROMOTING

Right from the initial design phase, Mapei took part in the conservation and protection work on the stone surfaces of the external curtain walls of Angioino Castle in Copertino, including the north-east side with its two bastions.

The intervention had several objectives:

- to understand their current condition and problems
- the conservation of the natural overtones and the materic and historic values of the monument
- to have a full and complete perception of the monument so that any visible restoration work would not disturb its overall image
- to guarantee that the intervention would be durable and cost effective to ensure the future conservation of the monument
- the intervention itself would be in keeping with other work carried out in previous years.

### 3D LASER SCANNING ANALYSIS

A full analysis of the castle was carried out using a three-dimensional laser scanner, enabling a complete, high-definition picture of the monument to be obtained and of both the curtain walls on which the work was to be carried out and of all the internal rooms.

An in-depth study of the materials used specifically for the facing walls was carried out by the Mapei Laboratories, who performed a preliminary testing campaign in order to characterise the chemical and physical properties of the stone and mortar used to build the facing walls, identify the cause of the damage and choose the most appropriate products.

Based on the results of the analysis, restoration work on the

curtain walls was carried out by constantly balancing the choices made by the design engineer, the restorer and the technicians involved in the project. The method used to clean away the black encrustations, replacement of the stones in the walls that had been damaged beyond repair, the mixes and colours of the pointing mortars and the properties, compositions and textures of the replacement materials could only be finalised once samples had been taken during the various work phases so that the quality of the work, including from an aesthetic point of view, could be optimised.

### CLEANING AND CONSOLIDATION

The first step was to remove all the harmful bacterial organisms and wash the surfaces of the stone by applying SILAN-COLOR CLEANER PLUS high penetration cleaning solution to completely remove the algae and fungus that had damaged the surfaces of the walls. All the damaged mortar between the blocks forming the exposed-finish walls was removed with hand and power tools to create a sound, compact substrate. The surface of the tuff walls then needed to be thoroughly cleaned with high pressure water jets to remove the layers of microorganisms and any traces of materials used during previous work. The surface of the portal was consolidated with CONSOLIDANTE 8020, a ready-mixed, reversible liquid product made from vinyl-versatate copolymers in a hydroalcoholic mix, characterised by its capacity to penetrate deeply into porous substrates and its excellent resistance to alkalis and UV rays. The molecules of the copolymers are extremely small which also makes the product suitable for consolidating substrates with very small pores.



**PHOTOS 1 and 2.** A preliminary analysis was carried out to get a more in-depth understanding of the materials used to build the facing walls.

**PHOTO 3.** MAPE-ANTIQUÉ ALLETTAMENTO was used for "patching" and "cladding" and to repoint the exposed walls.

**PHOTO 4.** In the final phase of the work, the facing walls were protected with ANTIPLUVIOL S, a transparent, water-repellent, silane and siloxane-based impregnator.

### RESTORATION OF THE WALLS

Restoration of the walls using the "patching" and "cladding" techniques was required in the more badly damaged areas of the facing wall, where blocks were either missing or cracked and where the joints between different portions of the same wall had been damaged. All these operations were carried out using MAPE-ANTIQUÉ ALLETTAMENTO, a ready-mixed, cement-free, powdered building mortar made from natural hydraulic lime, Eco-Pozzolan, natural sand, special additives and microfibers according to a formula developed in the Mapei research laboratories. The joints between the blocks of tuff were also pointed with MAPE-ANTIQUÉ ALLETTAMENTO.

In order to provide adequate protection to the facing walls and ensure the durability of the restoration work, the final and decisive phase of the intervention was to treat the exposed stones with the water-repelling product ANTIPLUVIOL S, a transparent, water-repellent finish made from silanes and siloxanes in solvent, which penetrates deep down into the substrate and reacts with the natural moisture inside walls to form a hydrophobic layer that repels water.

We would like to remind you that the products from the MAPE-ANTIQUÉ line used for this restoration work were chosen on the basis of the results obtained from an analysis of sample pieces. Products with a high added value to perform work of excellence which stand out from all the other materials available on the market because, apart from having similar physical and chemical characteristics to the products originally used, they also have high physical and chemical resistance to aggressive salts such as sulphates, chlorides and nitrates.



**TO THE LEFT.** The lavish portal to the castle: its decorative surrounds are carved from local limestone.

#### TECHNICAL DATA

**Castello Angioino,** Copertino (Lecce, Italy)

**Period of Construction:** 1540

**Period of Intervention:** 2014-2016

**Original Project:** Evangelista Menga

**Intervention by Mapei:** supplying products for masonry restoration

**Client:** Regional Secretary of MIBACT Puglia

**Sole Responsibility of the**

**Intervention:** Francesco Longobardi

**Final project and coordination:**

Augusto Ressa

**Scientific Direction:** Caterina Ragusa, Laura Masiello

**Works Direction:** Augusto Ressa

**Safety coordination during the**

**works:** Francesco De Sanctis

**Jobsite Technical Director:** Antonio Perrotta

**Works Direction Office:** Achille Ciccì, Gabriella Imperiale

**Contractor:** Valore Restauri Srl (Nardò, Lecce)

**Safety coordination while designing:**

Pietro Ciammarusti

**Architectural Design:** Giovanni Vincenti, Salvatore Caputi Lambrenghi, Angela Verroca

**Structural Design:** Luigi Nigro

**Mechanical System Design:** Angelo Gentile

**Electrical System Design:** Federico W. Basti

**Artistic Restoration:** Vincenzo De Bellis, Maurizio Lorenzoni

**Mapei Distributor:** Gruppo Petulicchio Srl / Edil VN Srl (Nardò, Lecce)

**Mapei Coordinator:** Davide Bandera, Achille Carcagni, Giammario Dispoto, Luca Carcagni, Danilo De Matteis (Mapei SpA)

**Photos and videos:** Foto Video Spot – Lizzanello (Lecce, Italy)

#### MAPEI PRODUCTS

**Masonry restoration:** Silancolor Cleaner Plus, Consolidante 8020, Mape-Antique Allettamento, Antipluvial S

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

#### IN THE SPOTLIGHT

##### MAPE-ANTIQUE ALLETTAMENTO

Breathable, salt-resistant masonry mortar made from natural hydraulic lime and Eco-Pozzolan for pointing and building “exposed” internal and external load-bearing and buffer walls made from stone, bricks, tuff and mixed materials, including those in buildings of historical and artistic interest.

Suitable for building new load-bearing and buffer walls or rebuilding existing walls, when mixed with water MAPE-ANTIQUE ALLETTAMENTO forms a

salt-resistant building mortar with a plastic-thixotropic consistency with good workability when applied by trowel.

It can contribute up to **4 points** to obtain 4 the LEED certification





# CASA PUIG I CADAFALCH ARGENTONA

AN EXAMPLE OF MODERNIST ARCHITECTURE, THE SUMMER RESIDENCE OF ARCHITECT PUIG HAS BEEN DECLARED A NATIONAL MONUMENT AND COMPLETELY RESTORED

The architect Josep Puig i Cadafalch was one of the main exponents of Catalan Modernism, the corresponding movement of the Italian Liberty, the French Art Nouveau and the English Modern Style movements. A pupil of Lluís Domènech i Montaner, his work may be divided into three different periods: the first was his Modernist period, where the architectural model was inspired by the artistic movement in Catalonia which, between the end of the 1800's and the start of the 1900's, influenced every field of expressionism, from architecture to the decorative arts. It was characterised by irregular forms and floral decorations and its leading exponent was Antonio Gaudí. His second period was known as

Rational Idealism, an architectural trend based on the tastes of the new Spanish bourgeoisie with buildings along more rational lines. His third period, known as "Monumentalism" – with lines that draw on the influence of Roman architecture and combine them with features typical of Andalusia – dates back to the period in which Puig was the architect who followed the design and construction of the Universal Exposition in Barcelona in 1929. During the Spanish Civil War he lived in exile in Paris where he taught in various universities. When he returned to Spain the Franco regime, which was strongly opposed to Modernism, would not allow him to practice his profession as an architect and he was only permit-

ted to work on the restoration of historical buildings and monuments. In 1942 he was nominated President of the Institut d'Estudis Catalans, a position he held right up until the day he passed away.

## **FROM HOME TO MUSEUM: THE HISTORY OF CASA PUIG**

Declared a monument of national interest in 1993, Casa Puig is located in the Catalan town of Argenton. Built between 1897 and 1905 by Puig in Modernist style, who designed it as a summer residence for his family, the villa stands out for its sinuous forms and the ornate façade with battlements, gargoyles and turrets and movement created by its covered eaves. After years of neglect and





**LEFT.** A view of the completed work.

**PHOTO 1.** Casa Puig as it was before work commenced.

**PHOTO 2.** The reproductions of the original battlements positioned on the façade.

**PHOTO 3.** MAPENET EM CONNECTOR connectors placed in position on the surface.

**PHOTO 4.** MAPENET EM 30 mesh placed in position and fastened to the surface and around the base of the battlements before casting MAPE-ANTIQUE HI-FLOW.

being left abandoned, in 2012 Argentona Town Council managed to purchase the villa from the heirs of Josep Puig with the idea of turning it into a home-museum to exhibit all the work carried out by the Catalan architect. Once the funds had been obtained in 2015 it was possible to make a start on the redevelopment work. The house had been neglected and was in a worrying state of advanced deterioration. Consolidation work was urgently required on the entire structure, starting with rebuilding the badly deteriorated roof, to prevent further damage to the inside of the house. The construction is divided into a basement floor of around 30 m<sup>2</sup>, a ground floor measuring 227 m<sup>2</sup>, a first floor measuring 148 m<sup>2</sup> and a second floor of around 118 m<sup>2</sup>.

The interventions were concentrated on the consolidation of the masonry and repairs to the decorative features which, over the years, had been damaged by the weather and general neglect. The roof was repaired, the brickwork battlements were removed, restored and put back into place, the terraces, which were by then almost hanging off the building, were knocked down and rebuilt in the same style and the gazebos overlooking Plaça del Vendre were restored. The second phase consisted of repair work on the external façades.

## CUTTING-EDGE RESTORATION WORK

With a mandate from the Departamento de Cultura y Patrimonio della Generalitat de Catalunya, Mapei Technical Services worked alongside the Universitat Politècnica de Catalunya on a project to develop concrete reinforced with glass fibres and proposed using MAPE-ANTIQUE HI-FLOW castable masonry mortar reinforced with MAPEROD G pultruded glass fibre rods. The results obtained were so encouraging that Studio Zazurca Arquitectos, which was also involved in the restoration work on Casa Puig, proposed using Mapei products to strengthen the battlements on the roof. The triangular battlements on the façade, which by now had become badly deteriorated, were removed and the missing parts were reintegrated, following which they were repositioned along the perimeter wall of the building. The first step of the strengthening work was to apply (FRP) MAPENET EM 30 pre-impregnated, alkali-resistant mesh on the internal surfaces and around the base of

the battlements. The mesh - fastened to the vertical surfaces with MAPENET EM CONNECTOR – was applied in combination with MAPE-ANTIQUE HI-FLOW to strengthen the structure. The solution proposed by Mapei Technical Services, to apply a complete consolidation system comprising “reinforced” structural render on the mechanically weak masonry, managed to completely fulfil the expectations of the design engineers.

### TECHNICAL DATA

**La Casa Puig i Cadafalch, Home-Museum** – Argentona, Barcelona (Spain)

**Designer:** Josep Puig i Cadafalch

**Construction Period:** 1897-1905

**Period of Intervention:** 2015-2016

**Intervention by Mapei:** supply of products for the structural consolidation of the façade battlements

**Client:** Patrimoni Cultural

**Designers:** Mercè Zazurca, Oriol Solanes and César Sánchez (Studio Mercè Zazurca), Miquel Àngel Sala, (Masala Consultors SL), Joan Ramón Rossell (Laboratori de Materials, UPC)

**Main Contractor:** Urcotex Immobiliaria, SLU

**Mapei Distributor:** Bigmat Dorotea S.A.

**Mapei Coordinators:** Joan Lleal and Toni Catllà (Mapei Spain)

### MAPEI PRODUCTS

Consolidation of roof elements: Mape-Antique Hi-Flow, Mapenet EM 30 and Mapenet EM Connector

For further information on these products see our website at [www.mapei.es](http://www.mapei.es) and [www.mapei.com](http://www.mapei.com)



# RECTOR'S PALACE IN ZADAR

NUMEROUS MAPEI SOLUTIONS HAVE HELPED THE RECTOR'S PALACE TO SHINE WITH NEW SPLENDOUR

The recently restored historical palace in Zadar was, historically, a favourite gathering place of Zadar's residents. The Rector's Palace was first mentioned in a 1288 document where it was called the Municipal Palace. Archaeological research works revealed parts of the building were from the Roman and Late Antique period - a 1278 document suggests that the apartment was rented to the rector.

The Palace's large hall served many different purposes over the years - during the Roman period the hall acted as the Town Hall

housing the City council, during the 16<sup>th</sup> century it served as a courtroom, 18<sup>th</sup> century a theatre, 19<sup>th</sup> century as a playground and entertainment hall and during the 20<sup>th</sup> century as a concert hall. The Palace's continuous change in purpose has over the years, been reflected in the Palace's name - Municipal, Judicial, Governor's, Government, Provincial Palace, and House of Culture. The palace was completely renovated in the 16<sup>th</sup>. As it was expanded, repaired and upgraded, it also gained new stylistic features.

In 1804, the palace was restored to the designs of the classicistic architect Frane Zavoro. The renovation completely changed the look of the northern façade and subjected it to new technical and aesthetic achievements in the construction, systematic and symmetrical spirit of classicism. The restoration was completed in 1807 and was the first accomplished classicistic project in Zadar. A further restoration occurred at the end of the 19<sup>th</sup> century, when the west façade and its surroundings were significantly altered.

For many years, the Rector's Palace refined the cultural life of the city of Zadar through its multiple functions. The Palace contained the city library, a music and ballet school, a concert hall, Zadar radio station and a mixed choir, Petar Zoranić, as well as the girls' choir *Juraj Baraković*. During the Homeland War in 1991, the Rector's Palace was shelled out from one of the city's barracks, causing great damage and significantly disrupting the statics of the building - enough to become unusable. The first demanding static and building renovation of the post-war reconstruction began in 1999.

## **SIGNIFICANT CULTURAL AND HISTORICAL COMPLEX**

In December 2011, architects Letilović and Pedišić won the prestigious prize of the Association of Croatian Architects Bernardo Bernardi for the architectural solution of the Provisional Exhibition Hall, Rector's Palace in Zadar, in the category of the most successful achievement in the area of design and interior decoration in 2011 in Croatia. In 2014 began the implementation of the *Project Reconstruction and tourist valorisation of cultural and historical complex of the Rector's Palace* financed by the Structural Funds' grant of the European Union. At the end of last year, reconstruction work was completed, and the Rector's Palace had a new life.

In the preparation and realization of the Project, the Technical Department of the Mapei Croatia participated with proposals for solutions for various types of works; from the renovation of capillary damp and the waterproofing of the facility through the renovation of masonry structures with injection mixtures and the installation of floor systems to the installation of the dehumidifying and finishing decorative render systems. Mapei's systems and solutions have been accepted by both the designer and the contractor and have become part preserving of this fascinating historic building.

## **COMPLETE RESTORATION WITH A VAPOUR PERMEABLE SYSTEM**

In order to prepare the substrate, all layers of the existing render were removed to the brick or stone itself, unbound and slightly bound materials between joints were also removed.



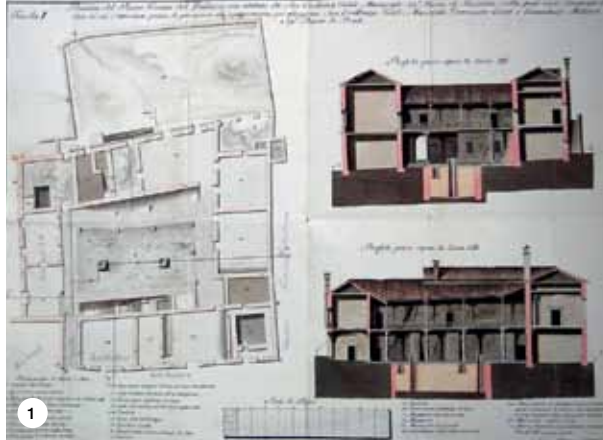
Afterwards all surfaces were washed with low pressure water jets, removing saltpetre on the surface and any remaining loose parts and dust. This procedure was repeated several times until the substrate cleanliness was achieved. The joints were filled with render based on natural hydraulic lime and Eco-Pozzolan MAPE-ANTIQUE INTONACO NHL. Before application, the substrate was saturated with water in order to prevent substrate absorbing the water from the render. The excess water evaporated so the substrate remained saturated, with no visible droplets of water on the surface. MAPE-ANTIQUE INTONACO NHL was applied with trowel to the substrate with light pressure between the masonry elements to improve adhesion. The excess of render was removed immediately after installation, including constructive masonry elements and joints were cleaned with a damp sponge and brush.

### APPLICATION OF A VAPOUR-PERMEABLE RENDER

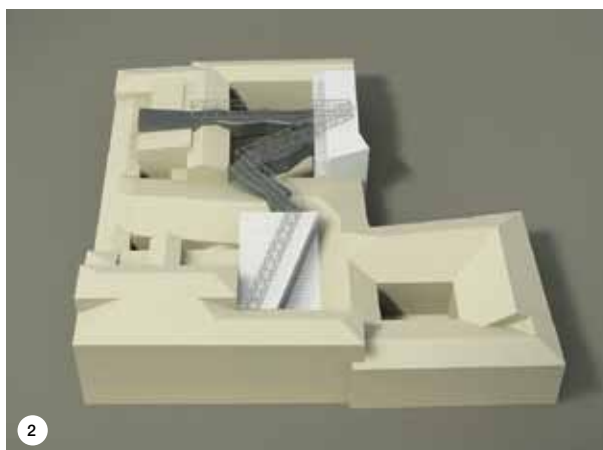
The inside surfaces of the masonry and part of the façade walls were treated with a vapour-permeable render from the POROMAP line. Before the application of a vapour-permeable render based on natural hydraulic lime and Eco-Pozzolan, it was necessary to saturate the substrate with water in order to prevent absorbing the water from the render. A salt-resistant, underlay mortar POROMAP RINZAFFO MACCHINA was applied to the prepared wall. The underlay mortar had been applied before the dehumidifying and insulating render POROMAP INTONACO MACCHINA in a thickness of 5 mm. Thereafter, with a rendering machine, in the thickness of 20 - 30 mm was applied POROMAP INTONACO MACCHINA, a ready-mixed powdered mortar for dehumidifying and insulating render used for renovating stone and brick masonry deteriorated by the presence of damp. The finishing fine granulation mortar POROMAP FINITURA was applied by hand to the preformed POROMAP INTONACO MACCHINA layer. Before applying mortar POROMAP FINITURA the bottom layer of render with a rougher texture had been well-washed with water and the excess water was eliminated.

### FINISHING COAT

On the cured layers of the vapour-permeable render, a coat of



1



2

FIGURE 1. Zavore's Restoration Project of the Palace of 1804.

FIGURE 2. 3D projection of the Palace Museum according to the idea of architects Letilović and Pedišić.

FIGURE 3. The Rector's Palace during the renovation.

FIGURE 4. Preparation for render application with POROMAP INTONACO MACCHINA mortar.

highly transpirant silicate based primer SILEXCOLOR PRIMER was applied using a roller over the entire surface of the wall in order to uniform the absorption of the substrate. The walls were finally painted with a high-permeable and water-repellent paint on silicate basis SILEXCOLOR PAINT in two coats.

### A COMBINATION OF HISTORY AND CONTEMPORARY FLOOR SOLUTIONS

The designer's request was to unite the historical spirit and use modern flooring solutions in order to retain its historical influ-



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ences whilst adding 21<sup>st</sup> century style to reflect today's world within the Rector's Palace. For this reason, a terrazzo floor system was installed in the exhibition halls on the ground floor of the building and a polyurethane floor systems was installed in communication spaces and bathrooms. As a solution for the terrazzo flooring system, there was proposed, chosen and realized the solution with the ULTRATOP SYSTEM "terrazzo alla Veneziana" effect, which is the closest to the appearance of the historic terrazzo floor that was found in the Rector's Palace. This system is characterized by extremely high resistance to abrasion and mechanical damage, and the installation itself must be carried out on the appropriately prepared substrate. Therefore, the Technical Department of Mapei Croatia provided all the necessary support in designing and creating a substrate screed in order to make it meet the requirements for the installation of the ULTRATOP SYSTEM, "terrazzo alla Veneziana" effect. The greatest peculiarity of this system was obtained by adding aggregates and mixing them both in terms of color and size. In that way there has been achieved a singular and unique visual effect.

**PERFORMANCE OF THE ULTRATOP SYSTEM SYSTEM "TERRAZZO ALLA VENEZIANA" EFFECT**

This ULTRATOP SYSTEM was completed on pre-made cementitious screeds with a compressive strength of 25 MPa, which was first processed with the diamond grinding to obtain an adequate adhesion of 1.5 MPa. To the so prepared substrate was applied the epoxy primer PRIMER SN, which was broadcast until full saturation with quartz sand QUARTZ 1,2. After the primer had been fully bonded, the excess of the quartz sand was removed and a coat of epoxy binder as a primer MAPEFLOOR I 910 was applied. While the product was still fresh, a MAPEFLOOR I 910 binder and a natural aggregate in the ratio of approximately 1 : 20 was applied. After the so prepared substrate was completely dried (24 hours), ULTRATOP was applied. In order to efficiently and effectively complete the smoothing works, the mixture was applied uniformly, making sure that all the voids between the aggregates were completely filled. Three days after the application of the mixture, the grinding and polishing process began to obtain a perfectly smooth and glossy surface resemble the floor coverings made on the model of Venetian Terrazzo. After finishing, a protective coat MAPECRETE STAIN PROTECTION, was applied.

**POLYURETHANE FLOORS FOR COMMUNICATION SPACES AND BATHROOMS**

A new system of polyurethane floors MAPEFLOOR COMFORT SYSTEM AR was installed in the communications corridors and bathrooms. These rooms are characterized by an excellent level of comfort underfoot, high resistance to mechanical aggression, water resistance and low emission of volatile organic compounds. It is exceptionally easy to maintain, making it ideal for use in kindergartens, schools, museums, restaurants and residential areas. The special feature of the system's installation at the Rector's Palace's facility was that the system was installed on a dry screed made of fiber plaster boards. Primer PRIMER SN was first applied to the board and then 150 grams weight fiber glass mesh MAPENET 150 was inserted into the first coating layer. After the first coat has dried, another coat of PRIMER SN was applied and after its drying, it was broadcast by quartz QUARTZ 0.5 mm. On the prepared substrate the aromatic polyurethane resin MAPEFLOOR PU 460 was applied in thickness of 2 mm. Once the resin has dried, the MAPEFLOOR FINISH 58 W coloured top coat was applied. The evacuation areas were coated with the anti-dust epoxy system MAPECOAT I 620 W to provide the surface to be easily maintained. MAPECOAT I 620 W is a two component epoxy coating in water dispersion, with excellent abrasion resistance. It is suitable for low-load spaces.

**IN THE SPOTLIGHT**

**ULTRATOP**  
Ultra-fast setting, self-levelling mortar based on special hydraulic binders for abrasion-resistant flooring. ULTRATOP helps earn up to **3 points** towards **LEED** certification. ULTRATOP may be applied with natural aggregates to form thick layers of 15 to 20 mm as part of the ULTRATOP SYSTEM "terrazzo alla veneziana" effect, which is a system to create polished floors similar to the "terrazzo alla veneziana".

The polishing cycle is carried out using the dry technique with special diamond tipped tools. ULTRATOP SYSTEM "terrazzo alla veneziana" effect floorings are left on view to form finished floors and may be used in the decorative sectors of buildings for civil use.





**FIGURE 5.** Applying the final protective paint SILEXCOLOR.  
**FIGURE 6.** Grinding of ULTRATOP 3 days after installation.  
**FIGURE 7.** Final polishing of the ULTRATOP SYSTEM "terrazzo alla veneziana" effect.  
**IN THIS PAGE.** The Rector's Palace has been officially opened in February this year.



## WATERPROOFING OF THE EXTERIOR WALLS OF THE PALACE

In addition to the waterproofing of the sanitations with the MAPELASTIC SYSTEM, the waterproofing of the external walls also had to be solved. The walls along the southwestern façade of the Rector's Palace, north-west façade of Proveditor's Palace (façades in the park), and part of the façade toward the atrium of Proveditor's Palace on the outside were damp. The capillary damp was solved by injection, it was still necessary to protect the wall approximately to half height of the foundation - that is up to about 50 cm of foundation height. After removing the existing render, treating joints, injecting and capillary damp ceasing, the joints had to be filled and the wall levelled with a high-quality cement-free mortar MAPE-ANTIQUE STRUTTURALE NHL made of natural lime and Eco-Pozzolan. The wall was waterproofed with osmotic cement mortar PLANISEAL 88 applied by brush in three coats. The wall was treated up to a height of 1 m above the finishing elevation of the ground providing a suitable base for finishing the walls.

## BEING A PART OF HISTORY

In our Research & Development Laboratories, we continually improve new products and systems to help restore the most demanding historical buildings. One of these was certainly the Rector's Palace in Zadar, which with its complexity, presented to us a challenge that we Mapei gladly accepted. The strengths of Mapei's R&D facilities enabled Mapei to respond to the project demands by providing innovative solutions. Being part of history is a great honor for Mapei, and the feeling that we have embedded ourselves in such valuable heritage is invaluable.

### TECHNICAL DATA

**Rector's Palace,** Zadar (Croatia)  
**Period of Construction:** 13<sup>th</sup> century  
**Period of the Intervention:** 2014 - 2016  
**Investor:** City of Zadar  
**Designer:** Iva Letilović, B.Sc. Ing. Arh., and Igor Pedišić, B.Sc. Ing. Arh., AB Forum Ltd, Zadar  
**Main contractor:** Krekić avangard Ltd, Zadar  
**Terazzo and Polyurethane Systems Contractor:** Visio Ltd, Osijek

**Performer of paintings:** Color mix, Ltd, Zemunik Donji  
**Mapei distributor:** Krekić avangard Ltd, Zadar  
**Mapei coordinators:** Fausto Ferlin, B.Sc. Ing, Nenad Karalija, Pero Smoljenović, Ing, Alen Sorić

### MAPEI PRODUCTS

**Vapour-permeable renders:** Mape-Antique Intonaco NHL, PoroMap Intonaco Macchina, PoroMap Finitura, PoroMap Rinzafo Macchina, Silexcolor Paint,

Silexcolor Primer  
**Industrial and decorative floors:** Mapecoat I 620 W, Mapecrete Stain Protection, Mapefloor Finish 58 W, Quartz 0.5, Quartz 1.2, Mapefloor I 910, Primer SN, Mapenet 150, Ultratop, Mapefloor PU 460, Mapefloor Comfort System AR  
**Waterproofing:** Mapeelastic, Planiseal 88, Mape-Antique Strutturale NHL

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

NEWS



# MAPEI COLOURS BRIGHTEN UP 100 YEARS OF LA RINASCENTE

La Rinascente's history-making shop widows!





2017

## THE MOST GLAMOROUS ITALIAN DEPARTMENT STORE “SHOWCASES” THE HISTORY OF DESIGN FOR ITS CENTENARY CELEBRATIONS

100 years have gone by since the founding of the only major Italian department store capable of competing in terms of style and design with Galleries Lafayette, Harrods and KaDeWe in Berlin. La Rinascente is organising a series of events to celebrate its hundredth anniversary. On 20<sup>th</sup> May an exhibition opened at Max Museum in Chiasso, Switzerland, entitled “La Rinascente. 100 years of business creativity in graphics”. On display there are sketches, posters and calendars that la Rinascente initially commissioned to famous avant-garde illustrators, such as Marcello Dudovich and Achille Mauzan, who designed the first ever advertising poster. “Stories of Innovation”, an exhibition organised by Milan City Council in the chambers of the Prince’s Apartment on the aristo-



cratic floor of Palazzo Reale, Milan, providing an overview of the history and development of this major department store from its founding to the present day, will be open to visitors through to 24<sup>th</sup> September.

### THE HISTORY OF A DEPARTMENT STORE

The name “la Rinascente” was first coined a century ago - although the company is even older than that - by the Italian poet Gabriele D’Annunzio by special request of Senator Borletti, who purchased Bocconi Emporium in 1917 and set about revamping it.

La Rinascente has always been considered one of the symbols of Milan for the way it opens up to and embraces everything new on the international scene. Innovation and perpetual motion, as exemplified by regular changes in its instore concept, have always been a deliberate strategy. Such a successful strategy that la Rinascente was awarded the prize for the world’s best store window campaign by the IGDS, the biggest international association of department stores, for its ability to constantly innovate and put on extraordinary performances.

The Bocconi brothers, the founders of la Rinascente, were the first to sell ready-to-wear fashion back in 1865 and as early as the 1950s this major Milanese department store pioneered the prêt-à-porter revolution in Italy.



La Rinascente has played its part in the history Italian design and art, as well as fashion: alongside D'Annunzio, who named the store, and the great designer Max Huber, who was given the job of designing its logo, lots of major names on the Italian art scene have been employees or worked at la Rinascente, such as Gio Ponti, Roberto Sambonet, Albe Steiner and Giorgio Armani, who began his career as a window dresser at the store, not to mention one of the leaders of the Hermetic movement, the poet Salvatore Quasimodo, who worked in the administration office.

Research and Innovation have always been to the very fore at la Rinascente and it was with this in mind that the "Golden Compass" prize was set up in 1954, based on an idea by Gio Ponti and Alberto Rosselli with the full backing of Aldo Borletti. A prestigious prize in the realm of high-quality industrial production.

Plenty of attention has always been paid to the shop windows, which have always been a brilliant business idea and very distinctive feature compared to other major department stores. From 1953, when they were co-ordinated and supervised by Bruno Munari, right down to the present day, the shop window displays have always been designed by major names in art and architecture.

### 100 DESIGN OBJECTS ON DISPLAY

Indeed, it was the shop windows that were the centre of attention for an entire week from 6<sup>th</sup>-12<sup>th</sup> June in a project promoted by the interior design and architecture magazine, Elle Decor, to celebrate la Rinascente's hundredth anniversary. 100 of the most emblematic design objects across an entire century of history were displayed and carefully set in the eight shop windows facing onto Piazza Duomo. A procession through time providing visitors with tangible evidence of how everyday lifestyle has evolved through furniture and accessories that have become an integral part of our homes.



The Elle Decor Italia exhibition was designed by Elisa Ossino Studio: during the press conference to present the project, Ms Ossino explained that "the idea was to create a three-dimensional timeline in the form of a horizontal line intersected by vertical lines that created stands on which various objects were displayed".

The editor-in-chief of Elle Décor Italia, Livia Peraldo, also noted that since 2010, the year when she began working with la Rinascente, "we have focused on a communication strategy embodied in window-dressing to which we have made a major contribution – always extremely exciting work! – thanks to working partnerships with international designers. An intelligent way of talking about fashion and design with all kinds of people. Our partner stores strategy allows us to choose a different designer for each new





100 design objects were on display in eight La Rinascente shop windows. Mapei products coloured the backdrops for the window dressings. (Elle Decor 100xcento design. A project by Elisa Ossino Studio. Photo courtesy of: Gianfranco Maggio).

project. So, the shop windows have a special meaning for Elle Décor Italia and the idea of retracing 100 years of the history of design was really excited. Objects of various different sizes were chosen, authentic icons that have altered our lifestyle by entering our collective psyche”.

### MAPEI IS ALSO SHOWCASED

Anybody walking past the eight La Rinascente shop windows from 6<sup>th</sup>-12<sup>th</sup> June was bound to have been struck by the uniqueness and elegance of the design objects on display, ranging from an iconic red Vanity Fair by Frau to a La Chaise armchair designed by Charles and Ray Eames for Vitra, a radio designed by the Castiglioni brothers for Brionvega, the Juicy Salif lemon squeezer designed by Philippe Starck for Alessi, and Kioto end table by Memphis Milano.



Each shop window had a coloured coating on both the wall and floor: lemon yellow, glycine blue, candy pink and bright orange. Mapei products supplied the coloured finishes forming the backdrops for the items in each window. As the vivid colours demonstrate, Mapei pays very special attention to colour to provide solutions that suit the most diverse and creative colour schemes.

Working in partnership with Elle Decor, Mapei supplied the MAPEFLOOR COMFORT SYSTEM customisable sound-absorbing resin flooring available in a range of colours and DURSILITE MATT washable water-repellent wall paint in the same finishing colour.

MAPEFLOOR COMFORT SYSTEM is Mapei's product for making seamless resin floors that look great, are easy to clean and are extremely comfortable to walk on.

DURSILITE MATT is a transpirant, high-opacity, washable, water-repellent wall paint with an excellent white point. It is part of the DURSILITE finishing range of products, which all have low dirt pickup, are easy to clean, and keep looking clean throughout their entire lifecycle.



# THE BAYER TOWER ON THE OUTSKIRTS OF MILAN

## STRUCTURAL STRENGTHENING OF THE SUPPORT COLUMN AND STORAGE TANK OF THE BAYER EMERGENCY WATER TOWER

Bayer Italia operates in the Life Sciences, Health and Agriculture sector. Their production is based on three manufacturing facilities in Garbagnate Milanese (Milan), Segrate (Milan) and Filago (Bergamo).

For the Bayer company, the Garbagnate Milanese works, commissioned in 1946 and located in the Parco delle Groane area on the outskirts of Milan, represents a facility of excellence and is specialised in the production of pharmaceuticals in their solid form for the Italian and overseas markets, such as pills and micro-capsules. At the end of 2016 the facility, with a workforce of 270, celebrated production of the ten billionth pill produced that year, a reflection of a country – Italy – which is currently the second largest manufacturer of pharmaceuticals in Europe.

The various, ongoing improvement programmes implemented over the years have led to an increase in the efficiency of the various production processes and considerably reduced their impact on the surrounding environment.

Bayer Healthcare Manufacturing was also awarded WHP (Workplace Health Promotion) certification for their Garbagnate Milanese and Segrate facilities in 2016.

### **RENOVATION WORK ON THE EMERGENCY WATER TOWER**

The Garbagnate Milanese management decided last year to renovate the emergency water tower (a large water storage

tank standing above the ground on a reinforced concrete column), which is located within the works.

Mapei Technical Services carried out a series of technical surveys on site, followed by an in-depth analysis of the various problems posed by the intervention.

The structural analysis carried out showed that there was insufficient horizontal reinforcement in the tower, which is required to contrast the formation of vertical cracks and increase the shear strength and ductility through the section.

To have a better understanding of which type of reinforcement was required, a model was created so that the reinforcement on the two faces of the structure could be considered separately. Through a process of calculations, and by integrating the reinforcement on the external face only, it was possible to calculate and define the reinforcement required to meet the specified requirements of the intervention.

Working on the external face only was found to be sufficient, by inserting reinforcing material comparable to steel rebar horizontally. The product chosen for this part of the work was MAPEWRAP C UNI-AX high-strength, high-modulus, uni-directional carbon fibre fabric, suitable for confining elements subjected to compressive or combined compressive/flexural loads to improve their load-bearing capacity and ductility.

The work was carried out using the following procedure.

Substrate preparation. The first step was to remove all the old render from the area to be reinforced with power tools,



**IN THE FACING PAGE.** The scaffolding used to carry out the renovation work.

**IN THIS PAGE.** The Bayer emergency water tower.

**PHOTO 1.** After preparing the substrate, the surface was primed with MAPEWRAP PRIMER 1.

**PHOTO 2.** The surfaces were levelled with MAPEWRAP 12.

**PHOTO 3.** In correspondence with the position of each ring of strengthening material, MAPEWRAP C UNI-AX 300/40 high-strength, uni-directional carbon fibre fabric impregnated with MAPEWRAP 31 two-component epoxy resin was wrapped around the column.





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**PHOTO 4.** Whilst still fresh, the surface was broadcast with QUARTZ 1.2.  
**PHOTO 5.** The support column and the base of the storage tank were levelled with PLANITOP 207 cementitious skimming compound.  
**PHOTO 6.** Once the surface had been skimmed, it was primed with MALECH.  
**PHOTO 7.** ELASTOCOLOR PAINT was selected for the coloured finish.



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along with any areas with signs of cracks or detached concrete, to form a compact surface. Where necessary, the damaged or loose concrete was removed from the surface to form a sound, compact substrate with the specified mechanical requirements. All the exposed rebar was then thoroughly brushed down to a bare metal finish and the substrate was carefully cleaned with a vacuum cleaner to remove all traces of dust and waste material.

*Sealing the cracks.* Any cracks in the substrate were opened to form a “dovetail” section and were cleaned and vacuumed off to remove any loose material. Plastic injectors were inserted into the cracks so they could be filled with MAPEWRAP 12 two-component epoxy putty and sealed with EPOJET special, hi-flow epoxy resin. Once all the cracks had been filled and sealed, the injectors were removed and the holes in the surface were grouted, again with MAPEWRAP 12.

*Integration of the concrete.* The exposed rebar was re-passivated with MAPEFER 1K cementitious mortar. This one-component mortar is made from cementitious binders, powdered polymers and special corrosion inhibitors and prevents rust from forming again on rebar. Once this step had been completed, the gaps in the concrete were integrated by applying PLANITOP SMOOTH & REPAIR R4 class R4 rapid-setting, compensated-shrinkage, thixotropic, fibre-reinforced cementitious mortar, which is applied in a single layer from 3 to 40 mm thick to integrate and level off concrete. When the preparation work on the substrate had been completed, all the surfaces were vacuumed to remove any traces of dust.



## STRENGTHENING AND FINISHING THE SUPPORT COLUMN

The next step of the renovation work was to strengthen the support column of the tower. Starting from the bottom of the column, the Mapei systems were applied by wrapping them around the column to form rings up to the top of the storage tank.

The first step was to treat the surfaces to be strengthened with MAPEWRAP PRIMER 1, a special epoxy primer specifically developed for the MAPEWRAP system. Then, in the areas that had been repaired and integrated, a layer of MAPEWRAP 12 two-component epoxy grout for structural bonds and composite systems was applied with a spreader. At this point, in correspondence with the position of each ring of strengthening material, a single piece of MAPEWRAP C UNI-AX 300/40 high-strength, uni-directional carbon fibre fabric, impregnated with MAPEWRAP 31 two-component epoxy resin, was wrapped around the column to form a solid ring, with each ring overlapping the adjacent one by at least 20 cm along the horizontal

plane to guarantee the effectiveness of the confinement work. While the resin on the surface of the fabric was still wet, it was broadcast with QUARTZ 1.2 so that the materials for the finishing operations could form a stronger bond.

Once the resin had cured, the surface of the support column and of the base of the storage tank that had been strengthened was levelled with PLANITOP 207 cementitious skimming compound. After the surface had been skimmed, it was primed with MALECH micronized, acrylic resin-based primer to even out the absorption of the substrate and to improve adhesion of the coloured finish.

After 24 hours, a finishing coat of ELASTOCOLOR PAINT in the colour S 1000 N was applied. This is a one-component, acrylic resin-based paint which, once completely dry, forms an elastic coating that remains impermeable to water and aggressive agents present in the atmosphere, while remaining permeable to water vapour.

For the container unit and cupola of the storage tank, the following work was carried out. The old skim coat was removed, the cracks were sealed with ADESILEX PG1 epoxy adhesive and the container unit and cupola were skimmed with PLANITOP 207 skimming compound. At this point, the cupola was treated with a coat of PRIMER 3296 consolidating resin diluted 1:2 with water, a special primer containing micro-particles of acrylic polymers with the capacity to penetrate into the construction materials on which it is applied. The substrate of the cupola was then waterproofed with MAPELASTIC FOUNDATION two-component cementitious mortar. The product chosen to paint the cupola and container unit was ELASTOCOLOR WATERPROOF, an acrylic paint suitable for surfaces in permanent contact with water, again in the colour S 1000 N.

## IN THE SPOTLIGHT

### MAPEWRAP C UNI-AX

MapeWrap C UNI-AX is mono-directional carbon fibre fabrics characterised by a high modulus of elasticity, and high tensile strength. This system is suitable to repair reinforced concrete elements damaged by physical-mechanical action, for the confinement of axial loaded or bent concrete elements and for seismic strengthening of structures in earthquake zones. They may be laid using two different techniques: "wet system" and "dry system". MapeWrap C UNI-AX is produced in two different weights (300 and 600 g/m<sup>2</sup>), and each weight is available in different widths (10 cm, 20 cm and 40 cm).



## TECHNICAL DATA

**The Bayer emergency water tower,**  
Garbagnate Milanese (Milan, Italy)

**Year of Construction:** 1946

**Year of Intervention:** 2016

**Intervention by Mapei:** supplying products for the sealants of the cracks, the substrate preparation, the structural strengthening and the final coating

**Project:** Tommaso Aromataris

**Client:** Bayer Spa

**Works Direction:** Corrado Aggio

**Contractor:** PRO.MA.R. srl

**Installer Company:** PRO.MA.R. srl

**Mapei Distributor:** PRO.MA.R. srl

**Mapei Coordinators:** Andrea Peli,  
Giuseppe Melcangi (Mapei SpA)

## MAPEI PRODUCTS

Waterproofing structures: MapeLastic Foundation, Primer 3296

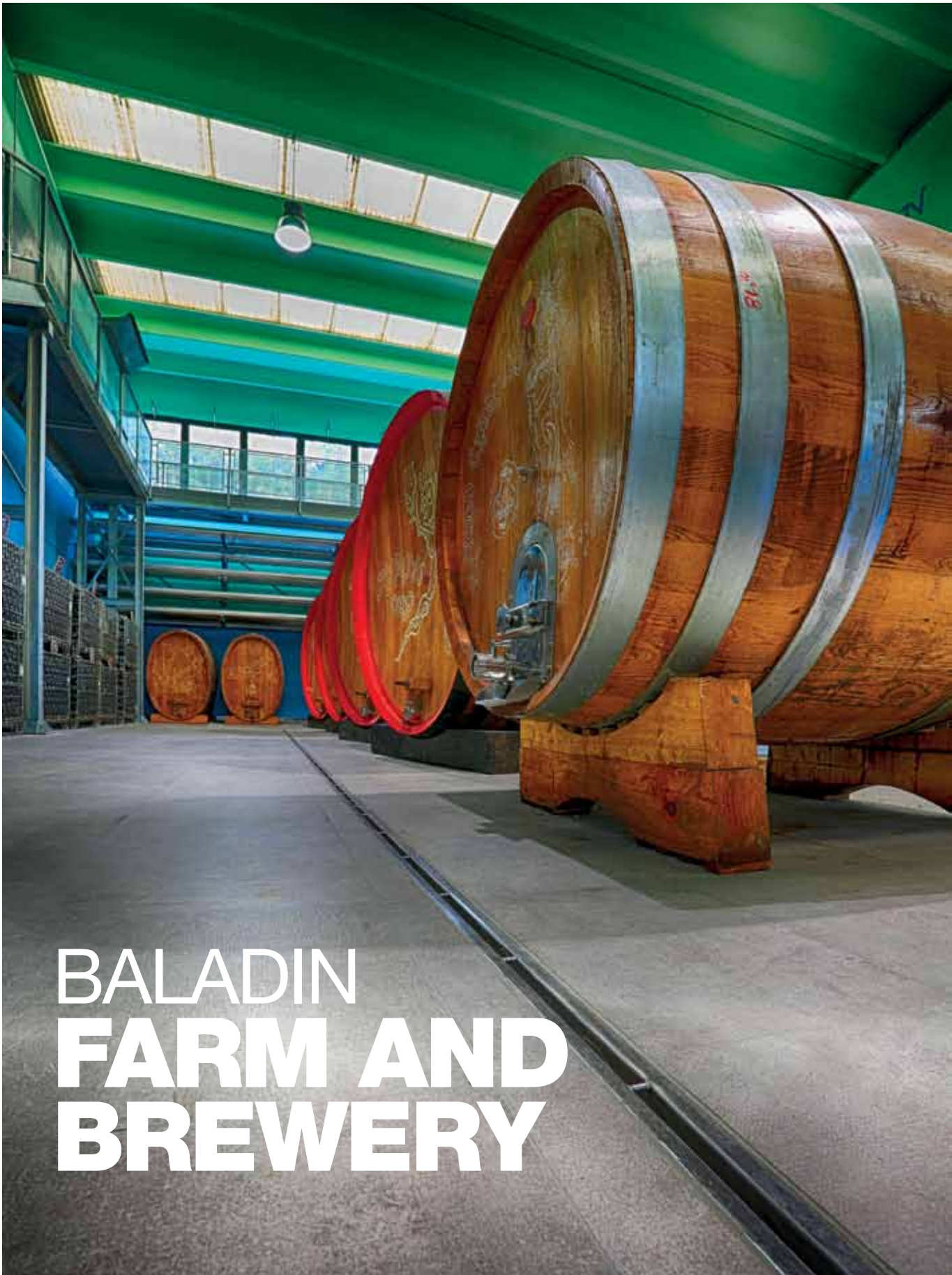
Consolidating and strengthening structures:

Adesilex PG1, Epojet, Malech, Mapefer 1K, MapeWrap Primer 1, MapeWrap 12, MapeWrap 31, MapeWrap C Uni AX, Quartz 1.2

Skimming and finishing surfaces:

Elastocolor Paint, Elastocolor Waterproof, Planitop 207, Planitop Smooth & Repair R4

For further information on products see the websites [www.mapei.it](http://www.mapei.it) and [www.mapei.com](http://www.mapei.com)



# BALADIN FARM AND BREWERY



## IN THE BIRTHPLACE OF BEER, THE RIGHT PRODUCTS TO INSTALL CERAMICS

The Baladin brewery was founded by master-brewer Teo Musso in 1996 to produce and serve their own beers in Piozzo, a small town in the Langhe area in Piedmont, in Northern Italy.

Their initial aim was to produce beer with its own characteristic flavour and image for the Italian restaurant and delicatessen sectors, and today their products are also exported abroad.

Since January 2012, Baladin is both a farm and a brewery, enabling them to be fully responsible for the entire production chain of their beers, right from growing and harvesting the raw materials.

Their ultimate goal is to have a fully self-sufficient cycle, producing not only wealth but also values and ethics. They have not quite reached the point of being entirely self-sufficient, but future development prospects indicate

that this goal will be reached within a few years.

A new, more modern 3,000 m<sup>2</sup> production facility was inaugurated in 2016, at the foot of Piozzo Hill, in the near town of Farigliano. The idea was to renovate an existing building to avoid building on a green area.

The new facility will enable Baladin to increase production from a current annual capacity of 12,000 hectolitres – divided across 30 different types of beer – to a possible 50,000 hectolitres per year in the future.

### PERFECT PRODUCTS FOR PERFECT INSTALLATION

Works on the new Baladin facility, which will be used for the production and storage of their range of beers as well as the new Head Office, started in October 2015 and was completed at

the end of June 2016.

The new offices were tiled with porcelain tiles measuring 60x60 cm with a thickness of 10 mm, made by the company Cotto d'Este, while similar tiles, but with a thickness of 14 mm, were installed in the production and storage areas.

To prepare the substrate in the processing areas, the choice was for a concrete floor with a power-float finish to create all the slopes required, while for the new offices a more traditional substrate was installed.

Once all the substrates had been cured sufficiently, installation of the ceramic flooring could take place. This was carried out to perfection by Roberto Gondolo, the first ever Assoposaccredited Master-tiler in the Province of Cuneo, using KERAFLEX MAXI S1 grey, high-performance, non-slip ce-



**TOP OF PAGE.** The new Baladin brewery, inaugurated in 2016.

**BELOW.** Porcelain tiles were installed in the new offices using KERAFLEX MAXI S1 cementitious adhesive. They were then grouted with KERACOLOR GG.



## PROJECTS INSTALLATION OF CERAMICS



mentitious adhesive with Low Dust technology, very low emission of volatile organic compounds (VOC) and certified, offset greenhouse gas emissions, a special product for bonding large format ceramic tiles and stone material.

The product chosen to grout the tiles in the offices was KERACOLOR GG high-performance, polymer-modified

cementitious mortar for grout lines from 4 to 15 mm wide. The grout lines in the processing and storage areas, on the other hand, were grouted with KERAPOXY CQ (colour 113), a two-component, anti-acid, easy-to-apply, bacteriostatic epoxy filler with excellent cleanability and BioBlock® technology, ideal for grouting wall and floor coverings in the food industry where

a high level of protection against the formation and proliferation of microorganisms is required.

KERAPOXY CLEANER was then used to clean all the marks and traces of epoxy grout from the surfaces.

For the expansion joints, the product chosen was MAPEFLEX PU30 epoxy-polyurethane sealant, ideal for sealing joints in ceramic floors subjected to intense traffic.

The aluminium skirting in the processing and storage areas was bonded with ULTRABOND MS RAPID, rapid-setting assembly adhesive for internal and external use with a high sucker effect.

The second phase of the project is now under way, which includes a park, home-grown wheat and hops and their own butcher's shop. The aim is to open the works to the public, with guided tours and areas to relax and enjoy life. Creative entrepreneurship and ethical values first and foremost. These are the ingredients behind the success of the Baladin Brewery. An excellent example of Italian industry in constant growth which Mapei hopes will never stop.

### IN THE SPOTLIGHT

#### KERAFLEX MAXI S1

High-performance, non-slip, deformable, cementitious adhesive with extended open time.

This product is particularly suitable for large-sized porcelain tiles and natural stone. KERAFLEX MAXI S1 also has very low emission of VOC (Volatile Organic Compounds), to safeguard the health of both those who apply the product and

those who use areas in which it is applied, and is certified EC1 R Plus by the German association GEV.

The innovative Low Dust technology which characterises this adhesive considerably reduces the amount of dust given off during mixing compared with conventional MAPEI adhesives, to make floorlayers' work

easier and safer. It helps contribute up to **5 points** to obtain the **LEED** certification.





**PHOTO 1.** 14 mm thick porcelain tiles measuring 60x60 cm were chosen for the production and storage areas and were installed using KERAFLEX MAXI S1.

**PHOTO 2.** The grout lines were filled with KERAPOXY CQ epoxy filler.

**PHOTO 3.** KERAPOXY CLEANER was the product chosen to clean the surfaces and remove all the marks and traces of grout.

**PHOTO 4.** MAPEFLEX PU30 epoxy sealant was chosen for the expansion joints.



© Bruno fotografo - Boves (CN)

#### **TECHNICAL DATA**

**Baladin Farm and Brewery New Production Facility**, Piozzo (Cuneo, Northern Italy)

**Period of Construction:** 2015-2016

**Period of Intervention:** 2015-2016

**Intervention by Mapei:** supplying products for the installation of porcelain tiles and for the bonding of aluminium

**Client:** Baladin Farm and Brewery

**Project and Works Direction:** Studio

Associato S.A.P.I., Domenico Falbo (Turin, Italy)

**Contractor:** Artigiana Costruzioni CQV - Impresa Edile Valle

**Installation contractor:** The Assoposa master tiler Roberto Gondolo

**Mapei Distributor:** Casaoikos/Berardo Ceramiche (Busca, Cuneo), Andrea Faramia and Luca Berardo

**Mapei Coordinator:** Effegi, Luca Giuliano (Mapei SpA)

#### **MAPEI PRODUCTS**

**Installation and grouting of porcelain tiles:** Keraflex Maxi S1, Keracolor GG, Kerapoxy CQ, Mapeflex PU30, Kerapoxy Cleaner  
**Bonding of aluminium skirting:** Ultrabond MS Rapid

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



# KIEV VELODROME

AN HISTORICAL CYCLING TRACK HAS BEEN “SAVED” AND RESTORED TO ITS FORMER USE

“On my honour I am here to ask the Governorate Directors for the permission to build a velodrome and a wooden pavilion on the site of manor house No. 58 in Funduleevska Road.” This was how Ivan Belenco presented his request to build a velodrome in 1912 to the Kiev authorities. The racing track was inaugurated one year later on the occasion of the 300<sup>th</sup> anniversary of the Romanov royal family. Following the October Revolution in 1917, the history of Russia took a different direction, but in the new Soviet Union the velodrome continued to be used for cycle races. The track was restored and redeveloped for the first time in 1939 and, apart from modernising the existing structures, a central entrance was added and a barrier wall was built around the track. The effects of time, general neglect and new norms and standards meant the circuit had to have a general overhaul between the 1970’s and 1980’s and, apart from repairs to the various structures, the track itself also needed to be rebuilt. In 2007, plans were presented to build

a new block of apartments right next to the perimeter of the velodrome and there was even mention of demolishing the velodrome itself, which now lay in a general state of disrepair. To prevent this historical circuit being demolished and losing it forever, a group of citizens founded an association for Cycling Fans of Kiev. The association monitored all of the renovation phases, helping choose the best solutions and best products for the velodrome.

## RESTORATION PROJECT

*The structure of the track.* The track is 286 metres long, 8 metres wide around the bends with a slope of 38°, an angle across the straights of 11°, the transition curve is 21.5 metres long and the constant radius around the bends is 21.7 metres, allowing cyclists to reach speeds of up to 73.58 km/hour. As far as its capacity is concerned, the Velodrome has a layout that can host 2,000 spectators.



**LEFT.** Kiev Velodrome at the end of the works.

**PHOTO 1.** A rendering of the restoration project as presented in 2007.

**PHOTO 2.** The start of work to repair the structure.

**PHOTO 3.** The cracks in the surface were repaired with EPORIP and EPOJET, while the damaged concrete was repaired with MAPEFLOOR I 910.

*The condition of the track.* A first survey found the entire circuit was in poor condition and, apart from having cracks and areas that had become detached, the surface of the track was covered in vegetation.

*Restoration of the track.* After a further series of surveys and a thorough analysis of the general condition of the materials by the designers and contractors contacted to carry out the restoration work, in the spring of 2015 the first phase of the work was carried out to remove all the vegetation and rubbish on and around the track. The following spring the actual restoration and upgrading work started. The company contracted to carry out the various interventions contacted Mapei Technical Services who, after surveying the site and realising the extent of the damage, recommended a series of products suitable for the needs of the site. Firstly, and after removing all the vegetation and damaged areas from the surface, the cracks in the substrates had to be sealed and, to carry out this part of the

work, it was recommended to use EPORIP two-component, solvent-free epoxy adhesive. Once it had been applied, the surface of the adhesive was broadcast with quartz sand while it was still fresh. The cracks were also reinforced and consolidated by injecting them with EPOJET super-plastic epoxy resin.

The surface of the concrete wall around the track was levelled with NIVOPLAN PLUS levelling mortar (produced by Mapei Polska Sp.z o.o. and distributed on the Ukrainian market by Mapei Ukraine Llc). This cementitious skimming compound may be used to level uneven surfaces and brick and concrete walls. To improve its adherence to the substrate, it was mixed with PLANICRETE synthetic latex rubber. Once the substrate was perfectly dry, the damaged concrete was repaired with MAPEFLOOR I 910 two-component epoxy binder, which acts



**PHOTO 4.** The surface of the track was coated with light grey, blue and green MAPECOAT TNS URBAN.

**PHOTO 5.** The Mayor of Kiev, Vitali Klitschko (left), joined members of the local association of cycling fans on the inauguration day. He is shown here with one of the fans wearing the historic MAPEI cycling T-shirt. The association supported the restoration project from its earliest stages, including personal initiatives, proposals, social media support, and requests to MAPEI for products.

as a bonding promoter for resin coatings or can be used to make trowel-finish mortar mixed with quartz sand, as in this case.

*Application of the MAPECOAT TNS URBAN SYSTEM.* At the end of April, after completing the repair and restoration work on the substrate, a series of tests were carried out with different products to coat the surface of the track. The final choice was MAPECOAT TNS URBAN SYSTEM, a multi-layered sys-

## MAPECOAT TNS URBAN SYSTEM

The multi-layered MAPECOAT TNS URBAN SYSTEM, made from acrylic resin in water dispersion and selected fillers with high resistance to wear, UV rays and general weather conditions, and may be applied over old surfaces that have already been painted or on new cementitious and asphalt floors. It is specifically formulated for coating cycle

paths, pedestrian areas and street furniture. Coatings made from this system have a very attractive finish and may be renewed easily and quickly.

The system is made up of MAPECOAT TNS LINE, MAPECOAT TNS PROTECTION, MAPECOAT TNS URBAN and MAPECOAT TNS WHITE BASE COAT.

tem created specifically for coating cycle lanes, pedestrian areas and street furniture. Apart from coating surfaces, it also protects asphalt and cementitious substrates against general wear and tear and forms a non-slip finish resistant to oil, fuel and de-icing salts. Coatings made from this system have a very attractive finish and can be renewed easily and quickly. The system is made up of MAPECOAT TNS LINE, MAPECOAT TNS PROTECTION, MAPECOAT TNS URBAN and MAPECOAT TNS WHITE BASE COAT.

In this particular case MAPECOAT TNS URBAN was used for the track in the Kiev Velodrome, a coloured coating system made from acrylic resin in water dispersion and selected fillers. A first coat of white was initially applied, with a second coat after 12 to 24 hours, followed by three more coats, in this case in the final colour of light grey. At the base of the actual track the same coating system was used to create two strips of different widths in green and blue. When the substrate was perfectly dry, lines were painted on to mark out the track using MAPECOAT TNS LINE acrylic resin-based paint in water dispersion, in the colours cyan blue, red and black. The last step was to apply a protective coat of MAPECOAT TNS PROTECTION.

The Velodrome was inaugurated on the 20<sup>th</sup> of May 2017 by the Mayor of Kiev Vitali Klitschko, former heavyweight boxer and WBC “Champion Emeritus”. During the inauguration ceremony, the Mayor said: “We can remember the condition of the velodrome back in the spring of 2014 and only a few of us really believed it could have been revived. However, we managed to completely restore it and today we can finally celebrate our velodrome’s new lease of life!”

Mapei rejoices in contributing to this heartfelt project!

### TECHNICAL DATA

**Velodrome,** Kiev, (Ukraine)

**Year of construction:** 1913

**Period of intervention:** 2014-2017

**Intervention by Mapei:** supply of products to repair, coat and finish the cycling track

**Client:** ZhytloInvestBud KP

**Main contractor:** KyivZhytloBud Llc

**Mapei distributor:** Mega-Line Llc

**Mapei coordinators:** R.Vigo, F.

D’Amato (Mapei S.p.A.) , V. Naumenko, E. Yashenko, D. Levytsky and M. Faccin (Mapei Ukraine Llc)

### MAPEI PRODUCTS

**Repairs to the substrate:** Epojet, Eporip, Mapefloor I 910, Nivoplus Plus\* and Planicrete

**Coating surfaces:** Mapecoat TNS Line

Base, Mapecoat TNS Protection and Mapecoat TNS Urban

\* Produced by Mapei Polska Sp.z o.o. and distributed on the Ukrainian market by Mapei Ukraine Llc

For further information on these products see our website at [www.mapei.ua](http://www.mapei.ua) or [www.mapei.com](http://www.mapei.com)

# Mapecoat® TNS

Elastic, rapid, winning system.



REPAIR OF OLD EXISTING FLOORINGS



HIGHLY FLEXIBLE



SOLVENT FREE



AVAILABLE IN 24 COLOURS



UV-RESISTANT



FOR INTERNAL AND EXTERNAL USE

**Mapecoat TNS** is a multi-layered, durable, resistant, **acrylic-based** system in water dispersion. It is used to repair **sports flooring** with high adhesion level. It complies with **ITF** requirements.



Learn more on [www.mapei.com](http://www.mapei.com)





# LOTUS MEGA YACHT

INSTALLING FLOORING IN A SHIP IS A CHALLENGE THAT REQUIRES RELIABLE, DURABLE SOLUTIONS

Exposure to heat, direct sunlight, saltwater and foot traffic: this is what the internal and external floors have to withstand on the Lotus Mega Yacht, a grandiose luxury yacht launched a short while ago in Dubai after being commissioned by Epic Luxury Yachts UAE, a company that rents out yachts, which had decided to build a yacht with luxurious and prestigious finishing touches.

The Lotus Mega Yacht has been built to host important events such as corporate conventions and wedding parties, with enough room in its large spaces to accommodate hundreds of people.

The yacht – 67 metres long and around 15 metres wide – has 11 large cabins, a 1,200 m<sup>2</sup> suite with a retractable roof and a glass-fronted balcony with panoramic views, a night

club, a restaurant and kitchen to cater for up to 500 people, ball rooms for up to 1,000 guests, passenger lifts, automatic doors and a 70-seat cinema with a large screen.

The main bridge has a large, temperature-controlled swimming pool, while on the other three bridges there is a hydro-massage pool for up to 10 people and 5 smaller Jacuzzis, a Spa centre with a sauna, steam-room and changing rooms and, to round it all off, a garage with a number of jet-skis.

## THE PROBLEM OF INSTALLING EXTERNAL FLOORS

Well known for their adhesives, sealants and chemical products for the building industry and highly appreciated for their on-site technical support, Mapei was contacted to provide products to smooth and level the internal and external metal

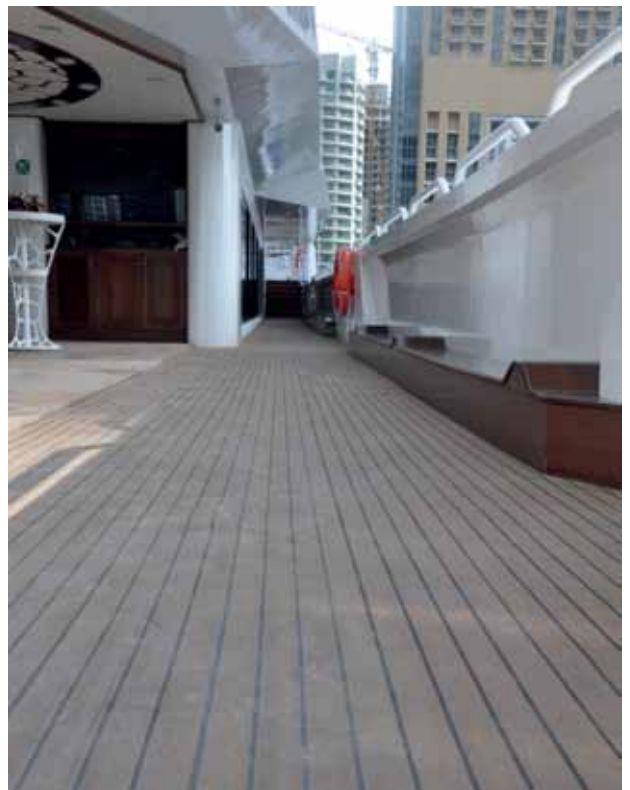


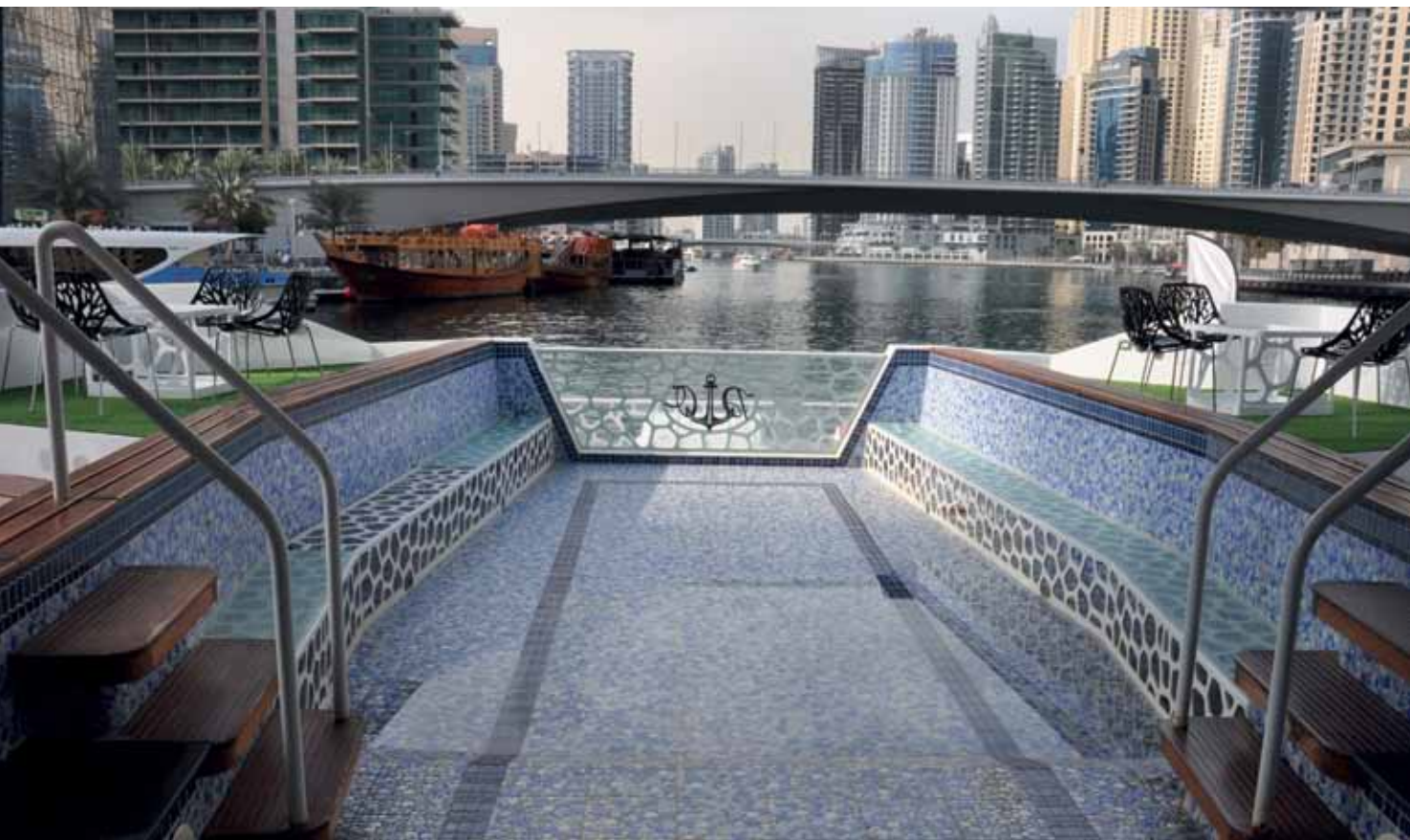
substrates and install the flooring. The solutions proposed by the competitors had proven to be inefficient for what was the major challenge: the water-tightness of the materials installed after being exposed to direct sunlight and the corrosive actions of seawater for long periods of time. The key to overcoming these problems successfully was the correct preparation of the metal installation surfaces using the right products.

Mapei Technical Services were on site for the entire duration of the work so that the client and contractor could be sure the proposed products and solutions were applied correctly. Mapei products were used to install the decking and the rubber flooring on the external bridges, tiles in the swimming pool on the main bridge, the kitchen coverings and the bathrooms for the cabins. The total surface area installed amounted to around 2,000 m<sup>2</sup>.

As far as the external areas were concerned, the metal surfaces were treated with PRIMER MF two-component, epoxy resin-based, low viscosity primer. This product is solvent-free and non-flammable. The surface of the primer was broadcast with QUARTZ 1.2 ME to guarantee perfect adhesion of the smoothing and levelling compound. Then, in order to form a perfectly flat surface, the substrates were levelled with ULTRAPLAN FIBER KIT ultra rapid-hardening, self-levelling smoothing compound (manufactured and distributed exclusively in the UAE), which had been recommended to the client

**ABOVE.** A view of the Lotus Mega Yacht  
**BELOW.** Before installing the flooring, the surfaces of the bridges were treated with PRIMER MF and smoothed over with ULTRAPLAN FIBER KIT.





**ABOVE.** The ceramic tiles and marble for the swimming pool were bonded with ADESILEX P10+ISOLASTIC and grouted with KERAPOXY.  
**BELOW.** The various types of flooring on the 4 bridges were installed with KERALASTIC and ULTRACOLOR PLUS.





**ON THE RIGHT.** KERAFLEX  
MAXI S1 was used to bond  
the flooring in the internal  
areas and bathrooms.

for its high level of resistance to foot traffic.

Once the surfaces had been levelled off, a coat of KERALASTIC two-component, solvent and water-free polyurethane adhesive was applied on the surface to make it more elastic and waterproof.

At this point the decking flooring was bonded in place with KERALASTIC T two-component polyurethane adhesive while for the rubber coating ADESILEX G19 epoxy-polyurethane adhesive has been chosen. The grout lines were filled with ULTRACOLOR PLUS high-performance, anti-efflorescence, rapid-setting and drying polymer-modified mortar with water-repellent DropEffect® and anti-mould BioBlock® technology.

Mapei products were also chosen to install ceramic and marble in the swimming pool on the main bridge. White ADESILEX P10 non-slip, improved cementitious adhesive was used to bond the tiles. This product is particularly suitable for bonding glass mosaics, ceramic and marble. To improve its performance characteristics and deformability to the requirements of class S1 (deformable adhesive) according to EN 12004 standards, 50% of the mixing water for the ADESILEX P10 adhesive was replaced with ISOLASTIC elasticising latex.

The grout lines were filled with KERAPOXY and the separation joints were sealed with MAPESIL AC pure acetic solvent-free, silicone sealant. The wide range of 34 colours available for this particular sealant met the requirements of the client, enabling a finish to be obtained which was well up to the standards required for the yacht.

## PRESTIGIOUS FINISHES FOR THE INTERNAL SURFACES

The internal floors in the kitchen and the bathrooms for the cabins were prepared using the same method as for the external surfaces, by applying PRIMER MF, QUARTZ 1.2 ME and ULTRAPLAN FIBER KIT in the same order. The tiles on these surfaces, on the other hand, were bonded with KERAFLEX MAXI S1, a non-slip adhesive with a good degree of deformability which, thanks to the use of innovative Low Dust technology, considerably reduces the amount of dust given off when mixing the product. ULTRACOLOR PLUS was used to grout the joints. KERAFLEX MAXI S1 was also used to bond the tiles in the bathrooms and, in this case, KERAPOXY anti-acid epoxy mortar was the preferred choice to fill the grout lines.



## IN THE SPOTLIGHT

### KERAFLEX MAXI S1

It is a deformable (S1), improved (2) slip resistant (T) cementitious adhesive (C) with extended open time (E) classified as C2TE S1 according to EN 12004. It is used for interior and exterior bonding, up to 15 mm thick, on floor or ceramic tiles of every type and size on uneven substrates and renders; for interior and exterior bonding of stone materials; for spot bonding of insulating material in interiors. It can contribute up to **3 points** to obtain the **LEED** certification for eco-sustainable buildings.



## TECHNICAL DATA

**Lotus Mega Yacht**, Dubai (UAE)

**Period of Construction:** 2014-2016

**Period of Intervention:** 2015-2016

**Intervention by Mapei:** supplying products for substrate preparation and for the installation and grouting of manifold surfaces

**Project:** Lotus Mega Yacht

**Client:** Dutch Oriental/Epic Luxury Yachts

**Contractor:** Lotus Mega Yacht

**Installer Company:** Epic Luxury Yachts

**Mapei Coordinator:** Shoeb Ali Khan  
(Mapei Construction Chemicals LLC)

## MAPEI PRODUCTS

Substrate preparation: Primer MF, Quartz 1.2 ME, Ultraplan Fiber Kit\*

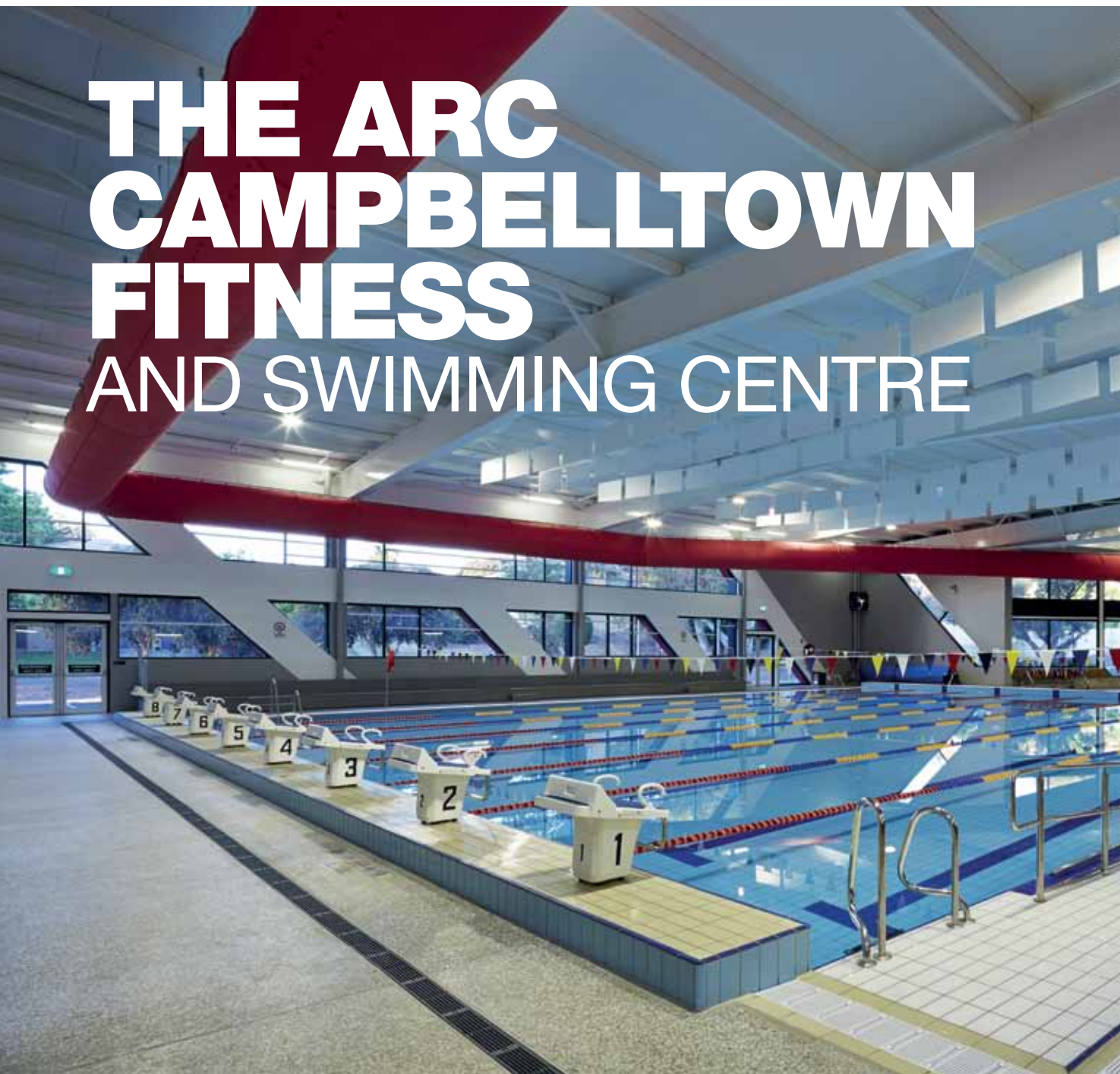
Installation of decking and of rubber flooring: Keralastic T, Adesilex G19

Installation and grouting of ceramics and marble: Keralastic, Ultracolor Plus, Keraflex Maxi S1, Kerapoxy, Adesilex P10, Isolastic

\*This product is distributed on the United Arab Emirates by Mapei Construction Chemicals LLC

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

# THE ARC CAMPBELLTOWN FITNESS AND SWIMMING CENTRE



## NEW CERAMICS HAVE BEEN INSTALLED IN THE SPORTING HEART OF A LOCAL COUNCIL IN THE CITY OF ADELAIDE

The public swimming pool in the City of Campbelltown – a city in South Australia just a few kilometres to the east of Adelaide – has reached a new standard following the upgrade of the ARC Fitness and Swimming Centre.

A winning mix of creative design, a keen eye on the needs of users of the centre and comforts of the latest generation, have all enabled a centre to be created that provides a combination of welcoming surroundings, fun and excitement.

Today's ARC Swimming Centre is an aquatic centre with an indoor, heated 25 metre pool with eight lanes, a children's pool, a sauna and a relaxation area. The complex also has a bar, a gymnasium, a fitness centre, an infants' centre, five squash courts and multi-functional playing courts for basketball, netball and volleyball.

A large-scale refurbishment with Mapei products playing a key role to waterproof surfaces and install new ceramics.

### **REPAIR WORK AND PREPARATION OF THE CONCRETE**

Work on the installation of new tiles in the 25 metre indoor



**TO THE LEFT.** The 25-metre indoor swimming pool in the ARC Campbelltown Centre once all the work had been completed. More than 2,000 m<sup>2</sup> of ceramic tiles had been installed.

pool, the children's pool and on the water features in the recreation area started with removal of the old tiles and cleaning of all the surfaces.

KERAPOXY two-component, acid-resistant epoxy mortar was used to restore the expansion joints, while MAPEBAND TPE, a special tape in TPE, was used to form elastic, waterproof seals in the expansion joints and cracks subjected to movements.

EPORIP two-component, solvent-free epoxy adhesive was also used for these operations to monolithically seal the cracks in the screeds and the second pours in the rigid, waterproof joints.

The floors around the swimming pool were sealed with MAPEGROUT FAST-SET rapid-setting and drying, shrinkage-compensated, fibre-reinforced mortar for restoring concrete and sealing surface cracks.

The surfaces used by swimmers were treated with PLANI-CRETE SP (available on the Australian market), which is used as an admixture to make highly adhesive, cementitious slurry. The same slurry was also used to form a bonding interface for the two successive layers of MAPELASTIC SMART two-component, high-elasticity cementitious mortar, which is used to waterproof balconies, terraces, bathrooms and swimming pools.

PLANITOP FAST 330 rapid-setting, fibre-reinforced cementitious levelling mortar for internal and external surfaces, which can be used to integrate areas from 3 to 30 mm thick, was applied where required to level the reinforced concrete and make it suitable (after just 24 hours at +20 °C) for the successive application of the waterproofing product MAPELASTIC SMART.

To guarantee the maximum integrity of the sides and bottom of the pool before installing the tiles, MAPETEX SEL, a special, non-woven, macro-perforated fabric used to reinforce waterproof membranes, was integrated into the MAPELASTIC SMART membrane.

#### **INSTALLATION OF THE NEW CERAMICS**

Non-slip tiles (119x244 mm x 9 mm thick) were installed on the surfaces around the swimming pool using KERABOND PLUS adhesive mixed with ISOLASTIC 50 elasticising latex for cementitious adhesives (available on the Australian market) which, when used instead of water, improves the characteristics of the adhesive.

Other tiles specifically made for swimming pools were installed with KERABOND PLUS + ISOLASTIC 50, such as special shaped tiles to form a grip around the edges of the pool and on the surfaces of the grates on the wet platforms. The same adhesives were also used to bond the tiles on the walls, on the steps and on the skirting.

The product chosen to grout the tiles in the swimming



pool was ULTRACOLOR PLUS high-performance, anti-efflorescence, rapid-setting and drying, polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology, which is used to fill grout lines from 2 to 20 mm wide.

MAPESIL AC solvent-free, pure, mould-resistant, acetic silicone sealant was then used to form perfectly elastic seals in the expansion joints in the walls and floor.

With more than 2,000 m<sup>2</sup> of surfaces to be waterproofed and then used to install new tiles, 1,000 m<sup>2</sup> of surfaces to be levelled, 440 m<sup>2</sup> of concrete to be repaired, 1,060 m<sup>2</sup> of



cementitious screeds and 1,500 m of joints to seal with silicone, the key product for the final phase of installing the new tiles in the swimming pool was GRANIRAPID, a specific two-component, high-performance, rapid setting and hydrating deformable adhesive.

Indeed, thanks to its high bond strength and rapid-drying property, GRANIRAPID is particularly suitable for quick refurbishments and for areas that need to be put back into service immediately.

#### **PERFECT INSTALLATION ALSO IN THE SERVICE AREAS**

The product chosen to install the new tiles in all the service areas was TIXOBOND FINE S1 deformable, non-slip cementitious adhesive with extended open time, which is available on the Australian market.

The large format floor tiles in these areas were installed with white KERAFLEX MAXI S1 high-performance, deformable, non-slip cementitious adhesive with extended open time, Low Dust technology and very low emission of volatile organic compounds (VOC), particularly suitable for installing large format porcelain tiles and natural stone.

Before installing the new ceramic, all the damp surfaces in the service areas were waterproofed with MAPEGUM WPS rapid-drying, elastic, liquid membrane, which is used to waterproof internal surfaces.

The tiles in these areas were also grouted with ULTRACOLOR PLUS and the expansion joints were sealed with MAPESIL AC.



**FACING PAGE.** After the operations of substrates preparation and of waterproofing for the swimming pool have been carried out, tiles have been installed with GRANIRAPID and grouted with ULTRACOLOR PLUS.

**BELOW.** In the service areas the ceramic tiles have been installed on the walls with TIXOBOND FINE 1, an adhesive distributed on the Australia market. Expansion joints have been sealed with MAPESIL AC.

## IN THE SPOTLIGHT

### KERABOND PLUS

High-performance, C2E class cementitious (C), improved (2), extended open time (E) adhesive ceramic tiles and stone material. It is used to bond all types of ceramic tile (porcelain, single-fired, terracotta, double-fired, klinker, etc.) and mosaic on internal and external floors, walls and ceilings. It is also suitable for spot bonding insulating materials such as foam polystyrene, foam polyurethane, Rockwool, glass wool, soundproofing panels, etc. It helps contribute up to **4 points** to obtain the **LEED** certification.



### TECHNICAL DATA

**The ARC Campbelltown Fitness and Swimming Centre, Adelaide (Australia)**

**Period of Intervention:** 2016

**Intervention of Mapei:** supplying products for waterproofing and installing ceramic tiles

**Client:** Campbelltown City Council

**Project Architects:** Design Inc.

**Consulting Engineers:** FMG Engineering

**Works Manager:** Robert Maiolo

**Head Contractor:** Sarah Constructions

Pty Ltd

**Pool contractor:** South Pacific Pool Builders

**Installer Company:** Commercial Ceramics and G&G Tiling

**Mapei Coordinator:** John Francis (Mapei Australia)

### MAPEI PRODUCTS

Repairing of concrete: Mapeband TPE, Kerapoxy, Planitop Fast 330, Eco Prim T  
Waterproofing: Planicrete SP\*, Mapelastix

Smart, Mapetex Sel, Mapegum WPS  
Installation and grouting of ceramic tiles: Kerabond Plus, Isolastic 50\*, Ultracolor Plus, Mapesil AC, Keraflex Maxi S1, Tixobond Fine S1\*,

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

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

# HEATED FLOORS WITH A HIGH THERMAL YIELD

CHOOSING A SCREED WITH GOOD THERMAL CONDUCTIVITY ENABLES YOU TO INSTALL HIGHLY ENERGY EFFICIENT FLOORS

Installing a quality substrate is the key feature in guaranteeing the durability of floors.

And to achieve the best results, Mapei proposes a complete range of products and accessory items to create quality substrates: ready-mixed screed binders and mortars, self-levelling smoothing compounds, primers, soundproofing products to combat the noise of footsteps, and more.

If we take a look at the latest trends in this sector, the type of substrate most widely used over the course of the last few years is the heated screed, which is created by installing various types and sizes of heating systems, depending on the specific requirements of each project.

Alongside the thicker, more traditional systems (from 6 to 7 cm thick), which are used principally in new builds, a

new generation of more compact systems (around 3 cm thick), that are also suitable for installation in existing buildings under renovation, are becoming a common feature.

These systems are based on warm water (usually around +35°C) or cold water (depending on the time of year) circulating through a circuit covering a very large radiating surface area. This type of solution offers, on the one hand, a higher level of living comfort in individual rooms, while on the other hand they are more efficient compared with traditional systems and, as a result, help reduce energy costs by around 10-15%. The running costs of these heating systems may be further reduced by choosing products with a good level of thermal conductivity to make the substrate. To this aim, the Mapei Research & Development laboratories have developed

materials which guarantee the mechanical requirements of the products used to create screeds, but which at the same time are characterised by an excellent level of thermal conductivity certified by independent, external bodies.

■ **To create traditional heated screeds**, Mapei recommends using TOPCEM PRONTO pre-blended, ready-to-use, normal-setting, controlled-shrinkage cementitious mortar for quick-drying screeds (4 days). TOPCEM PRONTO is classified CT C30-F6 A1<sub>1</sub> according to EN 13813 standards and is characterised by its high level of thermal conductivity:  $\lambda=2.008$  W/mK. Also, when used for underfloor heating systems, TOPCEM PRONTO does not require any added plasticiser and enables substrates to be formed in compliance with the current European standard EN 1264-4.



**SYSTEM FOR THE INSTALLATION OF CERAMIC TILES ON HEATED SCREEDS**  
**SISTEMI PER LA POSA DI CERAMICA SU MASSETTO RISCALDANTE**

- |  |   |  |
|--|---|--|
| <p><b>1</b> Sottofondo in calcestruzzo / Concrete substrate</p> <p><b>2</b> Membrana insonorizzante / Soundproofing membrane<br/><b>Mapesilent Comfort</b></p> <p><b>3</b> Fascia insonorizzante / Soundproofing band<br/><b>Mapesilent Band R</b></p> <p><b>4</b> Nastro insonorizzante / Soundproofing tape<br/><b>Mapesilent Tape</b></p> <p><b>5</b> Barriera al vapore / Damp proofing membrane</p> | <p><b>6</b> Sistema di riscaldamento a pavimento / Heating floor system</p> <p><b>7</b> Massetto / Screed<br/><b>Topcem Pronto</b></p> <p><b>8</b> Adesivo / Adhesive<br/><b>Keraflex Maxi S1</b></p> <p><b>9</b> Grès porcellanato / Porcelain tiles</p> <p><b>10</b> Fugatura / Grout<br/><b>Keracolor FF</b></p> | <p><b>11</b> Sigillante / Sealant<br/><b>Mapesil AC</b></p> <p><b>12</b> Rasatura / Smoothing compound<br/><b>Planitop 560</b></p> <p><b>13</b> Primer acrilico / Acrylic primer<br/><b>Malech</b></p> <p><b>14</b> Carta da parati in fibra di vetro / Fiber glass wall paper<br/><b>EQ Dekor</b></p> <p><b>15</b> Pittura acrilica protettiva / Protective acrylic paint<br/><b>Colorite Performance</b></p> |
|--|---|--|

■ **To create compact underfloor heating systems,** made from pre-formed plastic of gypsum-fibre panels, Mapei recommends using NOVOPLAN MAXI rapid-hardening, hi-flow cementitious levelling mortar with a high level of thermal conductivity, classified CT C20-F6-A1, according to EN 13813 standards:  $\lambda = 1.727$  W/mK.



**Stefania Boselli.** Technical Services Mapei SpA



**SYSTEM FOR THIN PORCELAIN TILES ON UNDERFLOOR THIN HEATING SYSTEM**  
**SISTEMA DI POSA DI GRÈS PORCELLANATO SOTTILE SU SISTEMA RISCALDANTE A BASSO SPESSORE**

- |  |  |   |
|--|--|---|
| <p><b>1</b> Vecchia pavimentazione in ceramica / Existing ceramic flooring</p> <p><b>2</b> Sigillante / Sealant<br/><b>Ultrabond MS Rapid</b></p> <p><b>3</b> Sistema di riscaldamento sottile / Thin heating system<br/>Pannelli in fibrogesso / Gypsum fibreboard panels</p> <p><b>4</b> Primer / Primer<br/><b>Eco Prim T</b></p> | <p><b>5</b> Rasatura / Smoothing compound<br/><b>Novoplan Maxi</b></p> <p><b>6</b> Adesivo / Adhesive<br/><b>Ultralite Flex</b></p> <p><b>7</b> Grès porcellanato sottile (piastrelle LAMINAM 6 mm) / Thin porcelain tiles (LAMINAM 6 mm tiles)</p> <p><b>8</b> Stuccatura / Grout<br/><b>Keracolor FF</b></p> | <p><b>9</b> Sigillante / Sealant<br/><b>Mapeflex PU 45 FT</b></p> |
|--|--|---|



# TRAINING, RECOVERY AND INJURIES: THE TRILOGY OF SPORTING PERFORMANCE

7<sup>TH</sup> MAPEI SPORT RESEARCH CENTRE CONFERENCE  
AND 6<sup>TH</sup> "ALDO SASSI" RESEARCH GRANT

Hotel Le Robinie in Solbiate Olona (Varese) hosted the 7<sup>th</sup> Mapei Sport Conference on "Training, recovery and injuries: the trilogy of sporting performance", an important annual event for the world of scientific research specialising in sport.

The conference was organised by the Mapei Sports Research Centre, the beating heart of Mapei's interest in sport that has always been closely tied to various sports with the flower in its buttonhole currently being U.S. Sassuolo Calcio, the top-flight football club owned by Giorgio Squinzi. It was Mr. Squinzi who devised

the idea for Mapei Sport back in 1996 in a 'coming together of minds' with Prof Aldo Sassi (the co-founder, who passed away prematurely in December 2010). The Research Centre immediately stood out for its distinctive approach based on ethical principles and scientific rationality at the service of the Mapei Professional Cycling Team.

After dominating the world cycling scene for a decade, the facility widened its horizons to embrace other sports, such as football, basketball, athletics, golf, Alpine skiing and motorsports.

In memory of the person and scientific work of Professor Aldo Sassi - and for the purposes of financing new research projects connected with the "Sciences of Sport" - Mapei decided to sponsor a research award called the "Aldo Sassi" grant, which has now reached its sixth edition and is awarded every year to a young graduate in the Motor Sciences. This research grant worth €10,000 is awarded based on a public tender promoted through communication channels set up between the Mapei Sport Research Centre and the Giuseppina Mai



**RIGHT.** Dr Claudio Pecci, Health Director and Head of the Mapei Sport Centre, with Gaela Bernini, who spoke on behalf of Diana Bracco, President of the Italian Industrial Federation's Mai Foundation. Further on the right, Dr Luca Mondazzi, Head of the Sports Nutrition and Dietology Service for Mapei Sport's wellness programme.



Foundation. This latter foundation works in close partnership with the Italian Industrial Federation and is backed by businesses involved in promoting research and innovation in the fields of medicine, health and quality of life in particular, encouraging joint-ventures between universities, public research bodies and the business world.

Both Mapei and the Mai Foundation firmly believe that the business world and academia need to work together in our country to help young people express their talent. When universities and businesses work together, social mobility improves and young people really get involved in developing the country. Emerging generations are taught how to complete and rely on merit. The nation's intelligentsia is encouraged to emerge from their ivory towers and interact with the manufacturing world.

These are the reasons why over 250 people - mainly young university students, specialists, trainees or simply people with a passion for sport - decided to take part in the 7<sup>th</sup> Mapei Sports Research Centre Conference resulting in a record number of people in attendance. All these stu-



dents and trainers were joined by sports stars like the Italian Gianni Bugno, retired professional road racing cyclist, who listened to a series of interesting talks on the subject in question.

### RESEARCH IN POLE POSITION

After the official welcome by the Managing Director and Health Director, Claudio Pecci, who pointed out that Mapei is celebrating 80 years in business this year and has been supporting the Sports

Research Centre in Olgiate Olona for over 20 years, and Ms. Gaela Bernini, who spoke on behalf of Diana Bracco, the President of the Italian Industrial Federation's Mai Foundation, the conference proceedings were divided into three sessions.

The first session, chaired by Ermanno Rampinini, presented the research work carried out by Luca Mondazzi, head of sports nutrition and the dietary service for Mapei Sport's wellness program ("Molecular biology and dietology in sport: is this the beginning of a new era?"), Damiano Scolari from the Italian Winter Sports Federation ("Alpine skiing: muscular strength in women skiers"), Maurizio Fanchini from US Sassuolo Cal-



**ABOVE.** The speakers during the first session of proceedings: from the left, Ermanno Rampinini from the Mapei Sport Centre, Maurizio Fanchini from US Sassuolo Calcio, Damiano Scolari from the Italian Winter Sports Federation, Luca Mondazzi and Davide Ferioli from Milan University. **FROM THE LEFT.** Prof. Amilcare Collina from Mapei, Prof Paola Vago from Milan Catholic University, Marina Sassi, the wife of the late Prof. Aldo Sassi - who was the co-founder of the Mapei Sport Centre -, and Claudio Pecci.



**ABOVE.** Adriana Spazzoli, the Mapei Group's Director of Operational Marketing and Communication, with Luca Guercilena, manager of Trek Segafredo cycling team.

**TOP RIGHT.** Sofia Goggia, world championships bronze medallist in the giant slalom.

**BELOW.** The roundtable chaired by the journalist Federica Lodi. It was attended by Eusebio di Francesco, head coach of U.S. Sassuolo Calcio until the end of the 2016/2017 season, Massimo Rinaldi, sports director of the Italian Alpine ski team, Emanuele Tibiletti, trainer of Pallacanestro Reggiana basketball team, Sofia Goggia, Luca Guercilena, Giacomo Nizzolo, Italian national road race cycling champion, and Giorgio Squinzi, Managing Director of Mapei SpA and co-founder of the Mapei Sport Centre.



cio ("Training load and injuries in football: are they related by cause and effect?") and Davide Ferioli from Milan University ("Physiological determinants in basketball performance").

Three papers that really hit the mark, casting fresh light on a realm like sport in which scientific research plays a key role in optimising an athlete's performances. Then it was time to present the 6<sup>th</sup> "Aldo Sassi" research grant for graduates in the Motor Sciences, with talks by professors Amilcare Collina and Paola Vago from Milan's Catholic University, the wife of the unforgettable Aldo Sassi, Marina, and Andrea Bosio from the Mapei Sport Research Centre, who outlined a research project on the "Acute effect of training resulting in a restriction of the peripheral hematic flow in football and cycling", which the competition winner will be working on.

The second stage of proceedings, presented by Andrei Morelli, drew to a close with a talk given by Federico Donghi, winner of the 5<sup>th</sup> "Aldo Sassi" research grant, entitled: «Delayed potentiation, its effect in different sports: football and cycling».

## ROUNDTABLE

The final session was devoted to a roundtable chaired by the sports journalist Federica Lodi and involving Giorgio Squinzi, Eusebio Di Francesco (head coach of US Sassuolo Calcio until the end of the 2016/2017 season), Sofia Goggia (bronze medal winner in the giant slalom at the World Championships and national record holder for the number of podiums and points won in one single World Cup season), Giacomo Nizzolo (Italian road race cycling champion), Massimo Rinaldi (head coach of the Italian Alpine skiing team), Luca Guercilena (team manager of the Trek Segafredo cycling team) and Emanuele Tibiletti (trainer of Pallacanestro Reggiana basketball team), who discussed the two sides of training, i.e. training load and tapering.

Giorgio Squinzi began by emphasising the importance of training and teamwork, further emphasised by Guercilena, Rinaldi and Tibiletti, who are all used to working with different athletes sharing a common goal.

According to Mr Squinzi "great results can never be achieved unless an athlete's talent combines a determination





**ABOVE.** Professor Aldo Sassi's children, Marco and Valentina.  
**RIGHT.** Giorgio Squinzi's speech during the roundtable.



excel in any situation with the ability to recognise the importance of being part of a team".

The world of sport is awash with stories of talented athletes, who have seen their dreams shattered by injuries or physical problems of various kinds. But among these athletes, some still manage to overcome their misfortunes and rightly take their place in the history of their sport.

This is the case of the 25-year-old skier from Bergamo in Northern Italy, Sofia Goccia, who, along with the rest of the members of the Italian men's and women's ski team for the forthcoming World Cup, has just stated undergoing athletic assessment tests at the Mapei Sports centre.

"My sport requires plenty of commit-

ment and keeps me away from home for long periods. I have a very busy life and travel around the world for eight months a year. I am currently focusing on my physical fitness in training, building up my strength for when I need it, ready for the big events that lie ahead in Olympic year. I have been surprised by my sudden popularity, but I have not lost sight of my priorities", so the Italian skier told us.

"Due to an injury, I could not train properly during the winter, but getting to the starting line of the tour of Italy wearing the Italian national champion's jersey was a great achievement; and I am feeling very confident about the rest of the season and I'm sure I'll get some excellent results", so the cyclist Giacomo Nizzolo went on to say.

Just before the last game of the Italian Serie A football season and his last official match in charge of Sassuolo, Mr Di Francesco expressed his firm belief

that the work carried out by the Mapei Sports Research Centre was a key factor in his professional development and in the progress made by the team as a whole.

"Alongside technical skill and physical fitness, the scientific results of tests carried out on our players out on the pitch have been vitally important. The Mapei Sports method and our own abilities have helped us improve and we have achieved some important goals", so Mr Di Francesco concluded.

Next year's Mapei Sport Research Centre Conference will be hoping to attract the attention of an even greater number of dedicated professionals and young sports scientists, in accordance with the underlying spirit of Mapei Sport's mission, which is to "always work with scientific rigour and absolute respect for ethical-sporting values, contributing in this way to promoting a proper sporting culture in every realm of society".



**LEFT.** Adriana Spazzoli with Sassuolo Women staff and with Mapei Sport staff.



The XXXIII edition of the Re Stelvio cycle race was held in Bormio among the Valtellina mountains, on Sunday, 9<sup>th</sup> July and Mapei was the Main Sponsor.

With almost 3,000 competitors enrolled to take part, this classic sports event was as popular as ever with all the athletes taking part from lots of different European countries. The race, which is truly unique of its kind, is not just the mountain climb inevitably associated with the Tour of Italy: it is also an iconic climb for all cyclists making their own pilgrimage up this sacred mountain. And for Mapei it is a very special event in the world of sport.

Once again this year, the pure mountain air mixed with that healthy "Mapei atmosphere" encouraging everybody to put themselves to the test and really dig

# ReStelvio 2017 MAPEI

CYCLING, RUNNING AND FRIENDSHIP

+ STELVIO x TUTTI

MORE STELVIO FOR EVERYBODY

NEW: NOW ALSO OPEN TO E-BIKES



deep.

A peaceful challenge for tranquil minds in the serene atmosphere of the natural surroundings up in the high mountains: shades of green mixed with the blue of gentian, pinkish-grey rocks, occasionally accompanied by the sound of crashing waterfalls and the odd bird of prey, all set against the still and silent backdrop of distant glaciers. You really do feel like you are crossing through boundless space, but then everything suddenly changes when you reach the mountain pass. The weather is cold, the currents are stronger and the air so rarefied that the finishing positions of the competitors often changes dramatically over the last few kilometres as the altitude rises to over 2,500 metres.

It is no coincidence that once again last



*Ready, set, go!*

year the key stage of the centenary edition of the Tour of Italy (the stage won by Vincenzo Nibali) ended in Bormio on 23<sup>rd</sup> May after crossing Stelvio Pass at an altitude of 2758 metres. Ever since 1965, the highest altitude reached by the cyclists in each edition of the Tour of Italy is referred to as the “Coppi Summit”, although, even nowadays, it is inevitably Stelvio Pass that comes to mind when you think about the “Coppi Summit”: it is, in fact, the highest altitude the Tour of Italy has ever reached in its hundred-year history.

### **A THOUSAND CUSTOMERS, A THOUSAND FRIENDS OF MAPEI**

Almost 1000 Mapei customers and friends from Italy and abroad signed up to take part in the Re Stelvio event through the Mapei website.

The Re Stelvio Mapei competitive cycling race was the key event. The other sports events included the Mapei Aldo Sassi Memorial fun ride in memory of the deceased co-founder of the Mapei Sport Centre, the half marathon, and the foot race open to everybody.

Mapei's presence filled the air all the way

up the “Queen of Alpine roads” (a 21-km climb zigzagging almost rhythmically along 40 switchbacks for a total height gain of 1533 metres) for an entire weekend, even in Bormio city centre.

The event - with this year's mascot, a deer, appearing on all the commemorative jerseys - was organised by the Unione Sportiva Bormiese association in partnership with the Mapei Sports Centre. The event was sponsored by Parco Nazionale dello Stelvio, Banca Popolare di Sondrio, Pirovano (Sky University), Colnago and Santini.

This was a great publicity opportunity for Mapei. The event was filmed and broadcast on Bike Channel (Sky channel 214) and Mapei received plenty of publicity during the 16 separate showings with its billboards appearing at both the beginning and end of the programme.

The Mapei Sport Research Centre in Olgiate Olona, whose expert technicians attended the event in Bormio, published training tables for cyclists and runners so that everybody planning to take part in the event could prepare properly. The training plans covered the period from the beginning of May until race day.



The “Queen of Alpine roads”, a 21-km climb along 40 switchbacks for a total height gain of 1533 metres.

*The climbing**The assisted pedalling*

## RE STELVIO MAPEI AND THE "ALDO SASSI" FUN RIDE

After just two switchbacks you are out of Bormio's bustling city centre and in the midst of unblemished, fresh nature where you can breathe truly pure. Wide and well-surfaced roads are left behind as you enter the tiny narrow tunnels cut into rock.

You climb past waterfalls along the river that flows out of glaziers against the backdrop of the Ortles and Gran Zebrù inside the National Park.

Endless stretches of road running along the mountainside alternating with a tangle of switchbacks and steep slopes, where it is hard to keep up your pace. Some people grit their teeth and keep going, somebody had to walk and others give up. Only one thing counts for everybody, to get to the finish. Facts and figures aside, the Stelvio Pass is

all this: unique sensations making this a very special climb it gets more and more exciting as you pedal up the mountainside for over 20 km.

The men's race was won by Riccardo Romani (Alta Valtellina Bike) for the second year in a row with a time of 1h:04':50".50, beating his personal best by 40" and finishing ahead of Andrea Acquistapace (Velo Sondriese), who finished 54"70 behind, and Federico Brevi (Team Paredi) +1'33"50 behind the winner.

The women's race was won by Emily Collinge riding for the Postalesio Club, who came home in a time of 1h:11':23".40. Emily is actually a mountain runner, but also a great cyclist.

Christina Rausch, who won last year's race, came second +14"90 behind the winner and Marta Binda (Cellar Team Tredici) came third.

The men's winner of the "Aldo Sassi" fun rider was Franciszek Rzasa in a time

of 01h:16':57".90, ahead of Adriano Berera and Jan Elantkowski. First home in the women's race was Arianna Manzoni in a time of 1h:32':53".40.

## FUN RIDE WITH ASSISTED PEDAL POWER

This year's event was even more inclusive than ever: under the slogan "+ Stelvio x tutti" (More Stelvio for everybody), a non-competitive fun ride for bicycles with assisted pedal power was added to this year's schedule.

It was decided to allow this new type of increasingly popular bike to take part in the event to allow anybody keen to spend a few hours outdoors in the open air in some quite incomparable settings, most notably his majesty "King Stelvio Pass", to ride up to the summit of the legendary "Cima Coppi" on their own with just a little bit of assistance.

## FIDAL HALF MARATHON AND FUN RUN

The winner of the Fidal men's half marathon was the same as last year with Giuseppe Molteni (Daini Carate) finishing in a time of 1h:36':53"20, ahead of Massimiliano Zanaboni - 01:39':06".50 - and Loris Mandelli, 1h:39':51".7). The winner of the women's half marathon was also the same as last year, Ivana Iozzia (1h:50':46"90), who finished 12<sup>th</sup> overall in a race she stars in every year.

The amateur fun run was won by Mirco Quadrio in 2h: 08':15":70, ahead of Ivan Caron and Tommaso Alberti; the first woman home was Lidia Greco, who finished sixth.



*The arrival!*

*The award ceremony*



*Golf*

### 13° MAPEI GOLF TROPHY

The Re Stelvio Mapei weekend also included the traditional golf competition held on Bormio Golf Club's "La Fornace" course. The 13<sup>th</sup> Mapei Trophy using the Stableford scoring system with 4 balls (best ball counting). Ambrogio Picozzi and Edoardo Schiantarelli won the gross-score competition with 37 points.

Mattia Moretti and Alessandro Tomasi won the net-score competition with 43 points.

Moreno Poggioli and Roberto Bono came second with 42 points.

A number of other prizes were awarded to: Laura Squinzi and Santino Luigi Bellotti (leading senior team) and also Antonio Crippa and Giovanni Mussi (1<sup>st</sup> and

**BELOW.** The group of the winners of the 13<sup>th</sup> Mapei Golf Trophy held at Sondrio's Golf Club among the Valtellina mountains.



2<sup>nd</sup> net scores in Mapei's first category competition), Luigi Locatelli e Marcello Zamboni (2<sup>nd</sup> in Mapei's second category competition).



# “NEW” PALLACANESTRO REGGIANA: CONQUERING EUROPE!



**FILIPPO BAROZZI:**  
WE NEED TO BEGIN AGAIN  
DIFFERENTLY

Pallacanestro Reggiana's 2016-17 season ended at the quarter-finals of the championship play-offs: the team from Reggio Emilia was knocked out by Avellino and forced to settle for qualifying for the Eurocup. The previous two seasons Reggiana had qualified for the final of the Italian championships, first losing to Sassari after a seven-game battle and then to Milan in game 6. "To tell the truth – so Filippo Barozzi, chief operations officer of Pallacanestro Reggiana, had to admit - we expected more from the team in the 2016-17 season, since everybody agreed that we had an excellent squad. Perhaps there was something missing in terms of team spirit and we paid for our lack of experience playing at such high levels. Our period at the top did not last as long as we had hoped and we now need to begin again differently". This summer Reggiana is like a revolving door: Achille Polonara has left the team for Dinamo Sassari, Pietro Aradori and Stefano Gentile have transferred to Virtus Bologna, and Andrea De Nicolao

**LEFT.** Foreground, Jalen Reynolds (USA) is staying on at Reggiana.

**BELOW.** Leonardo Candi, the new Reggiana club captain.







**ABOVE.** The new signing Niccolò De Vico undergoes testing at Mapei Sport Centre.

now plays for Reyer Venezia. "A new cycle – so Barozzi claims - will now begin". Maria Licia Ferrarini is still the club president and Alessandro Dalla Salda remains the sports director with Alessandro Frosini as team manager and Massimiliano Menetti the head coach. As regards the main squad, the team will also around its center, Riccardo Cervi, and shooting guard Amedeo Della Valle. The team roster also includes the promising Federico Mussini, aged 21, who is back at Reggiana after training in the United States, Leonardo Candi, 20, who used to play for Fortitudo Bologna, and Niccolò Davico, 23, from Biella, who was voted the best player in the A2 championship in the 2016-17 season. In addition, there is also the experienced Michael Alexander Moser, aged 27, who played for a club in Kosovo until June. "Mike" Moser is an American-born naturalised Albanian. "Moser – so Barozzi assures us - is somebody we had been

following for years. Last season he was the best player in the Kosovo Championship. Reggiana is also continuing to place its faith in Jalen Reynolds (United States), a centre who is 2 metres 8 cm tall.

### EUROPE, HERE WE COME AGAIN

Thanks to its final league position in the 2016-17 Championship, Reggiana will be back playing in an international competition from 11<sup>th</sup> October. The club has qualified for the Eurocup, the second most important continental competition after the EuroLeague. The club from Emilia's qualifying group includes some top teams: Bayern Monaco (Germany), Galatasaray (Turkey), Podgorica (Montenegro), Lietkabelis (Lithuania), Hapoel Jerusalem (Israel). The Lavrinovic twins from Lithuania used to play for Reggiana and will soon be back on court at the PalaBigi playing for the opposition, Lietkabelis. "A tough and prestigious qualifying group – so Mr Barozzi noted -: we are proud to be taking on such famous clubs. They will help our club improve and raise its international status".

### 4.600 CHEERING FANS

Until last season, Pallacanestro Reggiana played its home games at the PalaBigi which had a capacity of 3,500. "The stadium was sold out for almost every game – so Filippo Barozzi noted - with all the seats being taken by our season-ticket holders and the special allocation for away fans". The PalaBigi can now seat 4,600, thanks to an initial round of restructuring work carried out by Reggio Emilia City Council: this corresponds

to a 31.4% increase in seating capacity. "This is a big increase and will enable us to develop new commercial and communication strategies. Until June 2017 our fans basically formed their own club: the faces were always the same. Now the PalaBigi can attract new supporters from different backgrounds: we would like to increase the number of families attending our home games, so we will be looking at how this can be achieved. As well as giving the team even more support, the 1,100 extra fans will mean higher takings and a boost to our image".

### WOMEN AND YOUTH TEAM

Until June 2017, 30-35% of Reggiana's fans were women. "That is why we are considering the possibility of creating our own women's team. So far, we have focused on the men's team, making notable investments to bring on young players. Our basketball school can boast about 200 young players aged between 6-13 years. We also have four teams involved in youth championships for players aged between 14-19 years".

U.S. Sassuolo Calcio is owned by Mapei: comparisons between Reggiana basketball team and Sassuolo football team are inevitable. "Comparisons with Sassuolo - so Mr Barozzi pointed out - are particularly challenging. They also play their home games in Reggio Emilia and their fitness tests and training schedules are handled by Mapei Sport Centre in Olgiate Olona, as are ours. Here at Pallacanestro Reggiana we hold Sassuolo in great esteem and we are frequently in contact with Giovanni Carnevali and the rest of the football team's management staff".

## STARLET MUSSINI IS BACK HOME

Federico Mussini, 1.82 m tall and born in 1996, is back playing for Reggiana. Federico is a playmaker, who began playing for Reggiana at the age of six. He went over to play for St. John's basketball team from summer 2015 until July 2017: a sort of training camp in the United States to allow this young man born in Reggio Emilia to perfect his technical skills. He is now back at Reggiana. "Based on testing at Mapei Sport Centre – so Mussini told us – I am already match fit". For him it will be like playing for a totally new Reggiana team in the 2017-18 season. "The only member of the team I have already played with – so Mussini noted – is Cervi. I cannot wait to play in the Eurocup: I have always admired teams like Galatasaray and Bayern and now I will be playing against them". Mussini has already played for various Italian youth teams and is rightly ambitious: "I hope Reggiana will help me get into the full Italian team as a playmaker. That is my dream".





# CARNEVALI

“THE YOUNGSTERS WILL GIVE US EXTRA DRIVE”

**ABOVE.** Guido Angelozzi (head of the technical department), Carlo Rossi (president), the head coach Cristian Bucchi, and the director of football Giovanni Carnevali.

## SASSUOLO HAS BEGUN ITS FIFTH LEAGUE CHAMPIONSHIP IN SERIE A

Summer 2017, after training in different Italian regions, Sassuolo has begun its fifth championship in the Italian Serie A. The new head coach is Cristian Bucchi and the striker, Gregoire Defrei, and other players have left the club, but there are also plenty of new faces: is this a fresh start or will things carry on as they were?

“This season we plan to continue along the path we have taken - so Giovanni Carnevali, the general manager and CEO of Sassuolo, announced -. The project supported by Mapei and by U.S. Sassuolo Calcio's technical-sports staff is continuing. We firmly believe that Bucchi will get the best out of our young players”.

**Giovanni, many people believe that Sassuolo first got in contact with**

**Bucchi in January 2017. Does that mean you knew well in advance that Eusebio Di Francesco would be leaving Sassuolo in June?**

“We hold Di Francesco in great esteem and we knew right from the 2015-16 season that he would receive offers from big clubs. Back in January 2016 we knew that AS Roma and other big-name teams wanted to sign Eusebio in June. And so, to make sure we were not caught unawares, for a number of months we kept a careful eye on Perugia's matches and Bucchi's work. After carefully monitoring the situation, the club executives and I were convinced that Bucchi would be the right man to continue our programme based around young players, hard work, enthusiasm and planning. Cristian was always our first choice. So yes, things will carry on as they are under his leadership”.

**Has this year's summer transfer market been tricky for Sassuolo?**

Definitely. Over the last few years we have worked well and lots of people wanted to sign our star players. But Mr Squinzi has always been quite adamant on this matter: he wanted to hold onto the entire squad or most of the players and we have done everything possible to keep our best players or replace those leaving the club in the best way possible. It has not been easy”.

**Mr Squinzi has also said he would like to see Sassuolo playing in the Champions League. Will you be able to give him what he wants?**

“Our boss is right to be ambitious, expecting us to qualify for the Champions League within a few years. Achieving that will not be easy, but we are ready to do our very best to get the best results possible. I can only emphasise that everybody will have to work consistently hard if we are to reach such lofty goals”. One of the best moves Sassuolo made this summer was to extend the Franc-

esco Acerbi's contract, the 29-year-old central defender. Francesco has been with Sassuolo since summer 2013 or, in other words, ever since the team was promoted to the Serie A. Despite offers from clubs of the calibre of Inter Milan, Zenith St Petersburg (the new head coach, Mancini, was very keen to sign Acerbi) and Galatasaray, Francesco has signed a new contract with US Sassuolo Calcio, which runs until June 2022. Galatasaray from Istanbul were particularly keen to sign Acerbi. "The Turkish management staff - so Carnevali told us - even came to our team headquarters in Sassuolo and made some financial offers that were hard to refuse. But we decided to hold onto Acerbi, who is now glad he decided to stay: once again he opted for the Sassuolo-Mapei work methods and projects.

Francesco made his decision with our help, assessing everything very carefully". It is worth pointing out that the last few Italian national team coaches, i.e. Prandelli, Conte and Ventura, have all picked Acerbi for the Italian squad. He has already played twice for Italy. "Holding onto Acerbi is important - so the new head coach, Cristian Bucchi, noted - because, as well as being the backbone of our defence, he is an incredible team player: he knows how to create the right team spirit".

**Mr Carnevali, among the players you have kept on is the Spanish attacking full-back, Pol Lirola, born in 1997. Is Pol ready to make a big impact?**

"We signed him from Juventus last summer, where he had only ever played for the youth team. With us he has



**ABOVE.** Francesco Acerbi in action.

**BELOW.** From the left, Francesco Cassata and Davide Biondini.

played a full season in the Serie A and Europa League. It has been a "baptism of fire", which has been extremely successful. Nevertheless, he must improve even more if he is to reach the next level, particularly as regards his creative play". Talking about young players, Sassuolo will be without Cristiano Dell'Orco, born in 1994, for several months: at the end of last season he injured his knee, at the end of last season. "Unfortunately - so Carnevali went on to say - he will not be playing again until January. A real shame: Dell'Orco had even been selected for the Italian under 21 team. Di Francesco played him in defence against Inter Milan and other top teams in last year's lea-



**SQUINZI: "SASSUOLO, I WANT YOU IN THE CHAMPIONS LEAGUE"**

Last season, for the very first time, Sassuolo played in the Europa League as well as the Italian League Championship and National Cup. "Last season was exciting but we had no luck - so the club owner, Giorgio Squinzi, stated during a workshop organised by sponsors at Pianderna Agriwellness in Scandiano (in the region of Reggio Emilia). But the Europa League is not enough for me. Sooner or later I would like to qualify for the Champions League". It is hard not to make comparisons with the magnificent victories Mapei achieved when sponsoring one of the world's top professional cycling team from May 1993 until the end of the 2002 season: "For somebody who won 654 cycling races - so Mr Squinzi pointed out - just taking part is no good: I want to win at football, too".

While at Scandiano, the Mapei boss also told us an anecdote about Massimo Allegri, who once coached Sassuolo before moving on to Cagliari, Milan and, most notably, Juventus. Allegri's experience at Milan came to an end at Mapei Stadium in January 2013: Sassuolo beat the red-and-blacks 4-3 and Massimo was fired. "Max Allegri - so Giorgio Squinzi told us - thanked me for helping him get sacked: a few months later he got the Juventus job and the rest is history".

## » THIS SEASON WE PLAN TO CONTINUE ALONG THE PATH WE HAVE TAKEN - THE PROJECT SUPPORTED BY MAPEI AND BY U.S. SASSUOLO CALCIO'S TECHNICAL - SPORTS STAFF

### BUCCHI: "WE MUST BE HUMBLE BUT FEARLESS"

The new club coach, Cristian Bucchi aged 40, has a two-year contract with Sassuolo. He was chosen as an up-and-coming manager, whose teams play attractive football. The coach is not worried about that: Yes, I am young - so the former Modena and Napoli striker told us - but let's not forget that I have already been coaching for five years and over the last few seasons I have been working in environments that help you grow and progress. So yes, I am ready to work for a serious and ambitious club like Sassuolo".

The new head coach also has clear ideas about his targets for the 2017-18 season: "The first target is to make sure Sassuolo keeps on improving the way it has over the last few years thanks to the great work by former coach Di Francesco, who is a friend of mine. Sassuolo is a team that focuses on young players and Italians make up most of the squad. There is certainly no lack of quality players, who can help the rest of the team as they keep on improving themselves.

Bucchi knows that life is hard in the Italian Serie A: "We are expecting a very tough season, Serie A is tricky and challenging. We must be very humble but keep in mind that we can compete with anybody, without worrying about reputations. We must make sure the other teams respect us".



gue championship. Fortunately, Claude Adjapong also decided to stay with us. Even though he is only 19 years old, he already has lots of admirers among the executive staff of many top teams. Adjapong came through our youth program and won the prestigious Viareggio Tournament playing for us. He realises he could have a bright future with Sassuolo. He is an enthusiastic player who could really help bring on other young players. The youngsters could give us that extra drive".

Francesco Cassata, aged 20, joined the club from Ascoli and has already collected a number of appearances for Italy's youth teams as a midfield player. This player, who was born in La Spezia, came third in the World Championship playing for the under 23 team. "Cassata - so the managing director noted - was considered to be the best player in last year's Serie B championship, according to lots of leading experts. We believe that playing at the top level will really bring him on".

Cassata and other young players can draw inspiration from several experienced players, including Davide Biondini, aged 34, Francesco Magnanelli, aged 32, Simone Missiroli, aged 31, and Paolo Cannavaro, aged 36. "They really wear the Sassuolo shirt on their hearts - so Giovanni emphasised - Biondini and Magnanelli both had to work really hard in spring 2017 to recover from injuries. Particularly Magnanelli. But they are as keen as ever to perform well".

**The 2017-18 League Championship began on 20<sup>th</sup> August, very early this year. Bearing in mind all the new players, would you have preferred to begin in September to give Bucchi and the team a few weeks longer to prepare?**

"We would have been happy if the players could have had a couple more weeks' holiday. Nevertheless, we are pleased about one thing: beginning early will immediately give us the chance to show how competitive we are". Sassuolo has plenty of plans, including the construction of a new sports centre in Cà Marta (Sassuolo, in the province of Modena, Italy). "Construction work - so Carnevali assured us - will begin soon. The new sports centre will be the main training facility for both the first and youth teams". A new miracle by Mr Squinzi and his colleagues seem to be just around the corner.

**BELOW.** From the left Carnevali, Magnanelli and Squinzi.



### CLUB RECORD: CAPTAIN MAGNANELLI MAKES IT 13

Sassuolo's record-breaker is midfield player Francesco Magnanelli, who was born in Umbertide, Umbria, in 1984. Magnanelli has just started his 13<sup>th</sup> season playing for Sassuolo. Magnanelli, who is also the team captain, joined the Mapei-sponsored club in summer 2005. He is the only member of the current squad who has played for Sassuolo in four different leagues: Italian division C2 (2005-2006 season), division C1 (2006-07 and 2007-08), then Italian Serie B for 5 seasons from summer 2008 until June 2013 and, finally, from July 2013 in the Italian Serie A. Up until June 2017 he made 379 appearances for Sassuolo in the various leagues, scoring 8 goals, plus a further 22 games in the Italian cup (1 goal). The record-holder for appearances for the black-and-greens was unlucky last season: he snapped the anterior cruciate ligament in his left knee during the game against Fiorentina at Franchi Stadium in December 2016.

He was back playing again in the last game of the season and even scored a goal. The team manager, Giovanni Carnevali, and the other club executives have great faith in Magnanelli: they have extended his contract until June 2019. This is what the head coach, Mr Bucchi, has to say about Magnanelli: "For us he is quite simply a permanent fixture in the team".



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# NEW ECONOMIC GROWTH

## THE ROLE OF SCIENCE, TECHNOLOGY, INNOVATION AND INFRASTRUCTURES

HERE IS THE JOINT STATEMENT BY THE G7 ACADEMIES OF SCIENCE THAT MET IN ROME ON 3<sup>RD</sup> MAY CHAIRED BY ALBERTO QUADRIO CURZIO



**ABOVE.** Alberto Quadrio Curzio, Emeritus Professor of Political Economy, Catholic University of Milan. President of the Accademia Nazionale dei Lincei.

### **Introduction by Alberto Quadrio Curzio**

*The Joint Statement «New economic growth: the role of science, technology, innovation and infrastructure», the result of a year's work, is a document in which every word has been carefully studied and then validated at the meetings held on 23<sup>rd</sup>-24<sup>th</sup> March 2017 involving scientists representing the National Academies of G7 countries. The draft copy presented by the Lincei at the meetings was written under my supervision by a Work Team composed of Lincei members Sergio Carrà, Massimo Inguscio and Alessandro Roncaglia, with the backing of such outstanding scientists as Fabio Beltram, Mario Pianta, Patrizio Bianchi and Edoardo Reviglio.*

*Consequently, there is nothing to add to the Joint Statement, but I am only too pleased to give my own personal thoughts to express my sincere thanks to Mapei, which, along with others, supported the Lincei in carrying out all the organisational and hospitality work. I firmly believe that the scientific and technological revolution underway will result in paradigms of new economic growth, which will inevitably have to take into account the various aspects of sustainability referred to in the 2030 Agenda promoted by the United Nations aimed at reducing the gap between the north and south of the world. All this requires massive investment in research, education, training and, more*

*generally speaking, both tangible and intangible infrastructure to encourage inclusive growth. Without these investments, the imbalances between the north and south of the planet will only increase. But we do not have much time on our hands, because demographic growth in Africa will see the population rise from 1250 million to 3500 million by 2050. Figures which clearly indicate that migration cannot be the solution. Over the last three years, the G20 have rightly emphasised this theory, but it seems to us that governance policies supporting cooperation between the public and private sectors are still weak. We have great belief in supranational organisations and multilateral development banks that are working in this direction, although at quite different rates. European policies, although relatively weak, also point towards operations of this kind.*

*The Lincei have been thinking along these lines for a decade, partly with the contribution of high-tech companies to prove that techno-science, infrastructure and sustainable growth are highly interconnected. The gap between the financial economy and real economy needs to be narrowed by drawing in enormous worldwide financial resources to create a system of tangible and intangible infrastructure focusing on creative solidarity.*

## POLICY RECOMMENDATIONS

The Academies of Science of G7 nations are urging governments to:

- Increase in investments and capabilities in pre-competitive science and technology;
- increase investment in infrastructures - both tangible and intangible - which contribute to inclusive growth and progress in science and technology;
- promote the development of expertise in designing, engineering, producing and marketing products and services based on the latest science and technology;
- promote open access – subject to appropriate regulations on intellectual property - to advances in science and technology, preventing monopolistic practices from taking hold;
- share effective practices and policies that promote innovation, the sharing of technology and efficient development of infrastructures. Action like this could be taken in conjunction with all appropriate partners, such as National and Multilateral Development Banks, particularly with a view to reducing the gap between the North-South;
- ensure an appropriate governance framework is adopted, so that the benefits of science and technology are fully exploited while maintaining people's trust.

## 1. CHALLENGES

### 1.1. Science and technology for growth and sustainability

Science, technology and innovation task have long been significant drivers of economic growth and human development. Growth relies on bringing together basic and applied research, on both a public and private level, internationally. The chal-

## ➤ GROWTH RELIES ON BRINGING TOGETHER BASIC AND APPLIED RESEARCH, ON BOTH A PUBLIC AND PRIVATE LEVEL

lenge is to make sure that, even during periods of economic slowdown, science and technology continue to focus on targets related to sustainability and improving living conditions in all nations. Specific institutional frameworks are required to make sure that the potential of both science and technology is aligned with the paths

and strategies of economic growth, social inclusion and environmental sustainability, as argued by the United Nations report, "Transforming our world: the 2030 Agenda for Sustainable Development". This year, our statement underlines the importance of investing in science, technology and infrastructures in accordance with Goal no. 9 of the UN 2030 Agenda for Sustainable Development: "Build resilient infrastructures, promote inclusive and sustainable industrialisation and foster innovation". In the aftermath of the 2008 economic recession that has slowed down worldwide economic growth, we must make sure that investment in science, technology, innovation and infrastructures increases to help bring about inclusive and sustainable worldwide growth.

### 1.2. Technological and innovation drivers for new growth

Innovation has played a crucial role in the rapid growth of both advanced and emerging economies. Nevertheless, there are growing concerns that the benefits of economic growth guid-

**BELOW.** Group photo of the delegations of the National Academies of Science of Italy, Canada, France, Germany, Japan, United Kingdom and United States and of leading international networks coordinated by Professor Quadrio Curzio (7<sup>th</sup> from the left).



ed by technology have not reached every member of society. In addition, economic growth is raising demands on limited natural resources and is contributing to climate changes. In addition, the spread of new information technologies also raises issues of ethics, privacy, security and trust. Today, technological drivers are causing increasing impact on:

- The digitalisation and automation of production, including the integration of various drivers in the reorganisation of economic activities;
- Smart systems, particularly in the fields of renewable energy, transport, mobility and man-machine interfaces;
- Artificial Intelligence with its capacity to alter the balance between life and work and impact on many other fields, such as transport and health care;
- Biomedical technology exploiting emerging knowledge from genomics and its expansion into other realms of the 'omics' revolution, with benefits extending beyond just health;
- Sustainable forms of technology that can reshape production and in ways that conserve natural resources, reduce climate change and improve the quality of the environment. Attention needs to be focused on emerging forms of technology, which can impact on practically every single economic activity;
- Nano, Bio and Quantum technologies making it possible to control matter (everything from inorganic to living matter) on an atomic level, with boundless applications in industry, health and infrastructure);
- Data Science, thanks to its capacity to generate new knowledge and policy capability by the integrated algorithmic analysis of diverse data, currently generated at an exponential rate. These scientific advances - and others that will emerge in the realms of materials, information and other fields - have disruptive potential and deserve attention not just in terms of public and private investment, but also as regards the need for new public policies capable of ensuring the benefits of science and technology are fully exploited, while moving towards global sustainability, inclusion and social responsibility.

## 2. STRATEGIES AND PUBLIC POLICIES

### 2.1. Investing in science and technology

Increasing public and private investment in science and technology is required to take on the challenges associated with sustainable and inclusive growth. Expenditure on research and development as a share of the Gross Domestic Product (GDP) has only increased in a few countries and dropped or remained the same in several developed and emerging nations. This contrasts with the policy objectives of many nations, such as the European Union's "Europa 2020" goal of spending 3% of GDP on research and development. Current gaps in commitment to research and development make it harder to access, adopt and expand knowledge and innovation, thereby limiting any possible benefits. Public policies need to acknowledge the essential role spending on fundamental research, the advancement and diffusion of knowledge, culture, higher education and innovation can play in supporting quality socio-economic growth and that these benefits outweigh short-term concerns about balancing public finances. Many businesses have recently decreased investment in research

and technology - which calls for a long-term perspective on investments - preferring short-term returns from financial operations; this is yet another threat to economic growth. Well-planned public policies could encourage longer-term private investment, also supporting high-risk enterprises. In some cases, public-private partnerships and fiscal incentives could encourage joint business investment in precompetitive research in science and technology. Various arrangements for securing finance - both public and private - are required for G7 nations to hit the United Nations' Sustainable Development Goals. These funds could support infrastructures and environmentally sustainable investment and infrastructure and also help develop products, processes and organisations consuming less energy, land and natural resources that have less impact on the climate, moving towards renewable energy sources and sustainable transport systems, which take into consideration the repair and maintenance of existing infrastructure and protect natural ecosystems.

### 2.2. Investing in infrastructure

The provision of both tangible and intangible infrastructures is a prerequisite for inclusive and sustainable growth and an important example of the need for public intervention. Growth based around new technology calls for new types of infrastructure: digital connectivity, broadband communication systems, smart renewable energy grids and sustainable transport systems require the developing of new or upgraded infrastructures. At the same time, more powerful cooperation networks are required in research, knowledge generation, technology transfer, the spread of innovation, human resource development, education, re-training and skills, raising public awareness and dialogue about science and technology. Due

➤ **INCREASING PUBLIC AND PRIVATE INVESTMENT IN SCIENCE AND TECHNOLOGY IS REQUIRED TO TAKE ON THE CHALLENGES ASSOCIATED WITH SUSTAINABLE AND INCLUSIVE GROWTH**





to the recent slowdown in the economy, most nations have reduced their spending on infrastructure and public investment, despite the availability of low-cost financing. A new growth in investment is now required, as has been underlined, for example, by the OECD and G20 summits in Turkey (2015) and China (2016). Several studies have documented the huge gap between current investment in infrastructure and that needed to achieve the United Nations' Sustainable Development Goals. Innovative solutions drawing heavily on new technology might make it possible to provide and manage these infrastructures at lower costs. This lack of investment means that the current slowdown in worldwide growth is destined to continue.

### **2.3. Innovation diffusion: matching institutions and markets**

A series of conditions must be in place if innovation is to promote shared, sustainable growth. On the supply side, proper long-term public financing in research and development is required to promote knowledge as a public asset. Demand - both private and public - for goods and services linked with new technology must also be suitably high. Governments have an important role to play in stimulating this new demand through targeted public research plans, procurement for public services and public investment in infrastructure. In order for financial projects, markets and social enterprises based around new technology to emerge, institutions, rules and appropriate reference frameworks must be set in place. Examples include common standards, global platforms and digital networks. Developing these and other activities needs to be based around shared ethical values, protecting privacy and security, and rules ensuring access and preventing the emergence of monopolies. Suitable institutional agreements on an international scale are required to take on these challenges.

### **2.4. Reducing the North-South divide**

There is evidence of divergence in science and technology activities and investment in infrastructure among and within G7 and G20 countries, as well as between the North and South. All nations - including emerging countries - should be encouraged and supported in their need to allocate more resources to research, education and innovation. In addition, the success of certain emerging economies has shown the value of spreading scientific knowledge, technology and education. Nevertheless, the North-South divide is still big, particularly as regards science and technology, and new disparities are likely to emerge in digital technology, access to knowledge, environmental conditions and health care. International agreements to ensure an open scientific system and reciprocally favourable technology flows between nations are an important condition for making more progress. To meet these challenges, Multilateral and National Development/Promotional Banks must take on a more significant role in addressing such challenges, as they combine governmental legitimacy, a policy mission and their own direct intervention on the global financial markets. They can mobilise large private financial resources, ensure suitable investment policies, manage and control the intervention of innovative infrastructural projects.



## **SCIENCE IS AN INTERNATIONAL ENDEAVOUR AND COOPERATIVE ENTERPRISE**

### **3. THE ROLE OF G7 ACADEMIES**

The Academies of Sciences of G7 countries have important responsibilities in identifying the challenges for research and in promoting effective institutional frameworks capable of providing technological solutions for inclusive and sustainable growth. We reaffirm that science is an international endeavour and cooperative enterprise. The role of these Academies as guardians of the values of free inquiry and the fundamental importance of scientific evidence is more vital than ever. In advising governments on policy, the Academies should adopt a holistic approach to issues of sustainable growth based around interdisciplinary research involving the natural, social and human sciences. The Academies are also committed to promoting public forums for discussing important developments in science and technology, notably focusing on the links between them. To achieve these goals, the Academies of Science of G7 countries are committed to working together - both directly and through international associations - to tackle international-scale issues, find joint solutions and assess all the implications of political choices.

### **4. RECOMMENDATIONS TO G7 GOVERNMENTS**

Through this Statement, G7 Academies of Science call on governments of G7 nations to take action to implement the UN 2030 Agenda for Sustainable Development, paying particular attention to Goal no.9 on innovation and infrastructures. Investment in science, technology, innovation and infrastructure are an essential driver for inclusive and sustainable worldwide growth. To this end, G7 Academies of Science urge their governments to act on the policy recommendations listed above.

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Signed by the Presidents of National Academies of Science of Italy, Canada, France, Germany, Japan, United Kingdom and United States.



©Veneranda Fabbrica del Duomo di Milano

**LEFT.** The board of directors of the Italian institute "La Veneranda Fabbrica del Duomo". From the left: Claudio Sala, Ferruccio Resta, Fedele Confalonieri, Simona Beretta, Luigi Roth, Mons. Gianantonio Borgonovo and Giorgio Squinzi.

for three years, two of them are appointed by the Diocesan Ordinary and five by the Ministry of the Interior, after consulting with the Archbishop. One of them is then appointed President.

The Minister of the Interior currently in office, the Right Honourable Marco Minniti, issued a special decree (D.C.A.C. no 48/2017) to reappoint the members of the Board of Directors for another three years. The directors are Simona Beretta, monsignor Gianantonio Borgonovo, Fedele Confalonieri, Ferruccio Resta, Luigi Roth, Claudio Sala and Giorgio Squinzi. After the farewell speech by the outgoing President, Mons. Gianantonio Borgonovo, the Board of Directors appointed the new president, Fedele Confalonieri, on 18<sup>th</sup> July.

"I am honoured to take office as the president of the Board of Directors of the Veneranda Fabbrica del Duomo di Milano, I will do my utmost to be myself and represent all the people of Milan during my time in office, working in close partnership with all the other members of the Board of Directors": were the president's first words after being appointed.

While wishing all the very best to newly-appointed President Confalonieri and reinstated director Giorgio Squinzi, both Milanese and real AC Milan supporters, it is worth remembering the wonderful definition of "Milanese-ness" coined by somebody who knew Milan very well. Here is what Alessandro Manzoni poet and novelist of the utmost importance in Italian culture and history, wrote: "Milanese-ness is an either inborn or acquired aptitude for distinguishing the useful from the useless. Being Milanese is almost a philosophy embodied in the worship of efficiency and decorum".



# VENERANDA FABBRICA DEL DUOMO



GIORGIO SQUINZI HAS BEEN REAPPOINTED ON THE BOARD OF DIRECTORS OF THE FAMOUS OLD MILANESE INSTITUTE SET UP TO SAFEGUARD THE BEAUTY OF MILAN'S MOST IMPORTANT LANDMARK AND NOW CHAIRED BY FEDELE CONFALONIERI

Being born, growing up and living in one place is something we cannot overlook if want to try and get a better grasp of who we are and what we are really like. Occasionally focusing on Mapei's Milanese roots means retracing the history of a company and a family, which has always had very close ties with Milan that are growing even stronger as each year goes by.

Mapei has always been closely tied to the city's economic and cultural fabric, helping it to grow through the products it manufactures, which have been used to repair and restore important buildings and are still used for the most important projects in modern Milan.

Mapei's direct relations with the city of Milan mean it is often involved in projects aimed at supporting Duomo Ca-

thedral, the city's landmark building that has drawn on the company's products and technology in the past to repair and waterproof its terraces and protect the ornamentation on its façade.

Another very recent example is the boss of Mapei, Giorgio Squinzi's reappointment on the new board of directors of the Veneranda Fabbrica del Duomo, unquestionably the oldest and most loved of all Milan's institutions. The Fabbrica, a public institute, was founded in 1387 by Gian Galeazzo Visconti, who was then ruling over the city, to build and manage Milan Cathedral's intricate "machinery", a monument that is now visited by 5 million tourists-a-year with somewhere between 7-10,000 visitors every day. There are seven members of the Fabbrica's Board of Directors, who remain in office

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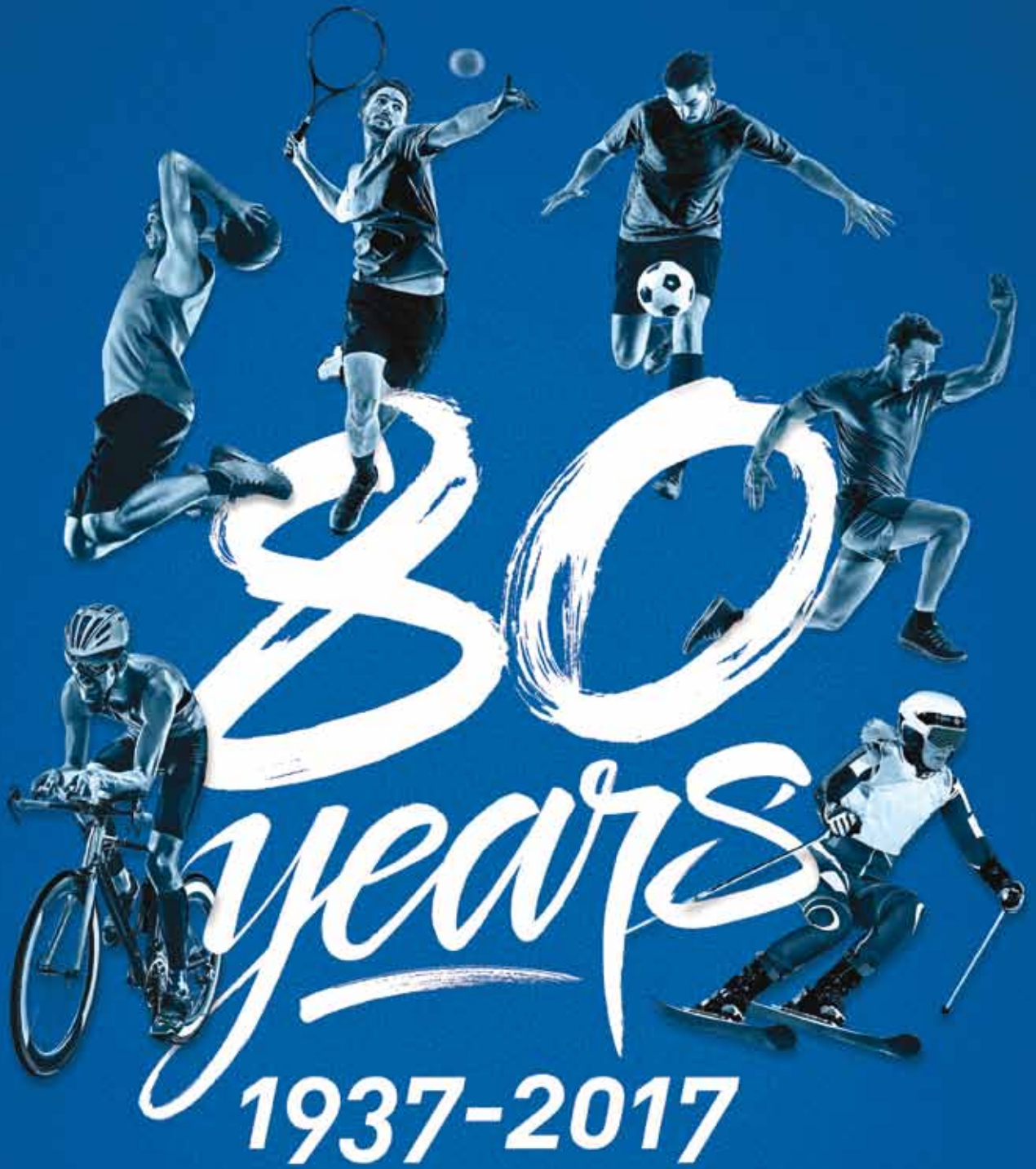
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